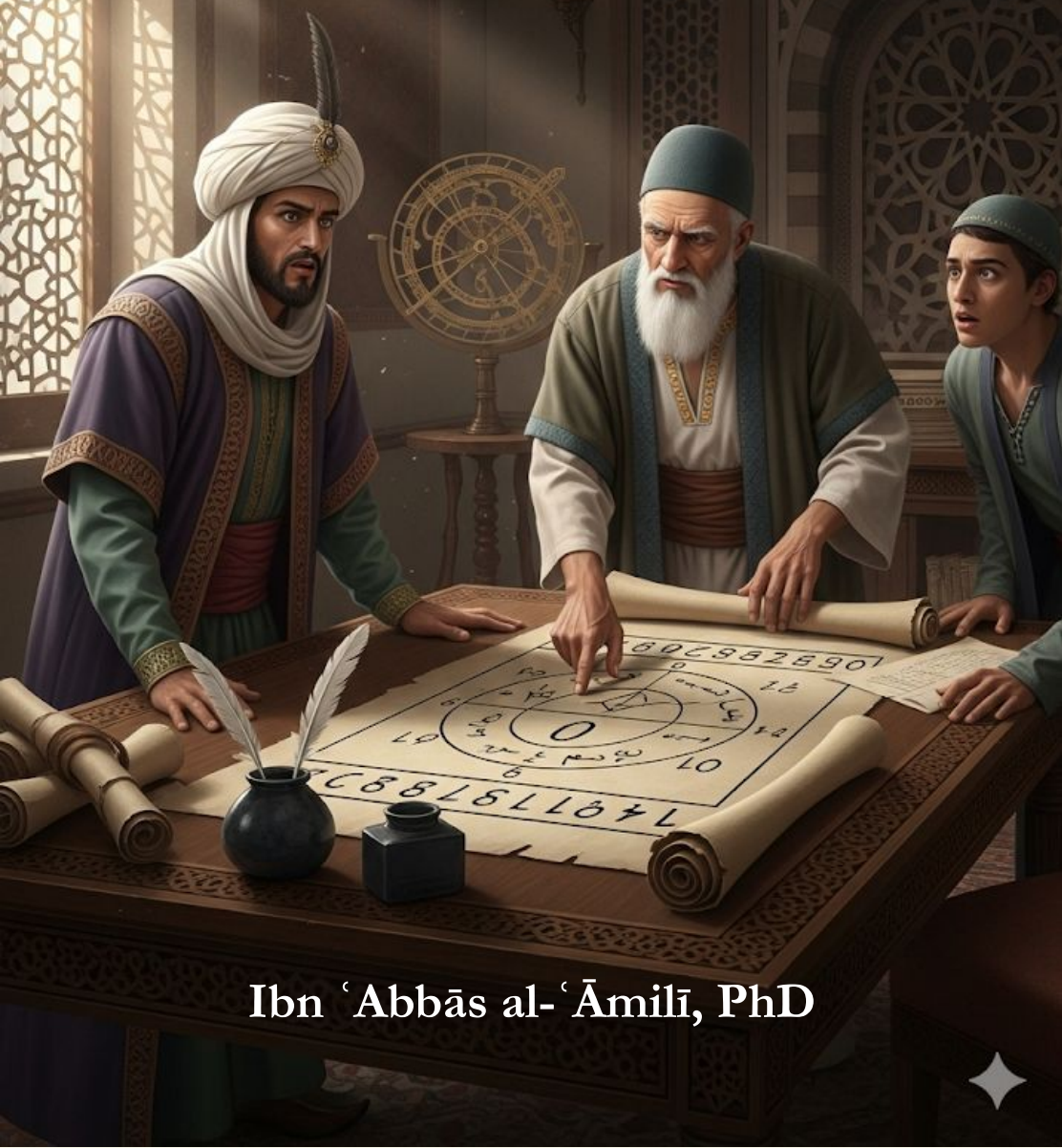


The Merchant, the Imam, and the Secret of the Number Zero



Ibn 'Abbās al-Āmilī, PhD

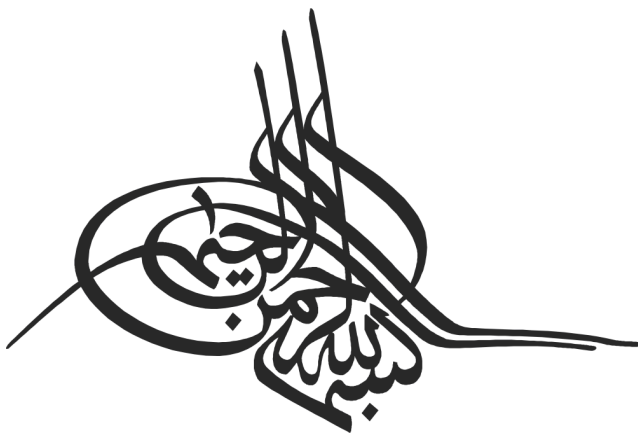


Prolegomena to Al-Bayān Logic

The Merchant, the Imam, and the Secret of the Number Zero

*A Qur'anic Tale of the Birth of Arithmetic, Algebra, and
Algorithms: How the Qur'an Inspired the Invention of
Numbers, Logic, and Justice*

Ibn 'Abbās al-'Āmilī, PhD



﴿رَبِّ اشْرَحْ لِي صَدْرِي * وَيَسِّرْ لِي أَمْرِي * وَاحْلُلْ عُقْدَةً مِّن لِّسَانِي *
يَفْقَهُوا قَوْلِي﴾ (طه: 25-27)

“My Lord, open up my heart for me and make my task easy for me. Loosen a knot from my tongue so that they may understand my speech.” (Qur'an, Ta-Ha: 25-28)

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﴿إِنْ أُرِيدُ إِلَّا الْإِصْلَاحَ مَا اسْتَطَعْتُ وَمَا تَوْفِيقِي إِلَّا بِاللَّهِ
عَلَيْهِ تَوَكَّلْتُ وَإِلَيْهِ أُنِيبُ﴾

(هود: 88)

*“I only want to put things right as far as I can. My success
comes only through God. In Him I trust and to Him I turn.”*

(Qur'an, Hud: 88)

The Merchant, the Imam, and the Secret of the Number Zero

Advance Reading Copy — Not for Sale

This novel seeks to bring the branches of knowledge together on a single scale, establishing the Holy Qur'an as its source, its method, and its measure. Within these pages, it becomes clear how the spark of computation and the principles of algebra emerged from the spirit of revelation, and how the Khwarizmian methodology was born—an algorithm that would change the face of history and become a pillar of the experimental sciences, technology, computation, and artificial intelligence.

Through a fictional narrative inspired by the life of Al-Khwarizmi, scholars gather in the “Imam’s Circle.” There, they reveal how the Qur'an unfolds with the light of wisdom to ignite innovation and inspire minds with inexhaustible solutions. Their council becomes a bridge between heaven and earth, between divine word and human reason, on a journey toward perfection and inner peace.

It is an invitation to rediscover science itself, illuminated by the light of Quranic wisdom.

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Disclaimer: On the Limits of Understanding and Interpretation

This book, with the analysis and reflection it offers on Islam and modernity, is a human attempt to explore reality and elucidate the meaning of sacred texts within the context of contemporary experience. Any understanding put forth here, whether related to the Holy Qur'an or to Islam in general, expresses the author's own sincere effort to approach the truth, limited by the intellectual tools and knowledge available.

Therefore, this work makes no claim to be the final or absolute understanding of the will of God Almighty or His Messenger (peace be upon him). Ultimate knowledge of the true meaning of His words and guidance rests with God and His Messenger alone.

The very nature of human thought is a process of inquiry, questioning, and reconsideration. Human knowledge will always be bound by the limits of time, place, and intellectual capacity. As such, any interpretation or analysis herein should be viewed as part of a fallible human striving for truth, not as a definitive statement that claims infallibility or is binding upon others.

As God Almighty says in the Qur'an:

﴿وَمَا أُوتِيتُمْ مِّنَ الْعِلْمِ إِلَّا قَلِيلًا﴾ (الإِسْرَاءُ: ٨٥)،

...‘and you have only been given a little knowledge.’ (Qur'an, Al-Isra: 85)

And as we repeat in our prayers:

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﴿وَقُلْ رَبِّ زِدْنِي عِلْمًا﴾ (طه: 114)

...‘Lord, increase me in knowledge.’ (Qur’an, Ta-Ha: 114)

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Dedication

In loving memory of my parents.

I pray this work honors your pure souls and stands as a testament to your legacy of goodness. May God accept it as a tribute to you and grant you the highest station in paradise.

﴿رَبَّنَا اغْفِرْ لِي وَلِوَالِدَيَّ وَلِلْمُؤْمِنِينَ يَوْمَ يَقُومُ الْحِسَابُ﴾ (إِبْرَاهِيم: ٤١)

“Our Lord, forgive me, my parents, and the believers on the Day of Reckoning.” (Qur’an, Ibrahim: 41)

﴿وَاخْفِضْ لَهُمَا جَنَاحَ الذُّلِّ مِنَ الرَّحْمَةِ وَقُلْ رَبِّ ارْحَمْهُمَا كَمَا رَبَّيَانِي صَغِيرًا﴾ (الْإِسْرَاء: ٢٤)

...”and treat them with humility and tenderness and say, ‘Lord, be merciful to them, just as they cared for me when I was little.’ (Qur’an, Al-Isra: 24)”

May they be forgiven and shown mercy for raising me when I was small. May their good deeds be met with goodness, and their failings with pardon. May God bless you both with His infinite mercy and welcome you into the highest paradise.

Your son, who will never forget your grace,

The Author

And to my wife

To my beloved, my life's companion for forty-two years, the mother of our seven children, my eternal love, my friend and my muse.

To you I dedicate this work. Before you became a university professor, you were our family's first teacher. You raised and homeschooled our seven children, and by God's grace, they excelled in their studies, their character, their faith, and their morals.

You then embarked on your own noble mission as a professor, opening doors for a new generation and guiding them onto the path of knowledge and wisdom.

You have been the most wonderful wife, the most wonderful mother, the most wonderful teacher, and the most wonderful love. May God always keep you as a treasure to me and to our children, in this life and the next.

And to my daughter

To my dear Sukeinah, an inspired storyteller and an eloquent author.

You have been a guiding light on this literary journey and an inspiration in the shaping of this novel. I dedicate this work to you with a father's heart, full of love and pride.

May you, Sukaynah, always be a force for good, a source of inspiration, and a standard-bearer for the truthful pen. May you continue to illuminate minds and move hearts, serving as a bridge between wisdom and revelation, and between creativity and faith.

And to my son

To my son, Mohssen,

You reviewed with care, commented with wisdom, and helped shape these pages into clarity.

At the very moment when this book sought its voice, you had immersed yourself in Ibn Ṭufayl's Ḥayy ibn Yaqẓān, perhaps the most influential philosophical novel in our tradition. Inspired by its spirit, you guided your remarks with the wisdom of that text, helping me polish this work with a vision that bridges past and present.

This novel, therefore, carries not only my voice but yours—echoing with the same harmony of reason, faith, and discovery that has guided seekers for centuries.

May the knowledge within it be a testament to our shared journey, and may it inspire generations as you have inspired me.

And to Ibn Ṭufayl

This is a special dedication from Ibn ‘Abbās al-‘Āmilī to Ibn Ṭufayl and his timeless creation, *Ḥayy ibn Yaqẓān*— a novel that bridged deserts and seas, faith and reason, revelation and discovery.

I have long studied its light and traced its ripples across centuries, seeing how it nourished the roots of intellectualism in our Islamic civilization, and how it crossed into Europe to ignite the minds of philosophers in the 17th and 18th centuries and beyond.

It also lit a fire in me— to write not only for Muslims, but for humanity at large, to offer a path where science, wisdom, and faith walk together toward truth.

This work is, in part, a humble echo of that great vision, and a prayer that, like *Ḥayy ibn Yaqẓān*, it may guide seekers of knowledge to harmony, tranquility, and light.

Author's Foreword

This book begins with gratitude to Allah and the Qur'an—a light for the mind, a guide for the heart, and a measure for a life built on justice and wisdom. It is dedicated to the Prophet Muhammad (PBUH), who carried its message, fulfilled his trust, and led humanity out of the darkness of ignorance into the light of knowledge.

This is not a novel written for entertainment or escape. It is meant to be a bridge—between revelation and reason, between knowledge and faith, between the treasures of our heritage and the challenges of our world today. My aim is to show how the Qur'an gave birth to whole sciences, and how ideas like the algorithm and algebra were born from a uniquely Qur'anic way of seeing the world.

The “Imam’s Circle,” the gathering of scholars in these pages, is more than a historical setting. It is a symbol. It represents the dialogue where revelation and reason, heart and mind, faith and inquiry, sit together in harmony. It is a reminder that the Qur'an is not only a book of worship, but also a blueprint for wisdom and discovery.

I believe the Qur'an is not a text of the past, but a journey that continues. What was revealed in the seventh century still speaks today, offering each generation the seeds of new knowledge and the secret of renewal.

The Merchant, the Imam, and the Secret of the Number Zero

Think of this novel as an invitation—to reflect, to question, and to build bridges between past and future. It is a call to every searching mind and restless heart: seek truth, live with justice, and find peace within.

I wrote these pages as if walking between earth and sky, drawing light from the Qur'an. In every chapter, I tried to plant a small seed of tranquility, hoping it may grow into wisdom and serenity within you. It is a humble effort. Any good in these pages is from God; any flaw is my own.

And all success is by His will.

The Author

Introduction: Beyond Popper and Kuhn

The Qur'anic Genesis of Discovery

In the twentieth century, two Western thinkers tried to explain how science grows. Karl Popper, in his book *The Logic of Scientific Discovery*, said that science moves forward by testing ideas until they break. A theory is never fully safe—it survives only until a single fact proves it false. Truth, in his view, is always fragile, always uncertain.

Thomas Kuhn, in *The Structure of Scientific Revolutions*, took a different path. He argued that science does not grow step by step, but through sudden revolutions. One worldview collapses, and another takes its place. Science, for him, is not slow growth but a cycle of conflict, crisis, and replacement.

These two visions shaped much of modern science. But both were born in a world cut off from revelation. Popper's way is built on constant negation—truth forever chased but never reached. Kuhn's way is built on disruption—stability always collapsing into chaos. Both are the children of a civilization that struggles to unite faith and reason.

The Qur'an opens another horizon. It does not set science against God but makes science a path toward Him. Knowledge here is not divided into “spirit” and “matter,” or “reason” and “faith.” It is one

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whole—mind and heart, heaven and earth, the seen (*al-shahāda*) and the unseen (*al-ghayb*), all in harmony. Science in this vision is not a source of doubt but of serenity. It does not strip the world of meaning—it reveals the divine meaning already within it.

In this view, arithmetic, algebra, algorithms, and logic are not cold formulas. They are living tools to uncover the balance (*mīzān*) that sustains the universe. Al-Khwārizmī, inspired by this worldview, turned numbers from confusion into clarity. He did not only “invent” algebra—he showed how the Qur’an teaches us to move from what we see to what is hidden. He did not only use zero—he showed how even emptiness has meaning as a sign of balance. He did not only write algorithms—he mirrored the Qur’an’s own rhythm of step-by-step guidance, from parable to proof, from doubt to peace.

This is why the Qur’anic way of science is unlike the Western models. Popper gave a logic of discovery, but chained to doubt. Kuhn gave a structure of revolutions, but chained to instability. The Qur’an gives a genesis: a birth of logic grounded in harmony and justice. It is a science lit with meaning, not stripped of it. It is not built on rebellion, but on revelation.

And here lies the great contrast. Modern science, as it grew more material and empirical, reached the edge of its own limits. At the vastness of the cosmos, at the paradoxes of quantum space, it faltered. It boxed itself into a view of the world that accepts only what its instruments can measure. It produced technology without wisdom, power without justice, progress without purpose.

The Qur’an offers the rescue. It teaches that science is not escape

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from the sacred but a path into it. It does not divide existence into fragments—it unites it into a single order of justice. Where materialism breeds dissonance, the Qur'an brings harmony. Where skepticism breeds endless revolution, the Qur'an brings stability, serenity, and trust.

So if Popper gave the logic of scientific discovery, and Kuhn gave the structure of scientific revolutions, this work seeks to uncover their missing counterpart: the Qur'anic genesis of scientific logic. A science alive with faith. A method that sees matter as a sign pointing to the eternal. A worldview whole and balanced, not fractured.

This is the true revolution—not of rupture, but of revelation. Not of instability, but of tranquility. Not one that strips, but one that restores. A revolution that carries the greatest prayer of the Qur'an:

﴿وَقُلْ رَبِّ زِدْنِي عِلْمًا﴾ (سورة طه: ١١٤)

“Say: My Lord, increase me in knowledge.” (Qur'an, Tā Hā 20:114)

What is Al-Bayān?

Al-Bayān is not just an idea in the clouds, nor a distant philosophy of science. It is a living logic of discovery, born from the Qur'an. In Al-Bayān, meaning itself shapes the method, and the method becomes a path of action.

In this story, *The Merchant, the Imam, and the Secret of the Number Zero*, we follow how the Qur'an's words about balance, measure, and testimony became more than guidance. They grew into arithmetic, algebra, and algorithms—practical tools that connected thought to action, theory to deed.

To speak of Al-Bayān is to speak of a way of doing science that begins with values before theories. If thinkers like Thomas Kuhn described how science changes in revolutions, and Karl Popper set rules for testing ideas, Al-Bayān shows something deeper: the grammar that makes discovery possible in the first place. The Qur'anic verse becomes a step in reasoning; the principle of justice becomes counting, checking, and computing—procedures that can be trusted and applied.

In today's world of algorithms and artificial intelligence, this message is urgent. Al-Bayān reminds us: clarity must come before calculation, meaning must guide models, and justice must stand before optimization. Without these, technology becomes a black box; with

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them, it becomes light, accountable, and humane.

This book is written for scholars, technologists, and every thoughtful reader who wants a science tied to conscience. Al-Bayān is not only a story but also a toolkit: a method of building that moves from revelation to reasoning, from page to code. It is an invitation to think, to act, and to judge in an age that craves both roots and renewal.

The Qur'an itself placed balance at the heart of creation:

﴿وَالسَّمَاءَ رَفَعَهَا وَوَضَعَ الْمِيزَانَ * أَلَّا تَطْغَوْا فِي الْمِيزَانِ * وَأَقِيمُوا
الْوَزْنَ بِالْقِسْطِ وَلَا تُخْسِرُوا الْمِيزَانَ﴾ (الرحمن: 7-9)

“And He raised the heaven and imposed the balance, so that you may not transgress in the balance. And establish weight in justice, and do not fall short in the balance.” (al-Raḥmān 55:7–9)

Its verses spoke of signs—written in the wide horizons and deep within the soul:

﴿سَنُرِيهِمْ آيَاتِنَا فِي الْآفَاقِ وَفِي أَنْفُسِهِمْ حَتَّى يَتَبَيَّنَ لَهُمْ أَنَّهُ الْحَقُّ﴾
(فصلت: 53)

“We will show them Our signs in the horizons and within themselves until it becomes clear to them that it is the Truth.” (Fuṣṣilat 41:53)

From these rhythms of command and inquiry, the sciences grew. Arithmetic, algebra, and logic were not cold abstractions but living gifts from revelation. Physicians found in it guidance for healing:

﴿وَنُنَزِّلُ مِنَ الْقُرْآنِ مَا هُوَ شِفَاءٌ وَرَحْمَةٌ لِّلْمُؤْمِنِينَ﴾ (الإسراء: 82)

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“And We send down in the Qur’an that which is healing and mercy for the believers.” (al-Isrā’ 17:82)

Astronomers lifted their eyes to the skies, answering the Qur’an’s call:

﴿إِنَّ فِي خَلْقِ السَّمَاوَاتِ وَالْأَرْضِ وَاخْتِلَافِ اللَّيْلِ وَالنَّهَارِ لَآيَاتٍ لِأُولِي الْأَلْبَابِ﴾ (آل عمران: 190)

“Indeed, in the creation of the heavens and the earth, and in the alternation of the night and the day, are signs for those of understanding.” (Āl ‘Imrān 3:190)

Natural scholars studied plants, animals, rivers, and seas. Chemists, engineers, and geographers explored the world with the conviction that knowledge is not human invention but divine trust. Each science—medicine, astronomy, optics, mechanics—was lit by the same flame: that to know creation is to draw nearer to its Creator.

In this novel, the story unfolds in the voices of scholars gathered in the Imam’s Circle. The Qur’an here is not only recited but unveiled as a book of light. In their company, revelation sparks innovation, hidden truths break open like seeds, and wisdom flowers into new methods of discovery. Their circle is a bridge between heaven and earth, divine speech and human reason. It is a place where curiosity becomes worship, proof becomes devotion, and the pursuit of truth itself becomes remembrance.

What lies ahead is not a manual of dry theories. It is an invitation to rediscover science itself—science rekindled by the Qur’an, reborn in verses that never stop guiding. For knowledge, in this vision, is not an

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end but a journey; not a possession but a prayer. It echoes the eternal supplication:

﴿وَقُلْ رَبِّ زِدْنِي عِلْمًا﴾ (طه: 114)

“And say, ‘My Lord, increase me in knowledge.’” (Ṭā Hā 20:114)

The Islamic Golden Age

The lamps of the House of Wisdom flickered against walls stacked high with parchment, their glow casting long shadows across the marble floor. In one corner, a weary merchant bent over his ledger, sweat dripping from his brow. He tried again to tally his goods—forty-three jars of oil, seventy-one bundles of spice, twelve bolts of silk—but the Roman numerals sprawled before him like knots in an endless rope: XLIII, LXXI, XII. Each time he pressed his stylus harder into the parchment, the numbers only mocked him. Multiply XLIII by XII, and clarity dissolved into chaos. At last he slammed his hand on the table.

“How can a man trade,” he cried, “if numbers refuse to obey?”

A quiet voice rose from the shadows.

“Perhaps it is not the numbers that defy you,” the voice said, “but the symbols you trust.”

The merchant looked up. A scholar stood there, cloaked in black, his eyes steady, his hands cradling a tablet. Upon it were marks that seemed at once strange and beautifully simple: 1, 2, 3 ... and a small hollow circle—0. He set the tablet down with deliberate care, almost as though he were placing a treasure upon an altar.

“Try with these,” he said.

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The merchant hesitated, his fingers trembling. The scholar traced steps in the sand beside the ledger, guiding him like a master leading a child through a maze. In moments, the tangle unraveled. The impossible became effortless. What had consumed hours melted into clarity. The merchant's lips parted in awe.

“This... this is not calculation,” he whispered. “This is light.”

The scholar inclined his head with a faint smile. His name was Muhammad ibn Musa al-Khwarizmi. In that instant, he was not only solving a merchant's problem—he was opening a new path for civilization.

From Baghdad, the light spread like dawn across the world. In the vaulted halls of the House of Wisdom, translators bent over scrolls gathered from Greece, India, and Persia. Shoulder to shoulder with mathematicians, physicians, and astronomers, they wove ancient words into Arabic and gave them new life. Jabir ibn Hayyan stood among glass vessels and fragrant vapors, experimenting with substances that would give birth to chemistry. Al-Biruni raised his instruments to the horizon and measured the curve of the earth with a precision that made later generations gasp. Al-Razi walked through hospitals he himself had designed, students trailing behind him as he taught not with books alone but with patients, transforming medicine into a living science. Baghdad pulsed with this rhythm, a heartbeat of curiosity where wisdom of the ancients became seed for discoveries the world had never seen.

Far to the west, Cordoba glittered like a jewel of Al-Andalus. Its streets glowed with lamplight; its libraries held hundreds of thousands of volumes. In its hospitals, care was offered that Europe could scarcely

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imagine. Al-Zahrawi, the father of surgery, filled his manuals with drawings of scalpels and forceps and needles, tools crafted with precision and handed down to generations. Ibn Rushd, the great thinker, harmonized reason with revelation, and his books crossed into Latin Europe, stirring the minds of future philosophers. In Toledo, the hum of translators filled the air, their hands carrying the treasures of Arabic thought into Latin, preparing a sleeping continent to awaken.

In Cairo, libraries overflowed with manuscripts and observatories rose high into the sky. There, Ibn al-Haytham darkened a chamber, pierced a hole through its wall, and watched as light carved an image on the opposite side. With this humble experiment, he proved that sight enters the eye instead of leaving it, and his *Book of Optics* became a cornerstone of science centuries ahead of its time. Physicians pushed the frontiers of anatomy and healing. Astronomers charted the heavens so carefully that their tables later guided sailors across oceans they had never imagined.

Damascus hummed with its own life. Its artisans perfected steel and glass that dazzled distant lands. In its bazaars, ideas traded as swiftly as silks and spices. The historian al-Mas'udi recorded the journeys of peoples and stars, blending stories with science. Damascus was not merely a seat of politics but a crucible of craft and thought, a place where knowledge was as alive as its markets.

Still farther east, Samarkand shone along the Silk Road. Ulugh Beg, a ruler with the heart of an astronomer, built a vast observatory where he charted the stars with such precision that his tables surpassed even Ptolemy. In Nishapur, poets, scientists, and theologians gathered, proving that revelation and reason were not rivals but companions, rivers

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flowing from the same source. And in Fez, at the far edge of the Maghreb, Fatima al-Fihri founded the Qarawiyyin University. Its doors opened to jurists, physicians, and astronomers alike, making knowledge a shared inheritance that spread from North Africa deep into the lands beyond the desert.

For six centuries, from the 8th to the 13th, this civilization shone as the world's intellectual superpower. Mathematics became a universal language; medicine, a disciplined science; astronomy, a map of the heavens; philosophy, a dialogue between faith and reason. Trade routes carried not only silks and spices but manuscripts and instruments, and the Arabic tongue tied scholars from Spain to Baghdad into one great conversation. Rulers competed not in palaces alone but in libraries and observatories. Knowledge was not a luxury—it was the duty of a people who believed that to seek understanding was to walk closer to God.

And from this light, the world awoke. Through Toledo and Sicily, Arabic texts flowed into Europe. Al-Khwarizmi's zero and algorithms, Ibn al-Haytham's optics, Ibn Sina's medicine, Ibn Khaldun's sociology—these became the foundations upon which the Renaissance and Scientific Revolution would stand. Without them, the world as we know it—its science, its technology, its very way of thinking—could not exist.

The Islamic Golden Age was not merely a chapter in a book of history. It was the moment when curiosity itself was sanctified, when the Qur'an's call to reflect on creation became the pulse of a civilization. Its light has not faded into memory. It burns still—in every calculation, in every experiment, in every cure, in every algorithm. And it waits for those who will once again carry its torch.

Who Was Al-Khwarizmi?

The night air of Baghdad glowed with the lamps of the House of Wisdom. Voices filled the great hall—translators arguing over Greek words, astronomers sketching the stars, physicians whispering cures. In the middle of this sea of brilliance stood a man with calm bearing and piercing eyes: **Muhammad ibn Musa al-Khwarizmi**.

He bent down and drew in the sand. First a **1**, then a **2**, then a **3**. At last, with deliberate care, he traced a hollow circle—**0**.

“This,” he said softly, his words slicing through the noise, “is not nothing. This is the key to everything.”

Gasps rose. A circle for emptiness? A mark for the void? But al-Khwarizmi showed them how this single symbol could tame chaos. Merchants who once drowned in Roman numerals could now tally their caravans in minutes. Astronomers could map the heavens with new accuracy. Students saw the impossible collapse into simplicity, as though light itself had taken form in the dust.

Zero had been glimpsed in India, fragile and strange. But it was **al-Khwarizmi** who gave it power—placing it at the heart of a number system that every human being now uses. He wrote the guide that taught the world how to add, subtract, multiply, and divide with ease. What had once been a torture of symbols became the clear language of science and

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trade. Even today, every child writing $7 + 5$ is sitting unknowingly in his classroom.

But arithmetic was only the beginning.

When his works were translated into Latin, they began with the phrase *Dixit Algoritmi*—"Al-Khwarizmi says." From that moment on, his very name became a word: **algorithm**. Now, every recipe, every proof, every equation, every computer program, every AI system that pulses across the globe moves in the rhythm of his thought. His name is built into the DNA of modern reasoning itself.

And then—the leap of genius. He called it **al-jabr** and **al-muqābala**—restoring and balancing. With these two simple acts, he created **algebra**. To him, equations were like scales: one side heavy, the other light. He showed how to restore what was missing (*al-jabr*) and how to balance what was opposed (*al-muqābala*). Out of this, he gave the world a new language for the unseen. The unknown—*al-shay'*, the "thing"—could now be found, named, solved.

Arithmetic. Algorithms. Algebra. Three streams. One source.
One man: **al-Khwarizmi**.

From Baghdad his influence spread like fire. In Toledo, by candlelight, European scholars whispered his name—Algoritmi—as they copied his works into Latin. Slowly, his numerals replaced the stumbling Roman symbols. His algebra entered universities. His algorithms guided thought. And from his seeds grew the Renaissance, the Scientific Revolution, and the modern world itself.

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Think of it. Without al-Khwarizmi, there is no arithmetic as we know it. No algorithms, no algebra. No Renaissance art measured in proportion, no navigators guided across oceans, no physics written in equations, no computers or smartphones or artificial intelligence.

Even now, he is with us. A child solving 12×4 is his student. A high schooler wrestling with $x + 5 = 12$ walks in his footsteps. A programmer coding artificial intelligence is moving in the pulse of his algorithms. Every sum, every equation, every program, every calculation—his mind breathes inside them.

No emperor has ever ruled so widely. No conqueror has ever shaped so many lives. Al-Khwarizmi's dominion is not over land, but over thought itself.

And if greatness is measured by impact on humanity, then al-Khwarizmi is beyond comparison. He is not merely a scientist among others—**he is the most important scientist in history.** The hidden teacher of all who count, all who calculate, all who program. The silent architect of modern science and technology. The man who turned numbers into light.

In the Market of Baghdad

Baghdad in the early 9th century was what London would only become in the early 19th—a thousand years ahead of its time. While much of Europe stumbled in the shadows of the dark ages, Baghdad blazed with brilliance. Its streets bustled with trade and invention, its canals watered fields of rich agriculture, its libraries overflowed with knowledge, and its workshops rang with the sound of tools shaping the future. Here, science, technology, education, and culture did not trickle quietly—they thundered, alive in every corner of the city.

The market of Baghdad hummed with life. Merchants shouted prices above the clamor of camels and carts, the air thick with the scent of cinnamon, ink, and hot bread. Among the stalls, a boy tugged at his father's sleeve, frowning at a ledger crowded with Roman numerals. The marks sprawled like tangled ropes, stubborn and confusing, defying the man's weary attempt to balance his accounts. He sighed and muttered, "If only there were a simpler way."

Not far away, in the courtyard of the House of Wisdom, oil lamps flickered against marble walls. Scrolls lay unfurled, and tablets covered with calculations lined the floor. A circle of students leaned forward as a scholar in a dark robe traced a line in the sand. His voice was quiet but steady, carrying a rhythm of certainty, as if he were not inventing but uncovering truths that had always waited for the right hand

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to reveal them.

He drew a circle, then a smaller one within it.

“Here is the known,” he said, “and here—the unknown. Between them lies a path.”

He swept the sand clean.

“The task of the mind is not merely to count what is seen, but to balance what is hidden. Numbers are not marks on parchment—they are the very grammar of the cosmos.”

The students held their breath. To them, it felt less like mathematics and more like revelation. Arithmetic came alive, equations became doors, proofs turned into lanterns against the night.

At that moment, no one thought of his name. He was simply the man who made the incomprehensible glow with meaning, who turned chaos into pattern. But history would remember him differently. Centuries later, his very name would become the language of method, whispered every time a problem was solved step by step, every time a code ran through the veins of a machine.

He was **al-Khwarizmi**—and his aura, his logic, his art of balance would one day become the unseen architecture of the modern world.

Part One: The Revolution of Calculation

The council chamber buzzed like a beehive of thought. Students sat in a circle, their tablets resting on their knees, the smell of parchment and ink heavy in the air. The Imam stood before them, his robe still as a shadow, his eyes alive with fire. When he spoke, his words did not feel like teaching—they felt like the opening of a hidden door.

“Calculation,” he began, his voice steady, “is not just a tool for merchants or judges. It is a divine language planted in your souls by the Qur’an. Through it, we learn to account for every deed, to weigh every choice, to make justice stand as firmly in our lives as it does in the stars above.”

Then he lifted his voice, reciting a verse that seemed to echo against the marble walls:

﴿وَكُلُّ شَيْءٍ أَحْصَيْنَاهُ كِتَابًا﴾ (سورة النبا: ٢٩)

“And all things We have enumerated in writing.”

(Qur’an, An-Naba: 29)

The students felt the words pierce them like light. In that moment, arithmetic was no longer boring rows of numbers. It was a revelation. It was the hidden law that tied together the heavens and the earth.

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Ya'qub the logician raised his hand, his voice thoughtful.

“Master, can we say then that calculation in the Qur'an is like a scale? That it reveals balance in all things, just as a weight reveals its measure on the pan?”

The Imam's face softened into a smile.

“Yes, Ya'qub. The Qur'an never speaks of calculation without also speaking of justice. Every equation you write is a mirror of God's balance. Every problem you solve is a step closer to His order.”

Isma'il the merchant leaned forward, his brow furrowed, his voice uncertain.

“So you mean, master... the tables and figures I scribble in my shop, the accounts I tally for oil and spices—these too are part of God's justice?”

The Imam's eyes glowed like the first light of dawn.

“More than that, Isma'il,” he said. “They are not only tables and figures. They are the keys to understanding the cosmos itself. To calculate is to join heaven and earth. It is to walk a path toward inner peace. And it is to carry justice in your hands, for justice is the balance by which God governs both numbers and lives.”

A hush fell over the circle. The students looked at their tablets with new eyes, as though the numbers had come alive, no longer dry marks but sparks of divine order. For the first time, they understood: **to calculate was to worship, to balance was to live in justice, and to solve was to touch the very rhythm of the universe.**

One: Before Systematic Calculation

A World Drowning in Chaos

The afternoon sun hammered Baghdad, turning the stones of the Stationers' Market into a blazing griddle. The air was thick with scents—dry ink, oiled leather, cinnamon, roasted nuts, and the sweet tang of fresh bread. Shouts rang out like arrows loosed in all directions. Merchants cried their prices above the roar of camels and carts, while quills scratched furiously on tablets, tallying the endless whirl of trade.

In the shade of a cramped stall, Isma'īl the young merchant sat sweating. Not just from the heat—but from the weight of a bargain that could make or break his fortune.

Across from him sat a tall Samarkandi trader, his eyes sharp as daggers, his beard thick and neatly combed. Beside the Samarkandi perched an old Greek accountant, his hair white as snow, fingers flicking his abacus beads with the speed of a storm. The beads clicked—*tak, tak, tak*—like the beating of a war drum.

Isma'īl stared down at the contract spread before him. It was a tangle.

Forty-three cubits of Chinese silk, each priced at twelve and two-thirds dirhams. For every ten cubits, half a dirham was to be

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discounted as a token of goodwill. And on top of that, the caravan master demanded one-seventh of the net profit as his due.

It was an equation as twisted as a knot of ropes. One wrong pull, and the deal would strangle him.

He gritted his teeth, dipped his quill, and tried to calculate the total in the traditional way—writing the numbers out in words, long, winding, tangled.

“Multiply forty-three by twelve and two-thirds...” His stylus scratched furiously, but the words grew longer and longer, like a road that stretched into the desert without end. His eyes swam. The more he wrote, the more the numbers seemed to blur into serpents, twisting around each other, choking the sense out of the page. After only a few lines, his concentration snapped. His hands trembled.

With a curse, he wiped the tablet clean, nearly snapping the quill in his grip.

Desperate, he tried the second method—**ḥisāb al-jummal**, the old system that turned letters into numbers. Alif = 1, Bā’ = 2, Jīm = 3, Dāl = 4... Yā’ = 10, Kāf = 20, Lām = 30, Mīm = 40... He converted his forty-three into letters: M (40) plus J (3). His price became Y (10) plus B (2).

Now, he had to multiply *MJ* by *YB*.

But this method, though poetic for riddles and dating lines of poetry, was a nightmare for actual trade. He had to keep switching in his head: letters to numbers, units to tens, tens to hundreds, multiplying,

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then carrying, then adding... It was like trying to build a house with matchsticks that kept collapsing in his hands. Sweat rolled into his eyes. He muttered through clenched teeth:

“This isn’t calculation... this is torture.”

The Greek accountant chuckled, his abacus beads clattering faster. He slapped down his tablet, covered in Roman numerals: **XLIII × XII**.

“I reached the answer long ago,” he sneered.

Isma‘il looked at the tablet. His heart sank. The Roman marks spread across the page like a forest of sticks: I’s, V’s, X’s, L’s. Each symbol changed value depending on where it stood: I before V meant four (IV), after it meant six (VI). Add, subtract, shuffle, repeat. To divide or multiply with them was like wrestling with a pack of snakes.

The Greek accountant folded his arms, smug. “This,” he said with pride, “is the system that ruled the world for centuries.”

Isma‘il slammed his palm on the table.

“Rubbish! This system is fit only to waste a man’s life. I need clarity, not confusion. Justice, not mockery.”

At that moment, Ya‘qub the philosopher stepped into the stall, robes flowing, face lifted in superiority. He waved his hand with disdain. “Why exhaust yourselves with these petty sums? Great thinkers—Aristotle, Euclid—considered arithmetic the low science of the commoners. True wisdom lies in the purity of geometry, in abstract

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proof that soars above matter, untainted by the dirt of the market.”

Isma‘il’s face reddened with fury. He leapt to his feet, his voice trembling with rage.

“Tell that to the caravan master who waits for his share so he can feed his children! Tell him your lofty geometry will fill his pots! We merchants need a method that is quick, clear, and just—not some sterile philosophy floating in the clouds, leaving us to drown here on the ground!”

His cry split the air, raw and desperate.

At the stall’s doorway stood a quiet figure, listening. Muhammad ibn Musa al-Khwarizmi. His eyes, dark and contemplative, drank in the scene. He saw Isma‘il’s despair, the Greek’s arrogance, Ya‘qub’s aloofness. And his heart tightened. For he knew all three were partly wrong.

Science could not be cut off from the daily needs of people. But neither could daily needs survive without logic, beauty, and higher order. True knowledge had to embrace both—the practical and the philosophical, the earth and the heavens.

He left the stall and walked into the burning streets, but the louder noise was not of the market—it was the storm raging in his mind.

He whispered to himself, recalling the words of God:

﴿...وَاللَّهُ سَرِيعُ الْحِسَابِ﴾ (البقرة: 202)

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“...and God is swift in reckoning.” (al-Baqarah 2:202)

“Swift?” he murmured. “How can God’s reckoning be swift, while ours drowns us in chaos? The flaw cannot be in reckoning itself. The flaw must be in our methods.”

He walked faster, the revelation burning in his chest. Another verse flashed like lightning across his memory:

﴿الشَّمْسُ وَالْقَمَرُ بِحُسْبَانٍ﴾ (الرحمن: 5)

“The sun and the moon move by precise calculation.” (al-Raḥmān 55:5)

And another:

﴿...وَأَحْصَىٰ كُلَّ شَيْءٍ عَدَدًا﴾ (الجن: 28)

“...and He has enumerated all things in number.” (al-Jinn 72:28)

Numbers... order... balance... swiftness. The Qur’an was not speaking of confusion, but of a **system**—a calculation swift as sunlight, precise as the orbits of the heavens, just as the balance of a scale.

His steps grew firmer. The burden on his shoulders had transformed into honor. God had planted a mission in his heart: *to uncover the system of calculation hidden in revelation, and to give it to the world.*

And so al-Khwarizmi walked toward the Grand Mosque, toward the circle of his teacher, the Imam—the one man who could help him unlock this secret. His stride was no longer weary but eager, his heart

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burning like a lover going to meet the beloved. For he knew: the world was drowning in chaos, and he had been called to bring it balance.

Lesson 1: A Light from the East

Escaping the Prison of Words

The Imam's circle had gathered once more in the quiet corner of the Grand Mosque. Sunlight streamed through the delicate latticework, breaking into golden patterns that danced across the colorful mosaic floor. The air was rich with the faint fragrance of Arabian incense, warm and calming, carrying with it the sense of something sacred. From a nearby fountain came the sound of trickling water, steady and soft, as though the very building itself was breathing in peace.

At the center sat Muhammad ibn Musa al-Khwarizmi. His posture was upright, noble, but his tired eyes gave him away. They were red from a sleepless night, heavy with the burden of numbers that refused to be tamed. In his mind lingered the memory of the bustling market: thick ledgers scribbled with confusing fractions, merchants sweating over endless calculations, and symbols that felt more like chains than tools. Even here, in the stillness of the mosque, the chaos of the market followed him like a shadow that would not release its grip.

At last, his voice broke the silence. It was low and heavy, as if each word carried the weight of his frustration.

"Master," he said, "today I saw with my own eyes how the people are drowning in confusion. Their calculations are like men trapped in a

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storm, unable to find land. Some try to write their numbers in long, twisting words that take forever to record. Others use obscure letters, as if numbers were secret codes only a few could understand. Both ways are painfully slow, like trying to walk through quicksand while the world races ahead. Where is the ease, master? Where is the ease the Qur'an promised us—ease that should bring justice, clarity, and speed into our lives?"

Then the Imam bent down, his wrinkled fingers steady as they picked up a small pebble from the floor. He moved with the patience of someone about to share a secret hidden since the beginning of time. With one careful stroke, he drew the simple outline of an apple in the dust. Then, beside it, he wrote the word "*apple*" in flowing Arabic script, his letters carrying the elegance of a man who had spent his life in the company of knowledge.

He looked up at his students, his voice gentle but carrying weight, "Tell me, my sons—what is the difference between these two?"

Ya'qub the logician adjusted the book resting on his knees, flipping a page as if to steady his thoughts. "The first," he said thoughtfully, "is an image—a drawing seen by the eyes. The second is a word—a symbol read by the mind."

The Imam's face lit up with a smile, warm and approving. "You are right, Ya'qub. But look closer. The word is long, like a tree with tangled branches, while the drawing is as simple as fruit plucked from the branch itself. Now imagine, my sons: if we had to describe *three hundred and seventy-five apples* in words, how much time, ink, and patience would it take? The page would overflow, the mind would stumble, and chaos

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would reign. But if we can capture that great number with only a few short signs, then it is like the sun rising in darkness—a single ray of light chasing away endless confusion.”

And then the Imam leaned forward, the pebble still in his hand, and began sketching more signs in the dust. His voice grew brighter, as though he were sharing a marvel few had ever heard. “I have learned,” he said, “that the people of India have a method that dazzles the mind. They do not spend their lives writing numbers in long words, nor do they twist them into complicated letters. Instead, they use just nine tiny marks—1, 2, 3, 4, 5, 6, 7, 8, 9. With these alone, they can describe any number, no matter how enormous. They take what is tangled and long, and they make it short and clear—so short, in fact, that the hand writes it as swiftly as lightning streaking across the night sky.”

At once, Isma‘īl the merchant could not hold back. He sprang forward, nearly knocking over his ledger, his eyes glowing with relief. “Master, that is brilliant!” he cried. “Do you not see? This would save us half our time in the market! We would be free of endless chaos and mistakes!”

But Ya‘qūb, ever cautious, narrowed his eyes and raised an eyebrow, his voice sharp as a knife slicing through cloth. “But master, these symbols belong to another people. They are not of our tongue, nor of the Arabic of the Qur’an. Should we abandon the language of clarity itself to borrow from strangers? What if their marks carry secrets that we cannot see?”

The Imam leaned forward, his wrinkled hand closing gently around a small pebble. He rolled it between his fingers as though it

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carried the weight of a secret, then looked straight into Ya‘qūb. His eyes gleamed, calm yet piercing, like a lantern glowing in the dark.

“Ya‘qūb,” he said softly, “do you know what wisdom is like? It is like a lost treasure. Wherever a believer finds it—whether in a desert, a distant land, or a foreign tongue—he has the greatest right to take it. To claim it. To polish it until it shines.”

He paused, letting his words sink in. The circle of students leaned closer, as if pulled by an invisible string.

The Imam’s voice grew steadier, almost like a chant. “Do you not remember the saying of our Messenger, peace and blessings be upon him: *‘Seek knowledge, even if it is in China’*? He was not speaking about our faith—for God perfected that here, in the land of the Arabs. He was speaking about worldly knowledge, the tools that God scattered among His servants across the earth. These tools are gifts, my sons, and they are placed in different lands so that Muslims may gather them, like a traveler gathering jewels from every stop along his journey, to build a civilization worthy of the trust God has given us.”

Ya‘qūb frowned, his hand still resting on the old book in his lap. “But master,” he said, “what if these tools are mixed with the beliefs of other people? What if, in learning from them, we lose what makes us who we are?”

The Imam’s smile was warm, patient, and reassuring. “Ah, Ya‘qūb, you speak from fear, but faith teaches us confidence. The Qur’an is the lamp that guards us from going astray. We do not take their

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worship, nor their false gods. We take their tools—their paper, their numbers, their medicines—and we place them in the service of truth.”

He drew a slow circle in the dust with the pebble, then looked upward as if listening to something greater. His voice took on the solemn rhythm of recitation:

يَا أَيُّهَا النَّاسُ إِنَّا خَلَقْنَاكُمْ مِنْ ذَكَرٍ وَأُنْثَىٰ وَجَعَلْنَاكُمْ شُعُوبًا وَقَبَائِلَ لِتَعَارَفُوا إِنَّ أَكْرَمَكُمْ عِنْدَ اللَّهِ أَتْقَاكُمْ إِنَّ اللَّهَ عَلِيمٌ خَبِيرٌ (سورة الحجرات: ١٣)

O people, We created you from a male and a female, and made you into peoples and tribes that you might know one another. The noblest of you in God's sight is the most devout of you. God is all knowing and all aware. (Qur'an, Al-Hujurāt: 13)

He closed the Qur'an with reverent hands. “This ‘knowing one another,’ my sons, is not just about exchanging greetings or asking about each other's health. No—it is far deeper. It is about learning from one another, exchanging wisdom, sharing what is useful, building a world together.”

Isma‘il, unable to hold back, raised his hand. “Master, give us an example!”

The Imam's eyes twinkled. “Gladly, Isma‘il. The Chinese taught us the craft of paper. Without it, would we have been able to copy and spread the Qur'an so widely? The Persians gave us the art of administration, so that our state may be ordered and just. And the Indians...” He held up the pebble and tapped it gently against the floor.

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“...they give us numbers. Simple, clear numbers that can cut through confusion like a sword through fog.”

The circle fell silent. The boys looked at one another, imagining how a few strange symbols could change their lives.

Then the Imam’s tone grew grave, like a warning. “But know this: knowledge by itself can become dangerous. Knowledge without piety is like a sword in the hand of a thief—it can harm more than it heals. But knowledge with piety—ah!—it becomes a lamp, lighting the road, guiding the traveler, protecting the people. That is why we, the people of the Qur’an, must take every useful tool from the world and bind it with the rope of taqwā, the consciousness of God. Only then does it become light.”

Ya‘qūb lowered his eyes, ashamed at his doubt. Isma‘īl grinned like a boy who had discovered treasure. And al-Khwarizmi, sitting quietly in the circle, felt as if the key to a new world had just been pressed into his hand.

The Imam’s voice softened, steady and calm, like the closing of a treasure chest after a secret had been revealed. He looked around the circle, his gaze resting on each student before settling on Ya‘qūb. “We are not adopting their faith, my son. Do not confuse the vessel with the water it carries. What we take is only a tool—a tool that brings clarity, a tool that brings ease. And does not our own Book say?”

His voice rose into the melody of revelation:

﴿يُرِيدُ اللَّهُ بِكُمُ الْيُسْرَ وَلَا يُرِيدُ بِكُمُ الْعُسْرَ﴾ (سورة البقرة: ١٨٥)

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God wants ease for you, not hardship.

(Qur'an, Al-Baqarah: 185)

The words hung in the air like golden lanterns, their light filling the circle.

Isma'il's eyes shone, his hand pressed to his chest. "Yes, master! Ease, not hardship. This is the very spirit of our faith."

The Imam nodded, then slowly turned toward al-Khwarizmi, who sat quietly at the center, as if the entire room had been waiting for him. His old eyes softened, carrying the weight of hope, like a father entrusting his son with a sacred inheritance.

"Your mission, Muhammad," he said, his voice carrying both gentleness and command, "is to take these small symbols—mere marks upon a page—and polish them until they shine like jewels. Build from them not a toy for the curious, but a great system that serves the people of Islam. A system that eases their burdens in the marketplace, clarifies their dealings in commerce, guides their children in learning, and protects them from confusion and injustice. Let your work stand as a witness to the greatness of our faith—a faith that unites knowledge with belief, and reason with revelation."

The students held their breath. It was as if they had just seen a torch passed into al-Khwarizmi's hands.

For a moment, the young mathematician felt the weight of the entire nation upon his shoulders. Yet he also felt the lightness of a man

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given purpose, his heart swelling with certainty that this mission was not his alone, but a chapter in the story of a civilization destined to shine.

Lesson 2: The Riddle of the Empty Column and the Revelation of Zero

A week passed like the blink of an eye, and once again the Imam's circle gathered in the quiet corner of the mosque. The afternoon sun streamed through the carved latticework, casting golden shapes upon the floor. The patterns danced across the tiles like secret signs waiting to be read, as though the very light itself was a teacher.

That day, Abu 'Abdullāh al-Khwarizmi entered not as the weary student they had seen before, but as a man reborn. His steps were steady, his face radiant with the brilliance of discovery, like the sky at dawn after a long and troubled night. In his hands he carried a tablet covered with strange numerals, their shapes glimmering faintly in the slanted light, as if they were not mere marks of ink but hidden keys to a locked treasure. He held it with both care and pride, the way a traveler carries a jewel found after a long and dangerous journey.

He set the tablet before the circle, his voice trembling with excitement.

“Master,” he said, “these Indian symbols are wondrous beyond words! See—where I once wrote ‘two hundred and thirty-four’ in long, exhausting words that dragged across the page like a caravan upon the Silk Road, I now simply write three small symbols: 234. It is as swift and

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elegant as a falcon cutting through the sky, as simple and clear as the wind that whispers of rain.”

Isma‘il the merchant leaned forward, his face breaking into a grin wide as a crescent moon. “This is exactly what we needed, Abu ‘Abdullāh! At last we can count our dirhams without drowning in confusion. No more sleepless nights over ledgers twisted like knots. This will make trade as smooth as polished silk!”

But as Abu ‘Abdullāh basked in their admiration, a shadow crossed his face. His brow furrowed, and his voice dropped to a note of unease.

“At first, I thought so too. But then I stumbled against a mountain, and that mountain blocks the path entirely.”

The students stirred, exchanging worried glances. The Imam, calm as ever, raised his hand, quieting the whispers. His eyes fixed upon al-Khwarizmi with a gaze that carried both challenge and mercy.

“And what is this mountain, my son? Tell us, so that together we may find a path through it.”

Al-Khwarizmi bent over the tablet. With careful strokes of his quill, he wrote in clear Arabic script: “three hundred and seven.” His hand lingered over the words, then he lifted his gaze, filled with confusion.

“Master, how do I write this number with the new symbols? I can put a ‘3’ in the hundreds place, and a ‘7’ in the units place. But what

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do I place in the tens place? There is nothing there—nothing but emptiness, like a dry well that yields no water.”

He pressed his finger upon the space between the two digits, as if pointing to a wound that refused to heal.

“If I write only 37, it becomes thirty-seven. But that is not the truth. If I try to leave a gap, 3 7, the reader may think they are two separate numbers, like two lonely islands adrift in the sea. The whole system collapses whenever there is ‘nothing’ in the middle. This emptiness devours meaning. It reduces order back into chaos!”

The words settled upon the circle like a heavy silence. For a moment no one spoke. The students stared at the empty column as though it were a riddle carved into the very stone of existence.

Ya‘qūb stroked his beard with the solemnity of a philosopher, his eyes narrowing as if peering into the bottom of a deep well. “This,” he said slowly, “is not a trivial problem of merchants’ ledgers. It is a contradiction that shakes the very foundation of reason. How can a system of symbols speak of something that does not exist? To write ‘nothing’ is like trying to grasp the wind with your hands.”

Isma‘īl threw up his arms in despair, his voice cracking with frustration. “Then it’s useless after all! What good are these Indian marks if they collapse the moment they face an empty column? We might as well return to the old wooden abacus, at least its emptiness can be seen! Better an honest gap than this treacherous void that mocks us!” His eyes glistened, as though tears of lost hope were gathering.

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A heavy silence descended upon the circle. The incense smoke coiled in the air like vanishing dreams. Abu ‘Abdullāh felt his heart sink, the joy of discovery slipping through his fingers like water poured upon sand. The tablet before him, which had moments ago shone like a treasure, now seemed only a slab of confusion.

Then the Imam moved, his presence breaking the silence like dawn breaking the night. His voice rose, calm yet deep, carrying a resonance as though it had come from the depths of the earth itself. His eyes shone with a light that stilled their restless hearts.

“The problem, my sons,” he said, “is not in the system. It is in your understanding of this ‘nothingness’ that the mind fears, yet secretly needs. You see the empty column as a void, a shadow to be fled from. But the Qur’an teaches us that this nothingness is not absence. It is a hidden stage of being, a doorway to existence itself.”

He turned the Qur’an before him, and with hands trembling in reverence he recited:

﴿هَلْ أَتَى عَلَى الْإِنْسَانِ حِينٌ مِّنَ الدَّهْرِ لَمْ يَكُنْ شَيْئًا مَّذْكُورًا﴾ (سورة الإنسان: ١)

Has there not been for man a period of time when he was a thing unremembered?

(Qur’an, Al-Insān: 1)

And then:

﴿أَمْ خُلِقُوا مِنْ غَيْرِ شَيْءٍ أَمْ هُمُ الْخَالِقُونَ﴾ (سورة الطور: ٣٥)

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Were they created out of nothing? Or were they the creators?

(Qur'an, At-Tur: 35)

“Before our existence, we were ‘nothing,’” the Imam said, his gaze sweeping over them, “and yet from that state, God brought us forth into life. That ‘nothing’ is not a weakness, but a measure by which the beauty of existence becomes known. Without it, there is no beginning, no contrast, no awakening.”

These words struck Abu ‘Abdullāh’s mind like a flash of lightning across a storm-dark sky. In an instant he saw: the void was not a terrifying abyss but a vital symbol. It was not chaos, but the foundation upon which order rested. “Nothingness” had its place, its dignity, its purpose. All of creation had once lain in it, waiting to be called into light—just as a seed sleeps in the dry earth until the rain awakens it into bloom.

Then the Imam continued, raising his voice slightly as if uncovering a buried treasure, “And so it is with numbers, my sons. An Indian merchant once told me that their scholars use a mark shaped like a small circle—0—to guard the empty place. They call it *shunya*, meaning the void, or nothingness. And here, in our own Arabic tongue, we say *ṣifr*. We say, ‘The house is ṣifr,’ meaning empty. We say, ‘The vessel is ṣifr,’ meaning hollow. So why not take this ṣifr, this symbol of emptiness, and give it its rightful place as the faithful guardian of our columns?”

He took a quill and wrote on the tablet: **3 7**. His voice dropped into a grave whisper. “Here lies your impasse, my sons: the gap that deceives, the void that corrupts. But now—watch.” His hand moved with calm authority as he wrote: **307**.

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“Look now!” the Imam declared, his eyes glowing with the light of discovery. “This *ṣifr*—this zero—has no value by itself. Alone, it is nothing. Yet see the power it grants! It does not boast, it does not add to itself, but it raises the three into the hundreds and protects the seven in its rightful place. It is the silent guardian, the unseen servant, the nothing that gives order to everything. By filling the void, it completes the system, just as God created the universe itself from what was once nothing.”

The words fell upon the circle like thunder followed by rain. Al-Khwārizmī leapt to his feet, his voice breaking into a cry that shook the walls: “*Allāhu akbar!* It is the hidden hero of numbers, the watchman of the columns, the mystery that transforms emptiness into strength!”

Yā‘qūb sat in awe, his hand stroking his chin. His voice was hushed, reverent. “This is no mere trick of calculation. It is a philosophy that surpasses the Greeks. How can nothingness be the root of both order and power? It is a paradox... yet it shines with divine wisdom.”

And Ismā‘īl—ever the merchant—burst into laughter, his joy echoing in the mosque. He clapped his hands together and said, “Now the system is complete! No more sleepless nights, no more chaos in my ledgers! This *ṣifr* has turned into my sword, and with it I will cut through every calculation with the swiftness of the wind!”

In that moment, the circle felt as though heaven itself had opened. With the birth of *ṣifr*, the system was no longer a tree without roots. A new language of numbers had been born. With just ten symbols—0, 1, 2, 3, 4, 5, 6, 7, 8, 9—humanity could now name every number, great or small, with ease as light as air. It was a language of

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simplicity that brought relief to the people, of precision that mirrored divine justice, and of beauty beyond words, like the Qur'an itself which God sent down as an elucidation for all the worlds.

Two: The Dawn of Systematic Calculation (Algorithms)

The Invention of Arithmetic Operations

Now that the ten magical tools were complete—from zero to nine—it was time to bring them to life. Symbols alone are like soldiers standing still on a battlefield; they need an engine to set them in motion. This engine would be the arithmetic operations—the algorithms—that would turn the silent marks into a force powerful enough to change the world. What began here would not remain small. It was a seed about to sprout into a tree that would shade entire civilizations.

A week passed like a storm, and once again the Imam's circle gathered in their quiet corner of the mosque. Yet this day was different. The atmosphere trembled with expectation, like a pot about to boil over. The late afternoon sun pierced the latticework screens, casting sharp golden lines across the tablets, where strange numerals glittered as if they were hidden jewels. The air was thick with the mingled scent of fresh ink and damp parchment, and the students leaned forward in a tight ring, their eyes gleaming with the hunger of explorers standing at the mouth of a cave rumored to contain buried treasure.

It was Ismā'īl the merchant who broke the silence first. He entered with hurried steps, his clothes rumpled, his face weary from

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sleepless nights. His voice carried both frustration and urgency.

“Abū ‘Abdullāh,” he cried, “we now have the full set of tools—ten symbols that can describe any number in the world, vast or small. But tell me, how will we use them? How do we add, subtract, multiply, or divide without falling back into the chaos that plagued us before? My ledgers are still like tangled vines, even with these new numbers!”

Ya‘qūb, ever the logician, lifted his head from his book. His tone was cool and sharp, like the edge of a freshly honed blade.

“You rush too quickly, Ismā‘īl,” he said. “The question is not only how to use these symbols for trade. What matters most is that the method itself must be logical—firm, consistent, built upon laws as unchanging as the stars. Too many accountants stumble with clever shortcuts and guesswork, like children building towers of sand. We must build rules that stand like stone, or this so-called system will collapse.”

The circle grew silent, each student caught between Ismā‘īl’s impatience for practical ease and Ya‘qūb’s demand for rigorous order. All eyes turned toward Abū ‘Abdullāh al-Khwārizmī, who sat with his tablet before him, as if the weight of two worlds now rested on his shoulders.

Here, the Imam intervened with a smile brimming with wisdom, looking at the two students as a father looks upon sons quarreling over treasure. His voice was calm yet strong, carrying both warmth and authority.

“You have both spoken well, my sons,” he said. “Ismā‘īl seeks a method that is light and practical, like water flowing through the

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channels of trade. Ya'qūb seeks a method that is strong and orderly, like the mountains that never move. And the truth, as always, lies in the union of both. That is our lesson today.”

He lifted the Qur'an before him, its pages gleaming in the afternoon light. “The Book of God itself teaches us the principle of detail after the general command, like an architect who first sketches the great shape of the palace and then places each stone carefully, one by one. Listen to the Word of God:

﴿أَقِيمُوا الصَّلَاةَ﴾ (سورة البقرة: ٤٣)

Keep up the prayer. (Qur'an, Al-Baqarah: 43)

“This is the general command,” the Imam continued. “But then the Sunnah comes, breaking it down into steps as simple as footprints: bowing, prostrating, reciting, glorifying. Each act a brick, until the palace of worship stands firm. So too must you, Abū 'Abdullāh, break down the great operations of arithmetic into clear steps, until even the child in school and the mother in her home can walk the path with ease.”

All eyes turned to Abū 'Abdullāh. He held his tablet tightly, his fingers trembling for a moment before growing steady, as though he were receiving a revelation carved upon his heart. His voice carried the tremor of birth, of a new science entering the world.

“The problem with the old ways,” he began, “is that they demanded the impossible. We were asked to add numbers all at once, like a man straining to lift a mountain on his shoulders. But mountains are not carried. They are climbed—step by step. So why not divide the

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number into its parts—units, tens, hundreds—each small and light, like leaves plucked from a branch instead of the whole tree uprooted? In this way, the mountain dissolves into a straight path that anyone may walk.”

The students leaned forward, their eyes wide as dawn. In their silence there was the awe of discovery, as though the order of the universe had revealed itself on a simple tablet. What once seemed chaos was now breaking apart into harmony, brick by brick, step by step.

Lesson 3: The Algorithm of Addition

The air itself seemed to tremble with anticipation. The students fixed their eyes on Abū ‘Abdullāh al-Khwārizmī the way a weary traveler fixes his eyes on the horizon, waiting for the first light of dawn after a long night. They sat close together, their wooden tablets before them, covered in dust and smudged with the scars of failed numbers. The marks were like the scattered remnants of a battlefield after a war with no victory—signs of confusion, of battles lost against chaos.

Into that heavy silence, broken only by the faint crackle of oil lamps, stepped Ismā‘īl the merchant. His face was drawn, his shoulders heavy, his eyes burning with grievance. He dropped a large tablet in the middle of the circle. Its surface was covered with long, twisting sentences of numbers, tangled and stumbling like soldiers with no commander to lead them.

He lifted his hands in despair.

“Master!” he cried, his voice hoarse with exhaustion. “I spent the whole night trying to add these scattered numbers. Every time I reached the end, I had forgotten the beginning! It is like walking in a desert with no landmarks, where each step confuses me, and I always return to where I began.”

Ya‘qūb the logician lowered his eyes to the tablet, then slowly

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nodded, stroking his chin in thought. His voice was calm, but it cut like a blade.

“The problem is not the numbers themselves, Ismā‘īl. It is the old method. It has no order, no compass, no stars to guide it. Trying to add with it is like building a palace by tossing stones at random. There must be rules, fixed and firm, like the constellations that never fail the traveler in the darkest night.”

The students turned as one toward Abū ‘Abdullāh, their hearts pounding with hope and fear. Would he have an answer? Could he lift them out of the confusion that had swallowed merchants and scribes for generations?

He took a slow breath, then bent over his tablet. With careful strokes of the reed pen, he wrote a problem that seemed small, almost childish, but inside it lay the seed of a revolution:

$$135 + 482$$

For a moment, he let it hang there in silence. Then, with a motion so simple that it seemed almost laughable, he rewrote it—this time not stretched like a caravan across the page, but standing upright, one number directly upon the other. Units beneath units. Tens beneath tens. Hundreds beneath hundreds. The numbers lined up like stones in a sturdy wall:

$$\begin{array}{r} 135 \\ +482 \\ \hline \end{array}$$

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He lifted his head. “Look!” he said, his voice brightening, growing stronger with each word, like a fire finding dry wood. “The chaos has disappeared! The problem is no longer a mountain crushing our shoulders. It has broken into three little paths—simple, straight, and easy to walk.”

He tapped the lowest column with his pen.

“First, the units: 5 plus 2. That is 7. We write 7 beneath the line, firm as a seed sprouting in fertile soil.”

He moved to the next column.

“Now the tens: 3 plus 8. That is 11. We write down 1, and the other 1 we carry, lifting it up to the hundreds like a helper climbing to join his brothers.”

Finally, he touched the top column.

“And now the hundreds: 1 plus 4, and do not forget the 1 we carried! Together they make 6. We place it below the line like the crown on a completed tower.”

He leaned back, his eyes shining, his hand trembling slightly from the force of the discovery.

“The answer is 617.”

The students gasped. They leaned forward, as if the simple number on the tablet were a jewel just pulled from the earth, shining under the lamplight. Ismā‘īl’s mouth opened in disbelief. Ya‘qūb’s eyes

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widened as though he had glimpsed a law of logic itself revealed. And the Imam—his face softened, his lips forming a quiet smile that said more than a hundred words: *a seed had sprouted, and the garden of knowledge had begun to grow.*

In that instant, the air in the circle shifted. It was as if they had all stood witness to the birth of something greater than themselves—a new path, a new key to unlock the world of numbers.

Ismā‘īl leapt to his feet, his eyes wide with a joy that made him look like a boy again. His voice rang through the mosque, startling even the birds resting in the rafters.

“Astonishing!” he cried, clapping his hands together. “Addition used to drain our days, devour our nights, and ruin our trade! But you, Abu ‘Abdullāh, you have turned it into a path as clear as a beam of light cutting through the darkness. With this method, I will conquer the market, outwit every rival, and become the richest of merchants!”

The students laughed at his excitement, but no one doubted his words. They all knew what this meant: the burden of chaos had been lifted, and in its place stood a method as clean and solid as a well-built bridge.

Ya‘qūb, however, did not shout. He sat with his hands folded, his brow furrowed, his eyes fixed on the numbers as though they were stars in the night sky. When he finally spoke, his words carried the weight of philosophy.

“It is more than a trick,” he said slowly. “It is a mighty method, a

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new logic. You have made the large small, the complex simple. This is not only mathematics—it is philosophy in practice. You have given us a method that rivals the very style of the Qur'an, which begins with a grand summary and then details each part with clarity. Abu 'Abdullāh, you have given order to what was once chaos.”

At that moment, the Imam raised his head. His face was alight with pride, as though he were gazing upon his own son. He spoke in a voice that rolled through the chamber like thunder, steady and strong, yet filled with affection.

“Abu 'Abdullāh, today God has opened for you a gate from the gates of beneficial knowledge—knowledge that makes people's work easier, that brings justice closer to their lives, that turns confusion into clarity. And in honor of this discovery, to preserve your name in the history of mankind, I give this method a name. From this day forward, it shall be called **Al-Khwārizmiyyah**—the Algorithm—after you, Muhammad ibn Mūsā.”

The words struck the students' hearts like a bell tolling at dawn. They looked at one another in awe. They knew they were witnessing not just a lesson, but a turning point in history. A word had been born in that moment, small and fragile like a seed—but destined to grow into a vast tree whose branches would stretch across the world, offering shade and fruit to generations yet unborn.

Lesson 4: The Algorithm of Subtraction

Concepts of Deficiency and Borrowing

The dawn after the triumph of addition did not come empty. It carried with it a whisper of cool wind that slipped through the old wooden doors of the mosque, calming the restless heat of minds that had not slept. The students returned to their corner, where wax lamps still smoked faintly and tablets lay crowded with the scars of last night's numbers. Every mark was proof of discovery, and every tired gaze held the flame of a deeper hunger: *what will the next secret be?*

The Imam entered quietly, like a gardener who knows that seeds do not need to be forced—only watched, nourished, and trusted to bloom when the time is right. His eyes lingered on his young companions. Ismā'īl sat with trembling hands, unable to contain his eagerness. Ya'qūb, calm as always, leafed through a worn book of philosophy, as though seeking echoes of what they had just unveiled. And at the edge of the circle, a boy no older than fifteen bent over his tablet. He dared to attempt subtraction.

At first, his stylus scratched with confidence:

“Eight minus three equals five.”

He wrote the number with care, smiling, as if planting a seed in

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fresh soil.

“Fifty-five minus twenty-two...”

The tens fell into place beneath his hand. But then he reached the harder riddle.

“Three hundred twenty-five minus one hundred forty-seven...”

The boy paused. His brow furrowed. His lips moved as though whispering a prayer. And then—he wrote, but wrongly. His hand betrayed his mind. The figures mocked him. His face flushed red, the shame of failure burning hotter than the lamp beside him.

Ismā‘īl leaned forward, eyes sharp, sensing the boy’s mistake. “You see?” he whispered, “this is where numbers test us.”

The Imam, watching, did not move to correct him at once. Instead, he allowed the silence to stretch, like the quiet air before rain. He knew that loss must be tasted as surely as gain. For subtraction is not only a tool of numbers, but a mirror of life itself: we are born, we grow, we lose, and in loss we learn what balance truly means. Columns lean upon columns, just as souls lean upon souls. Each gives. Each borrows. Each sustains the whole.

The circle shifted in their places, the fire of anticipation alive once more. They were about to discover that even absence has its law, and that the path of numbers was not only a climb toward light but also a descent into shadow—a descent that revealed, in its own way, a hidden radiance.

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Ismā‘īl could no longer contain himself. His words broke forth like a cloud heavy with rain, ready to pour:

“This is magnificent, Abū ‘Abd Allāh! With this new art of addition, we can count what we own and rejoice in the increase. But trade is not always profit, not always coffers swelling with gold. What troubles me most, and keeps me awake long after the lamps have burned low, is how to measure loss. How do we reckon the expenses that devour money, the debts that weigh on shoulders like millstones, and the failures that empty the pockets of even the wise? Tell us—does subtraction have a rule as simple and clear as addition, one that can guide us out of the darkness of loss into the light of understanding?”

Yā‘qūb lifted his eyes from his book. His gaze, deep and still, carried the weight of oceans. He spoke with the calm of one diving into hidden waters:

“A valid question, Ismā‘īl. Addition is the logic of growth, of being, of increase—it mirrors the abundance of the stars that fill the heavens. But subtraction is different. It is the logic of decrease, of loss, a stern reminder that nothing in this life lasts forever. Is it only the shadow of addition, its simple opposite? Or does it hold within it its own hidden laws—laws that whisper to us of time, of trials, of the passing of life and the coming of death?”

The Imam listened to them both, his eyes shining like a spring freshly opened from the earth. When he spoke, his words carried both firmness and mercy:

“Everything in God’s creation is balanced, my children, and in

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that balance lies the truth. The Qur'ān does not speak only of increase and mercy that fills the heart—it also speaks of loss, trials, and the refining fire that purifies the soul.”

He raised his hand gently, and his voice recited, clear and resonant:

﴿وَلَنَبْلُوَنَّكُمْ بِشَيْءٍ مِّنَ الْخَوْفِ وَالْجُوعِ وَنَقْصٍ مِّنَ الْأَمْوَالِ وَالْأَنْفُسِ
وَالثَّمَرَاتِ وَبَشِيرِ الصَّابِرِينَ﴾ (سورة البقرة: ١٥٥)

“We shall certainly test you with fear and hunger, and loss of property, lives, and crops. But [Prophet], give good news to those who are patient.”
(Qur’ān, al-Baqarah 2:155)

The students fell silent. The verse sank into their hearts like a seed planted in fertile soil. Loss was not merely subtraction in trade, nor a void in numbers. It was a divine law, a teacher in disguise, a trial meant to strengthen patience and reveal hidden balance.

Ismā‘īl leaned forward, his voice urgent, like a torch flaring in the night:

“So deficiency is not an accident—it is woven into the very system of existence. It teaches patience, it reveals strength hidden beneath weakness. Just as science measures increase, so must it also find a way to calculate loss, so that clarity may rise even from shadows. Ponder this, Abū ‘Abdullāh, and bring forth for us an algorithm that will illuminate the darkness of deficiency.”

Abū ‘Abdullāh hesitated. His fingers rested stiffly upon the tablet, frozen at first like a door not yet opened. Then, slowly, they began

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to move, as though an unseen hand guided them. His eyes glimmered with a quiet fire, and the students sensed that something unseen was descending into him, whispering from the hidden chambers of thought.

“We shall use the same secret of columns that saved us in addition,” he began, his voice steady, “for subtraction is the shadow of addition, and within that shadow lies its own strength. Just as the sun, when it casts a shadow, reveals the true outline of a body, so too does subtraction strip a number to its essence.”

He pressed the stylus carefully into the wax: $658 - 123$.

The students leaned forward, breath caught in their chests, as if a door between darkness and light was about to swing open.

$$\begin{array}{r} 658 \\ -123 \\ \hline \end{array}$$

“The matter here is as easy as walking on a level path,” he said, drawing a firm horizontal line across the tablet, a barrier between what is above and what is below. “We begin, as always, from the rightmost column.”

He tapped with his stylus:

“The units column: 8 minus 3 equals 5. Write it below the line, like a seed pushing through the soil.”

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“The tens column: 5 minus 2 equals 3. Write it as it gains firmness, like a young stem.”

“The hundreds column: 6 minus 1 equals 5. Write it as the summit that completes the mountain.”

He lifted the stylus, his face breaking into a smile, the relief and clarity shining. “And the result is—**535!**”

The circle broke into murmurs of approval, yet one voice pierced the air with sharpness.

Ya ‘qūb’s eyes gleamed with challenge, his words cutting like the edge of a sword:

“And what if the number above is smaller than the one below in one of the columns, Abū ‘Abdullāh? What if we must subtract **147 from 325**? How shall we take 7 from 5 without tearing down all the logic we have built?”

The air stilled. This was no simple matter. The riddle of subtraction had revealed its hidden face.

Abū ‘Abdullāh bent over the wax once more.

$$\begin{array}{r} 325 \\ -147 \\ \hline \end{array}$$

He whispered, almost to himself: “How do we take seven from five...?” His brow darkened, confusion drifting over his features like a

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heavy cloud. For a moment the students watched him struggle, as though a mountain stood blocking his path.

Then, suddenly, his eyes shone—bright and sudden, like the sun breaking from behind that cloud. His voice rose with a light of discovery:

“We cannot... unless we seek help from our stronger, more generous neighbor! The poor column must borrow from the rich one—just as in life, when the weak find strength through the support of the strong. The columns of numbers lean on one another, as neighbors lean upon neighbors, as brothers lean upon brothers. None stands alone.”

The students exchanged glances, their weariness gone, their hearts ignited. What had begun as a mere question of numbers was becoming a lesson in life itself.

Abū ‘Abdullāh’s voice grew in strength, flowing like a river that gathers speed as it widens. His stylus danced across the tablet, each mark alive with meaning.

“We cannot subtract seven from five,” he said, his tone firm yet glowing with discovery. “The deficiency is greater than what is present. So we *borrow*. We take one from the tens place. The two becomes only one, as if it has given from its wealth. That one does not vanish—it travels, transformed into ten, and descends to enrich the units place. The poor five now becomes fifteen.”

The students leaned closer, eyes wide as if watching gold pour from one jar into another.

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“Now: fifteen minus seven equals eight,” Abū ‘Abdullāh continued, writing the number as if planting a young tree. “This is the fruit of cooperation, the harvest of interdependence.”

He pointed again with his stylus, voice gaining rhythm:

“The tens are now one, reduced after its giving. But here we face another trial—one cannot subtract four from one. Again, deficiency threatens the structure. So we borrow once more, this time from the hundreds. The three becomes two, sacrificing a portion of itself for its neighbor. That one descends, multiplied into ten, enriching the tens place. Now the lonely one becomes eleven.”

The students’ hearts raced with the unfolding secret.

“Eleven minus four equals seven,” he said, etching the number with deliberate strokes. “And finally, the hundreds: two minus one equals one. That is the summit, the peak that crowns the structure.”

He lifted the tablet high, his face shining like a conqueror raising a banner after victory.

“The result is **178!**”

The circle erupted. Awe filled the air, thick as incense. The hidden key of *borrowing* had flung wide the doors of subtraction. What seemed like a riddle now felt as natural as a breeze passing through an open window.

Ismā‘īl leapt to his feet, his voice breaking into laughter. “It is magic! Subtraction has become as simple as addition!”

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The young boy who had failed earlier pressed his hands to his face, tears of joy streaming through his fingers. “Now I understand the deficiency,” he cried. “It is not weakness—it is hidden cooperation between the columns. Each gives, each receives, and all are held together.”

The Imam, smiling like a father pleased with his children, spoke gently, his voice filled with warmth:

“Glory be to God! This is how people live as well. The weak lean on the strong, and the rich support the poor. Listen to the words of your Lord:”

﴿وَتَعَاوَنُوا عَلَى الْبِرِّ وَالتَّقْوَى﴾ (سورة المائدة: ٢)

‘...Help one another in what is good and pious...’
(Qur’ān, al-Mā’idah 5:2)

“Subtraction is not a tale of numbers ending. It is a school for interdependence, a lesson in mercy. It teaches us that what seems like loss is often the beginning of balance, and that generosity flows through the equation just as it flows through life.”

The Imam let the silence stretch for a moment, so that the verse might settle deep into their hearts. Then, he leaned forward, his eyes gleaming with gentle playfulness.

“Let me tell you a story,” he said, his voice lowering as if inviting them into a secret.

“Once, there was a caravan that crossed the wide desert. Each

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merchant carried his own supplies: food, water, and dates packed tightly upon his camel. For many days the journey went well, until a sandstorm rose and scattered their loads. When the storm ended, some found their bags empty, while others still had more than they needed.

The men gathered in fear: ‘How will we reach the next oasis? Some of us will perish.’ But the leader of the caravan stood tall and said, ‘Let us live as the numbers do. Those who have plenty shall give to those who have little. Each will share according to his strength, and together we will arrive.’

So they redistributed their supplies. One who had much water shared with one who had none. Another who carried extra dates gave to the hungry. They all lost something, but none lost everything. And so, step by step, they reached the oasis alive, stronger in spirit than when they had set out.

Now, my children, what do you think? Was this not subtraction at work? The richer gave to the poorer, but in truth, all were saved. In their giving, the caravan did not diminish—it grew in unity.”

The students nodded, their faces lit with understanding. The parable had painted subtraction not as loss but as balance, not as emptiness but as survival.

The Imam smiled once more. “This is why numbers are a mirror of life. Subtraction is not the end of a sum—it is the beginning of cooperation, the mercy that sustains the journey.”

Lesson 5: The Algorithms of Multiplication and Division

The Art of Deconstructing the Complex and Distributing Justice

After zero had illuminated the void and sealed the system complete, and after the rivers of addition and subtraction had carved their paths through the fertile valley of numbers, the circle gathered once more. This time, their hearts trembled with the sense that a new horizon was before them—greater, wider, more astonishing.

The Imam looked upon them with the calmness of one who knows that mountains lie ahead, yet also knows that every mountain holds hidden springs. “Now,” he said, “it is time to delve deeper into the depths of calculation, to uncover the secrets of multiplication and division. These two are not mere tools—they are the heart of reckoning, transforming chaos into balance, and balance into justice.”

He unrolled the Qur’ān and recited with a voice that carried like water through stone:

﴿وَإِذِ اسْتَسْقَىٰ مُوسَىٰ لِقَوْمِهِ فَقُلْنَا اضْرِبْ بِعَصَاكَ الْحَجَرَ فَانفَجَرَتْ مِنْهُ اثْنَتَا عَشْرَةَ عَيْنًا قَدْ عَلِمَ كُلُّ أُنَاسٍ مَّشْرِبَهُمْ كُلُوا وَاشْرَبُوا مِنْ رِّزْقِ اللَّهِ وَلَا تَعْتُوا فِي الْأَرْضِ مُفْسِدِينَ﴾ (سورة البقرة: ٦٠)

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“When Moses asked for water for his people, We said, ‘Strike the rock with your staff.’ And twelve springs gushed out, and each group knew its drinking place. Eat and drink from God’s provision, and do not cause corruption in the land.”
(*Qur’ān, al-Baqarah 2:60*)

The students leaned in, their imaginations quickening. The Imam smiled:

“Do you see, my children? In Arabic, the word for multiply is *ḍarb* (ضَرَبَ)—to strike. In your tongue of English, ‘strike’ and ‘multiply’ are strangers to one another. But in the Qur’ān and in our language, they are kin. For when one number strikes another, the result is increase—abundance flowing forth, just as when Mūsā struck the rock and twelve springs burst out. From one blow, a multiplication of blessings.”

The students murmured in wonder, Ya‘qūb whispering, “So multiplication is not cold repetition—it is the miracle of one seed becoming a field, one drop becoming a river.”

Ismā‘īl’s eyes shone. “It is the law of life itself!”

The Imam nodded, and then turned the page. His voice deepened as he recited again:

﴿وَإِذَا حَضَرَ الْقِسْمَةَ أُولُو الْقُرْبَىٰ وَالْيَتَامَىٰ وَالْمَسَاكِينُ فَارْزُقُوهُمْ مِنْهُ وَقُولُوا لَهُمْ قَوْلًا مَّعْرُوفًا﴾ (سورة النساء: ٨)

“If other relatives, orphans, or needy people are present at the distribution, give them something from it, and speak to them kindly.”
(*Qur’ān, al-Nisā’ 4:8*)

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He set the manuscript down gently.

“And here is the other half of the heart,” he said. “Division. In Arabic, we call it *qismah* (قِسْمَة)—the same word for distribution, for allotting shares. In English, division and distribution are separated. But in our Book, in our tongue, they are one truth. For what is division if not fairness? What is calculation if not justice? Just as wealth must be divided with kindness, so too numbers must be parted with balance. The operation is never a mere result on the tablet—it is a mirror of society itself.”

The young boy, eyes wide, asked: “So when we divide, it is not only numbers that we divide—it is as if we are practicing justice itself?”

“Indeed,” said the Imam, his smile radiant. “Multiplication is the miracle of abundance, the striking that brings forth more than was there before. Division is the mercy of fairness, the act of giving each their due share. Together, they complete the circle. Without them, knowledge is half-formed. With them, balance reigns.”

The Imam’s voice had barely faded when he recited again, and the words of the Qur’ān fell upon the students like clear drops of water:

﴿وَبَيَّنَّهٗمۡ أَنَّ الْمَآءَ قِسْمَةٌ بَيْنَهُمۡ ۖ كُلُّ شِرْبٍ مُّحْتَضَرٌ﴾ (سورة القمر: ٢٨)

“And tell them that the water is to be shared between them, each allocated a turn to drink.” (Qur’ān, al-Qamar 54:28)

Multiplication, then, was like the sudden gushing of a spring at God’s command—bursting forth with life, strength, and abundance. Division was like the branching of rivers, the measured flow of

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sustenance that reached every field and village. As the Book of God declared:

﴿وَكُلُّ شَيْءٍ عِنْدَهُ بِمِقْدَارٍ﴾ (سورة الرعد: ٨)

“...everything has its measure with Him.” (Qur’ān, al-Ra’d 13:8)

That day, the Imam’s circle gathered with hearts ablaze. The air was thick, as though the room itself were a cauldron upon a raging fire. It was no ordinary session of study—it was a battlefield where ignorance would be challenged and clarity sought. Tablets lay stacked before the students like shields awaiting warriors. Beams of late-afternoon sun pierced the latticework screens, stretching long shadows across half-finished equations—silent witnesses of sleepless nights spent wrestling with the mysteries of numbers.

Ya’qūb sat with his shoulders hunched, leaning heavily on his book of philosophy, as though seeking shelter within its worn pages. Ismā’il clutched his ledger with trembling hands, his knuckles white, as if holding the weight of trade itself in his grasp. The rest of the circle sat in tight ranks, eyes unblinking, waiting.

At the center, the Imam observed them all, his gaze overflowing with hope. His eyes were like a spring rising in the desert—clear, life-giving, and inexhaustible. He knew that what was about to be revealed would open a river of knowledge that no drought could dry.

At last, Ya’qūb broke the silence, his voice sharp and precise, cutting the air like a drawn sword:

“You have dazzled us with addition and subtraction, Abū

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‘Abdullāh. But these are small fires, enough to light the hearth. The true disaster—the one that has haunted our nights and left us restless—is multiplication and division. Especially when the numbers grow vast, towering like mountains no man can climb. The old methods collapse before them. Tell us—have you brought us a way through?”

Ismā‘īl struck his tablet with the palm of his hand, the crack echoing in the chamber like a drumbeat of battle. His voice trembled with both frustration and hope:

“Ya ‘qūb speaks the truth! A merchant like me can spend half a day wrestling with the price of a single trade, and at the end I emerge exhausted—like one who has fought a beast and barely survived. If you do not possess an algorithm for multiplication and division, then we remain prisoners of chaos forever!”

The words hung heavy in the air. The circle turned as one to the Imam, waiting for the spring to gush, for the door of knowledge to open.

The Imam turned his gaze upon Abū ‘Abdullāh, his eyes shimmering with both challenge and trust. His voice was calm, yet it carried the depth of oceans:

“Do not fear the towering mountain, my son. Every mountain has a path, and wisdom is in seeking the way that breaks it into smaller hills, each easy to climb. Remember the principle our Lord teaches in His Book:”

﴿وَكُلَّ شَيْءٍ فَصَّلْنَاهُ تَفْصِيلًا﴾ (سورة الإسراء: ١٢)

“...We have explained everything in detail.” (*Qur’ān, al-Isrā’ 17:12*)

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“The complex becomes simple when broken down with care, part by part, until the parts return to form a whole. As a builder does when he takes stones from a mountain to raise a palace. But beware,” the Imam’s voice grew stern, “of the blameworthy deconstruction, the kind that destroys rather than builds. God warns of this in His revelation:”

﴿كَمَا أَنزَلْنَا عَلَى الْمُقْتَسِمِينَ * الَّذِينَ جَعَلُوا الْقُرْآنَ عِضِينَ﴾ (سورة الحجر: ٩٠-٩١)

“...*We sent down punishment on the dividers, who broke up the Qur’ān into parts...*” (*Qur’ān, al-Hijr 15:90–91*)

“For they believed in some and disbelieved in others, slicing the Word into pieces and robbing it of its unity.”

The words sank deep into the circle, a warning and a promise together.

Then Abū ‘Abdullāh lifted his tablet, his hands trembling—not with fear, but with the thrill of discovery. Upon it he wrote a problem that seemed simple, yet was in truth a gateway to greatness:

24 × 35

“Instead of striking these two great numbers as one heavy block that burdens the mind, let us cut the mountain into stones small enough to carry. See—” he said, drawing a grid upon the wax, a map that looked to the students like the chart of hidden treasure.

He leaned forward, his stylus moving with rhythm, each stroke a key unlocking a door:

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$4 \times 5 = 20$ (the units meet the units, like two friends embracing).

$4 \times 30 = 120$ (the units strike the tens, and the result swells with strength).

$20 \times 5 = 100$ (the tens strike the units, raising a sturdy wall).

$20 \times 30 = 600$ (the tens meet the tens, crowning the summit).

The students gasped softly. What had once loomed like an immovable mountain was now scattered into pebbles, each one light, each one manageable.

“And now,” Abū ‘Abdullāh said, his voice ringing with joy, “we gather the stones to raise the palace. We add them together, using the art we already know and love.”

He placed the numbers in neat rows:

$$\begin{array}{r} 20 \\ 120 \\ 100 \\ 600 \\ \hline 840 \end{array}$$

He lifted his stylus high, as though declaring victory after a long siege. “Behold! The mountain of multiplication was no more than a collection of stones. And when carried one by one, they build a structure both beautiful and strong.”

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The students leaned back, eyes wide, hearts racing. They had just seen chaos dissolve into order, and the impossible bow before method.

“The result is **840!**” Abū ‘Abdullāh cried, raising the tablet high like a banner on the battlefield, his face radiant with the joy of a sun rising after a storm.

The Imam’s eyes softened, and his voice flowed like a gentle spring:

“It is as if each multiplication is a marriage—two parts meeting and producing a new child of numbers. Each child joins the family, completing the structure as a brick completes a wall.”

Ismā‘īl and Ya‘qūb sat stunned, their mouths slightly open, as though the mountain of difficulty had suddenly turned into fine grains of sand.

Ya‘qūb whispered with wonder, his voice trembling:

“This is a wondrous logic, Abū ‘Abdullāh! You have broken the great problem into smaller ones that melt away like snow under the warmth of the sun.”

The Imam placed a hand on Abū ‘Abdullāh’s shoulder, his eyes glowing with paternal pride.

“You have struck the heart of the method, my son. But know this: only one summit remains—and it is the sharpest, the hardest, the most precise. Division. It is the art of distribution that ensures wealth flows to every rightful hand without injustice.”

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Ismā‘īl’s brows knotted, his voice heavy with the memory of sleepless nights.

“And it is what we need most—in the market, in inheritances—where justice and happiness of people depend on it! Tell us: how do we divide a large sum among many without wasting days on a single calculation, without stirring quarrels and disputes?”

Abū ‘Abdullāh closed his eyes and drew a deep breath, as if gathering his strength for an intellectual battle. When he opened them, they glimmered with fire.

“Let us dive to the essence of the problem,” he said, “as one who plunges into a deep well to draw fresh water. What is division in its reality? It is repeated subtraction—justice performed step after step until all is fairly finished. For example: if we ask, ‘What is twenty dinars divided among four men?’—we are really asking: ‘How many times can we subtract four from twenty until nothing remains?’ The answer is five times. That is the division that satisfies the heart.”

Ya‘qūb stroked his chin, frowning. “But this way is slow... as slow as a tortoise crossing the desert when the numbers grow large.”

“True, Ya‘qūb,” Abū ‘Abdullāh answered with a smile of confidence. “That is why we must invent a swifter method—an algorithm that turns repeated subtraction into a flowing wind, carrying the clouds of justice swiftly across the sky.”

He took his stylus, wrote boldly upon the wax, and declared: “Here is a real problem of trade: 845 dinars to be shared justly among 5

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men. What is each man's share?"

He drew the long division form, like a map guiding them to a fruitful journey. His voice grew steady, his tone rising and falling like the rhythm of a storyteller nearing climax:

"We will not divide the entire number at once, for that is like bearing a mountain on one's back. Instead, we move step by step, from the greatest value to the smallest, as one climbs a ladder rung by rung. Division is a cycle of justice, repeated with precision until balance is complete."

"Here we have 8 hundreds," Abū 'Abdullāh began, his stylus pressing into the wax, "like a hidden treasure awaiting its rightful shares. How many fives can we draw from 8? Only one. The rest we carry forward, like wealth awaiting its next distribution."

He wrote carefully:

Divide: $8 \div 5 = 1 \rightarrow$ he placed 1 at the top, the first sign of justice.

Multiply: $1 \times 5 = 5 \rightarrow$ he inscribed the 5 beneath the 8, the first share delivered.

Subtract: $8 - 5 = 3 \rightarrow$ three hundreds remained, waiting their turn.

"Now we bring down the 4 tens from the original number to stand beside the 3 hundreds," he continued, "making 34 tens. It is like pooling wealth into one chest, ready to be measured out."

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Again, the stylus moved:

Divide: $34 \div 5 = 6 \rightarrow$ he wrote 6 at the top, beside the 1.

Multiply: $6 \times 5 = 30 \rightarrow$ he placed 30 beneath the 34, the rightful share.

Subtract: $34 - 30 = 4 \rightarrow$ four tens remained, waiting for justice.

At last he lifted his head, his eyes glimmering. “Finally, we bring down the 5 units from the original number to join the 4 tens. Together they form 45, like a final treasure gathered before the people.”

The students leaned in, their eyes wide, their breath caught. They knew the climax was near, and that the last stroke of the stylus would unlock the secret of division.

“Bring down and repeat,” Abū ‘Abdullāh declared, his hand steady. “Now we have 45, a sea full of hope, waiting to be shared. How many fives can we take from 45? The answer is exactly 9—absolute justice, with no excess and no shortfall.”

His stylus etched the conclusion:

Divide: $45 \div 5 = 9 \rightarrow$ he wrote 9 at the top, sealing the column with fairness.

Multiply: $9 \times 5 = 45 \rightarrow$ he inscribed it neatly beneath the 45, like scales perfectly balanced.

Subtract: $45 - 45 = 0 \rightarrow$ “Nothing remains,” he said, “as if justice

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itself has been fulfilled!”

Abū ‘Abdullāh straightened, his eyes bright with triumph. Pointing to the row above, he declared with a voice that ran like a river breaking free of its banks:

“Therefore, each man’s share is exactly 169 dinars—with no increase to tempt greed, and no decrease to stir dispute!”

The students exhaled together, awe flooding the chamber. The riddle of division, the last and greatest summit, had been conquered.

Days later, when the four algorithms—addition, subtraction, multiplication, and division—had become so natural to him that they flowed in his veins like blood, Abū ‘Abdullāh walked once more into the Stationers’ Market.

The same perfumes of ink, leather, and spice mingled in the air. The same restless tide of voices rose and fell around him. Yet his steps now carried a quiet certainty, like a man who had crossed the desert and found his oasis.

Ismā‘īl was waiting. With shaking hands he placed before him the parchment of tangled calculations—the silk deal whose complexity had once mocked them both, drowning them in confusion and error.

But this time was different. Abū ‘Abdullāh reached for a fresh tablet. His stylus moved swift as lightning, yet steady as a judge’s hand. Addition flowed. Subtraction followed. Multiplication and division marched like obedient soldiers. Each step was clear, each result inevitable.

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In the space of moments, what had once been a swamp of hesitation now stood as a shining edifice of certainty. The answer glowed upon the wax as if carved in stone.

The noise of the market faded from Ismā'il's ears. His eyes widened, his mouth fell open. At last he burst out, his shout shaking the wooden stall:

“This is not calculation, Abū ‘Abdullāh—this is white magic that rescues merchants from hell itself!”

Abū ‘Abdullāh's humble smile glowed like a lantern. “Not magic, my friend,” he said softly. “It is knowledge, when it follows God's path of ease and clarity. It is not sorcery, but light from the Light of the Qur’ān—light that makes our path straight, our lives fair, and our dealings beautiful.”

The Imam, who had listened in silence, lifted his hand and concluded:

“My sons, remember this. Division is not only in arithmetic—it is the foundation of justice in life. Whoever learns to divide numbers truthfully will find it easy to divide wealth, time, and even love with truth as well.”

The Imam let his words rest, then leaned forward as if to share a secret carried by time itself.

“Let me tell you a story,” he said, his voice deep and steady.

“There was once a father who had three sons. He was a simple

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man, but he worked hard all his life and gathered a modest estate—some land, a flock of sheep, and a chest of coins. When his final days approached, he called his sons to his side.

‘My children,’ he said, ‘I leave you not riches alone, but a trust. Divide what I have among yourselves with justice, and you will live as brothers. But if you let envy and greed guide you, my wealth will become a curse.’

The father passed away, and the sons sat together, the estate spread before them. At first, they argued—each wanted more of the land, more of the sheep, more of the coins. Their voices rose, anger burning like fire.

Then the eldest remembered the Imam’s teaching: *division is the path of justice*. He took the estate and measured it carefully, part by part. The land he marked into equal plots. The flock he counted and divided, making sure each brother received the same. The chest of coins he split into three fair shares.

When the division was complete, no brother had cause to complain. Each received exactly what was due. Their anger cooled, and their hearts softened. They embraced one another, tears falling like rain.

From that day on, the brothers prospered. Not because the estate was great, but because justice had bound them together, and justice is a wealth greater than gold.”

The Imam raised his hand and concluded:
“This, my sons, is why we learn division. Not only to solve numbers, but

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to learn how to live. For the one who divides with truth builds not just equations, but peace.”

Lesson 6: The Quiet Revolution of Calculation

How the Algorithms Changed the Face of the World

After the algorithms had illuminated the hidden paths of calculation and completed the system, the time came to taste their fruits—fruits that quietly transformed the world. Their spread was like the morning breeze: unseen, gentle, yet stirring the leaves of civilization until all was moved. They flowed into the market, the courthouse, and the observatory, sowing justice, birthing science, and laying the foundation of a civilization beyond imagination.

﴿وَجَعَلْنَا النَّهَارَ مَعَاشًا﴾ (سورة النبأ: ١١)

“And the day for livelihood.” (Qur’ān, al-Naba’ 78:11)

Years slipped by like lightning, swift and unforgettable. Ismā‘īl’s stall, once a humble shop choked by confusion and sweat, had grown wide and full like a river after heavy rain. The power of the new numbers, and the algorithms that hummed within them, had become the hidden engine of his success.

Merchants came from distant lands—not only to seek the silks of China and beyond, shimmering like rainbows caught in cloth—but also to learn the secret knowledge that made transactions flow like water from a jug.

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The stall itself seemed enchanted. Rolls of silk glowed in colors that dazzled the eyes. Their soft fragrance mingled with the sharp smell of ink on tablets stacked high, each tablet a battlefield conquered by calculation. Where once there had been clamor and sweat, there was now order: the quick scratch of quills, the rhythm of sums and shares, profits tallied with the speed of lightning, disputes settled with the sharpness of truth. The marketplace roared outside, but inside Ismā‘īl’s stall, reason itself reigned, silent and strong.

Ismā‘īl bent over a polished tablet, its surface shining like a mirror of justice. Beside him stood a boy with wide eyes, following every stroke. Ismā‘īl’s voice was warm, carrying the pride of a teacher planting seeds in fertile soil:

“Look, my son, do not fear the great numbers that seem like mountains. Place the units beneath the units, the tens beneath the tens, the hundreds beneath the hundreds. Like this. Step by step, the mountain becomes small hills, easy to cross. With this *algorithmic* method, calculation becomes swift as the wind that carries news of rain, and justice sharp as a sword in your hand.”

A Persian merchant with a white beard and eyes keen as falcons stood watching. He had brought a caravan whose accounts filled entire parchments. He compared his own accountant, still fumbling with beads on an abacus, to Ismā‘īl’s hand racing across the wax. Before the beads had even settled, the Baghdad merchant had completed the reckoning.

The Persian’s voice rang with awe:

“In Baghdad you reckon with lightning and strike with the

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precision of a sword! Tell me—what is this sorcery that makes numbers bow before you like obedient slaves?”

Ismā‘īl’s chest swelled with pride, his words flowing like a river overfilled by rain:

“This is not sorcery, master. This is a new science born here in Baghdad. It is called the science of Algebra and Arithmetic. It is the fruit of my friend al-Khwārizmī’s mind, watered by the wisdom of our Imam. With it, trade flows like water, and profits increase like the downpour after drought.”

Then he recited the words of God, his voice firm, anchoring commerce in the soil of ethics:

﴿كُلُوا وَاشْرَبُوا مِنْ رِزْقِ اللَّهِ وَلَا تَعْتُوا فِي الْأَرْضِ مُفْسِدِينَ﴾ (سورة البقرة: ٦٠)

“Eat and drink from God’s provision, and do not cause corruption in the land.” (Qur’ān, al-Baqarah 2:60)

And so the market stall, once drowning in confusion, became a fountain of clarity. Knowledge had turned chaos into order, and trade into an act of justice.

In the judge’s court, the air was thick with tension. Oud smoke curled from an old brass censer, mingling with the heat of bodies pressed shoulder to shoulder. Voices overlapped—pleas, arguments, muttered speculation—rising and falling like waves crashing in a storm.

At the center stood a widow, frail in frame yet firm in spirit, her

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three orphans gathered at her side. She held them close as though shielding tender branches from a raging wind. Their wide eyes flickered between the stern face of the judge and the looming figures of their opponents—wealthy relatives robed in fine cloth, beards trimmed to perfection, eyes sharp as blades.

The dispute was thorny, twisted with questions of land, debts, and inheritance. In the old days, such a case would have dragged on endlessly, smothered in tangled calculations. The powerful would hide behind confusion, bending numbers to their favor, while the weak were silenced, their voices fading like travelers lost in a foreign land.

But this day was different. Beneath the gaze of the judge and the bronze scales hanging above his seat, a new clarity was about to descend.

The judge lifted his great tablet, holding it with hands as steady as though he grasped the scales of justice themselves. With calm precision, he began to write. His stylus moved with quiet confidence, tracing the algorithm of inheritance that had become the hidden engine of fairness.

He laid out the shares clearly: one-eighth for the wife, the remainder for the children—each son receiving twice the portion of a daughter. The unknowns were marked with the symbol *sh* (for *shay*’, “the thing”), and with a few steps, swift and sharp as lightning, the tangled dispute dissolved into order. No haze, no hesitation, no ambiguity.

The judge raised the tablet for all to see. His voice was quiet, yet it carried the weight of mountains:

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“This is the just ruling of God, and this is its precise calculation—light that dispels the darkness. The wife receives this much, each son this much, each daughter this much. With no increase to provoke envy, and no decrease to wrong the weak.”

Then he recited, his voice echoing like the strike of a bell:

﴿وَأَقِمْوَا الْوِزْنَ بِالْقِسْطِ وَلَا تُخْسِرُوا الْمِيزَانَ﴾ (سورة الرحمن: ٩)

“Weigh with justice, and do not fall short in the balance.”

(Qur’ān, al-Rahmān 55:9)

The widow’s shoulders trembled, but this time with relief. Her children clung to her, their faces no longer filled with fear but with the quiet glow of hope. Even the wealthy relatives lowered their eyes, unable to argue with a judgment that was as clear as the sun.

The widow gazed at the crystal-clear numbers. No longer were they frightening talismans that concealed treachery; now they shone as her children’s rights, preserved like treasures locked safely in a chest. For the first time in her life, justice was not only a word uttered by tongues—it was something that could be seen, calculated, and touched. A single tear slid down her cheek, a tear of gratitude, as she whispered praise to God for this new blessing.

Under the great dome of the Al-Shammāsiyyah Observatory, the night sky stretched vast and silent, constellations glittering like divine script upon an endless page. Within the chamber, a hushed intensity filled the air. Scholars bent low over their tablets, quills scratching in steady rhythm, weaving numbers into patterns that mirrored the stars

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above. Parchments lay scattered like fallen leaves, crowded with figures and symbols—the newborn astronomical tables they now called the *Zij*. The scent of aged paper, ink, and the faint chill of night drifting through stone arches blended into a single breath of learning.

Ya‘qūb the logician stood stiffly at first, his arms folded, still bearing a trace of the old disdain he once held for numbers and their “lowly” calculations. But as he leaned over the shoulder of a senior astronomer, his composure faltered. Before his eyes, the heavens began to reveal themselves.

With the new numerals and their step-by-step algorithms, the astronomer traced Jupiter’s path across the sky, his stylus swift yet exact. Then he turned, marking the precise moment when a lunar eclipse would shadow the earth. The figures aligned perfectly—precise, undeniable.

Ya‘qūb’s face softened. His eyes widened with reverence, as though the stars themselves had stooped to speak—not in riddles or parables, but in the clear, ordered tongue of numbers. What once seemed trivial reckoning now stood revealed as the very key to the cosmos.

His voice broke the silence, filled with astonishment greater than philosophy:

“I thought this science belonged only to merchants, my friend, fit only for weighing coins and counting dirhams. But now I see: these are not mere numbers. This is the language with which we read the universe itself. It is as though God has opened before us a book written in the heavens, and each calculation is a verse that reveals its harmony. With these algorithms, the heavens come nearer to us than ever before, and

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the secrets of night and day unfold with a precision that humbles the mind.”

Then the Imam, who stood nearby, recited with a voice that rose like the dawn:

﴿إِنَّ فِي اخْتِلَافِ اللَّيْلِ وَالنَّهَارِ وَمَا خَلَقَ اللَّهُ فِي السَّمَاوَاتِ وَالْأَرْضِ
لَآيَاتٍ لِّقَوْمٍ يَتَّقُونَ﴾ (سورة يونس: ٦)

“In the alternation of night and day, and in all that God has created in the heavens and the earth, there are truly signs for people who are mindful of Him.”
(*Qur’ān, Yūnus 10:6*)

The scholars bowed their heads, the night sky still glittering above them, the numbers still glowing on the tablets below. Heaven and earth had spoken together—and their language was clear.

Abū ‘Abdullāh al-Khwārizmī sat in his familiar place within the Imam’s circle, beneath the vaulted ceiling of the mosque where golden verses of divine guidance glimmered like constellations on stone. Time had traced lines of wisdom across his face. The youthful fire in his eyes had softened into a steady glow, the glow of a man whose life had borne fruit. He sat like a great tree—its roots sunk deep into struggle, its branches heavy with harvest.

The Imam regarded him with eyes brimming with pride, eyes flowing like a cool spring after a long desert crossing. His voice was low, steady, but carried the weight of years:

“Look around you, Abū ‘Abdullāh. See the orchard that has blossomed from the seeds of your knowledge. The merchant in his

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market now calculates with ease and sells with justice. The judge in his court rules with precision, shielding the weak from being wronged. The astronomer in his observatory traces the heavens with a certainty that astounds the mind. Even the mother in her home can verify the sums of the vendor so she is not cheated, and the child in his school learns the science with joy, his heart drawn to it by its simplicity.”

The words filled the air, sweet and weighty. It was as though the circle could see with their very eyes the world transformed—an entire civilization touched by numbers that now bore the light of order, balance, and justice.

The Imam’s eyes welled with a tear of joy. “You have fulfilled what the Qur’ān commanded, my son. You did not seek knowledge to grow arrogant with it, as Ya‘qūb once desired when he scorned worldly affairs. Nor did you pursue it only for wealth, as Ismā‘īl longed in the days when he despaired of chaos. Instead, you sought it as a source of *ease, clarity, and balance* for God’s creation, so that people may live by it and thank Him for it. This is the true purpose of beneficial knowledge—knowledge that joins the mind and the heart, and builds a civilization that endures.”

Then he recited, his voice carrying like a beacon through the mosque:

﴿وَلَقَدْ يَسَّرْنَا الْقُرْآنَ لِلذِّكْرِ فَهَلْ مِنْ مُدَكِّرٍ﴾ (سورة القمر: ١٧)

“We have made the Qur’ān easy to learn. Is there anyone who will take heed?” (Qur’ān, al-Qamar 54:17)

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And thus the first part came to its close. They had witnessed the birth of a quiet revolution—calculation—that changed humanity itself: from the markets of Baghdad to the observatories of the stars, from the courts of justice to the hearths of homes, and into the very hearts of men and women.

The Imam raised his hand one last time, his words the seal upon the lesson:

“And so, my sons, the algorithms are not merely calculation. They are a balance that preserves justice, a clarity that illuminates minds, and an ease that makes life more eloquent, more beautiful, and more just.”

Three: The Systematic Construction – The Four Pillars of Algorithms

Abū ‘Abdullāh had now mastered the tools of his craft. The numerals flowed beneath his stylus, and the four operations—addition, subtraction, multiplication, and division—moved with such ease that they seemed like obedient servants at his command. Yet in his heart he sensed that this was only the beginning. For just as a house is not raised by wood and stone alone, but by the art of arranging them into walls and arches, so too numbers and rules by themselves could not build the science of calculation. What was needed was structure—the hidden order that turns scattered fragments into a living whole.

The Imam turned to him, his voice calm yet filled with the authority of wisdom:

“My son, you have gathered the alphabet of a new language. But letters alone do not make a book, nor do they reveal knowledge. It is grammar that binds them together into meaning, grammar that transforms them into clear and powerful speech. In the same way, rules will bind your numbers into harmony and breathe life into your science. They are the pillars upon which every algorithm must stand, just as a palace rests on its columns. Without them, the structure cannot endure.”

He paused, his gaze steady, his words settling like stones in the

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foundation of a great building.

“Know, then, that algorithms stand upon four mighty pillars, just as creation itself is sustained by order. These pillars will raise your science from scattered steps to a complete system, from mere calculation to true wisdom, from method to meaning.”

“The first is the **pillar of order and sequence**. For no number is correct, nor is any reckoning complete, unless its steps follow in proper succession—just as God sent down the verses of His Book in sequence, each following the other with perfect wisdom.”

“The second is the **pillar of condition and branching**. For every step rests on what enables it. He who cannot subtract must borrow; he who cannot multiply must seek aid from its neighbor. The path branches as necessity requires, yet all branches return to the trunk of truth.”

“The third is the **pillar of repetition and looping**. By this, knowledge is confirmed and certainty established—just as the Qur’ān repeats its promises and its warnings until they settle firmly in the hearts of people.”

“And the fourth is the **pillar of structure and symmetry**. For just as a palace stands firm by the harmony of its arches and the alignment of its walls, so too is an algorithm made sound by symmetry, where each part reflects and supports the others until the edifice is whole.”

The circle fell silent. The Imam’s words glowed in their minds

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like four lamps lit in a dark hall. Abū ‘Abdullāh felt within himself that a door had opened—that he was no longer merely a craftsman of numbers, but a builder of systems, standing at the threshold of a greater science.

Lesson 7: The Algorithms of Order and Sequence

The Art of Arranging the Steps

Ismā‘īl the merchant had lived in joy since the inventions of his friend Abū ‘Abdullāh. His sums now flowed like lightning through the night—swift, precise, and illuminating what once hid in shadow. But one afternoon he entered the Imam’s circle with a face clouded by confusion, his anger pressing against him like a volcano on the edge of eruption.

In his hands he clutched his wax tablet, its surface scarred with tangled numbers and broken attempts. It seemed less a record of trade than the weight of a wound.

“O Imam, O Abū ‘Abdullāh!” he cried, his voice trembling with frustration. “A strange disaster has struck me. I calculated a great deal using the new algorithms you entrusted to me. I checked every step with the care of a guard searching every corner. Yet the result was false, as wrong as an arrow missing its mark! I have lost much wealth, and my faith in this science is shaken. I trusted it as I trust the sun to rise each morning—how could it betray me?”

Ya‘qūb the logician stepped forward, his eyes gleaming with curiosity greater than philosophy itself. Stroking his beard as though unraveling a knotty riddle, he said:

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“This is impossible, Ismā‘īl. If the premises are correct, and if each operation is sound, then the result must also be correct—just as day must follow night. This is the foundation of logic upon which Aristotle built his edifice, and no calculation should break it.”

Abū ‘Abdullāh took the tablet gently from his friend’s trembling hands. His eyes scanned the numbers with the patience of a jeweler turning a gem beneath the light. Step by step, he examined: every addition was as solid as a fortress wall, every multiplication as precise as an arrow striking the target. The operations themselves were flawless. So where was the corruption? Where was the drop of poison in the cup of honey?

The silence of the circle grew heavy. The students leaned closer, their breaths hushed. Then, after a long pause, Abū ‘Abdullāh lifted his head, his face glowing with the light of discovery.

“I have found it!” he said, his voice carrying the joy of revelation. “The fault is not in the operations, Ismā‘īl—it is in their order! You built the house, but placed the roof before the foundation. You subtracted the partner’s share before calculating the net profit. You reversed the order, when the steps must follow one another with wisdom and precision!”

The Imam nodded slowly, his eyes shining. “So you see, my sons, that even correct steps lead to error if they are placed in the wrong sequence. The order is the hidden spine of every algorithm, as vital as the bones that hold the body upright.”

When Ismā‘īl grasped the reason for his error, his anger melted away like a storm cloud dissolving into a clear sky. In its place came a

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bright flame of curiosity. He leaned forward with the restless eagerness of a merchant catching the scent of hidden treasure.

“So the order,” he said, “is as essential as the foundation stones in a building. But is that all there is, master—or are there secrets still hidden within it?”

The Imam’s eyes glimmered, as though the question had unlocked a chamber long sealed. His voice flowed with calm authority:

“Order, my son, is not only the foundation of calculation—it is the rhythm of the universe itself. Just as the Qur’ān was revealed in sequence, verse by verse, shaping hearts and minds step by step, so too the cosmos unfolds in measured stages. The sun follows the moon. The seasons follow one another. Life follows death. History itself moves in ordered cycles. Without sequence, there is no cosmos—only chaos. And so it is with numbers: without order, their meaning collapses into confusion.”

He leaned closer, lowering his tone to a whisper that seemed to press upon the very air:

“Do not think of sequence as a mere technicality. It is one of the secrets of creation. To honor its path is to walk in harmony with the design of God.”

The Imam’s gaze wandered over the circle, then upward, as though tracing unseen verses written across the very sky. The hush deepened; even the walls seemed to lean inward, listening. For what was about to be spoken was not the secret of numbers alone, but of the

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cosmos, of history, of the very rhythm by which God unfolds His creation and His revelation.

“No, Ismā‘īl,” the Imam said at last, his voice carrying the depth of seas and the vastness of sky. “You have not uncovered a mere step to fix the sums of trade. You have uncovered one of the greatest *pillars* upon which algorithms—and the universe itself—are built by the wisdom of the Creator. It is the **Pillar of Sequence**: the order that makes steps follow one another, as God commands creation and life to flow in succession. And so that you may understand its depth and power, today we will journey not through the markets of Baghdad, but through the verses of the clear Book of God, where He reveals to us the greatest of sequential algorithms.”

(See Appendix 2: The Sequential Algorithms)

And then the Imam opened the noble Qur’ān, his hands trembling with awe, and said, his voice echoing in their hearts:

“Look at how the Qur’ān teaches us this logic in all things—from creation, to life, to death. The Qur’ān is a shoreless ocean. It is not a book of science that arranges its subjects in tidy tables and chapters. It is a book of guidance, in which pearls and jewels are scattered like stars across the sky. It is for the wise to dive and draw them out with the eye of insight.

What I place before you now is not the treasure itself, but only the map that points to its hidden places. I have given you the key. Your mission is to open the doors we have not yet touched. Contemplate, for example...”

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He turned the page and added, his voice heavy with reverence:

“This principle of sequence has its greatest origin in the Book of God, which reveals to us how the Creator brings the universe into being, step by step. Ponder the most wondrous of all algorithms—the creation of the human being. It begins from nothing, yet ends in a living soul that worships and thinks.”

He recited, his tone filled with both wonder and gravity:

﴿وَلَقَدْ خَلَقْنَا الْإِنْسَانَ مِنْ سُلَالَةٍ مِّنْ طِينٍ * ثُمَّ جَعَلْنَاهُ نُطْفَةً فِي قَرَارٍ مَّكِينٍ * ثُمَّ خَلَقْنَا النُّطْفَةَ عَلَقَةً فَخَلَقْنَا الْعَلَقَةَ مُضْغَةً فَخَلَقْنَا الْمُضْغَةَ عِظَامًا فَكَسَوْنَا الْعِظَامَ لَحْمًا ثُمَّ أَنشَأْنَاهُ خَلْقًا آخَرَ فَتَبَارَكَ اللَّهُ أَحْسَنُ الْخَالِقِينَ﴾
(سورة المؤمنون: 12–14)

“We created man from an extract of clay. Then We placed him as a drop of fluid in a secure resting place. Then We fashioned the drop into a clinging clot, and We fashioned the clot into a lump of flesh, and We fashioned the lump into bones, and We clothed the bones with flesh. Then We produced him as another creation. So blessed is Allah, the Best of Creators.” (Qur’an, al-Mu’minun 23:12–14)

The Imam raised his gaze to the circle, his eyes glistening.

“Do you see, my sons, the miraculous sequence? It is a divine order that leaves no room for chaos. The bones cannot exist before the lump of flesh, nor the lump before the clinging form, nor the clinging form before the drop. Everything comes in its proper place and time, like a golden chain linking beginning to end.

So too must your algorithms be: a sound sequence that builds and does not corrupt, that orders each step in its rightful place until the

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whole stands complete.”

Abū ‘Abdullāh then took up his tablet, and with firm strokes wrote in large, clear script for all to see:

“This is a vital sequence that cannot be brought forward or delayed—like life itself.”

Ya‘qūb leaned forward, his eyes glowing with a curiosity that outshone even the ancient philosophers. “This is clear in the world of nature, master,” he said, “for it proceeds according to fixed laws, like the rising of the sun and the falling of night. But does this apply also to the deeds of human beings, and to history itself, which so often seems as random and restless as the shifting winds?”

The Imam’s eyes deepened, as though reflecting the weight of centuries. His voice descended steady and heavy, carrying the gravity of ages:

“Indeed, my son. History, too, has its algorithm—its sequence firm as the orbit of the stars. Nations rise not by chance, nor do they fall by accident. They are governed by laws written into the very fabric of existence, laws that God revealed so that we might take heed and not be deceived by appearances.”

He opened the Qur’ān and recited in a voice that drew the past and the future into the present:

﴿وَتِلْكَ الْأَيَّامُ نُدَاوِلُهَا بَيْنَ النَّاسِ﴾ (سورة آل عمران: 140)

“These are the days that We alternate among the people.” (Qur’ān, Āl

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(*Imrān* 3:140)

﴿إِنَّ اللَّهَ لَا يُغَيِّرُ مَا بِقَوْمٍ حَتَّى يُغَيِّرُوا مَا بِأَنْفُسِهِمْ﴾ (سورة الرعد: 11)

“Indeed, God does not change the condition of a people until they change what is in themselves.” (Qur’ān, al-Ra’d 13:11)

He paused, letting the words fall into their hearts like seeds into fertile soil. “Here is the divine algorithm of history: transformation begins within before it manifests without. Decline begins in the soul before it shows in the state. Renewal, too, begins in the unseen depths of a people’s will before it blossoms into their destiny. This, my sons, is the sequence that governs nations, as exact as the law that governs the birth of man.”

The Imam turned another page of the Qur’ān with reverent hands. His eyes glimmered as he spoke:

“Yes, Ya ‘qūb, and here lies the most wondrous truth! The Qur’ān teaches us that history has *sunan*—fixed patterns, divine algorithms—that stand as steadfast as mountains. They do not change, nor do they alter. Look, for example, at the algorithm of destruction for unjust nations, repeated in the Book as regularly as the rising and setting of the sun.”

He recited with solemn force:

﴿فَكَذَّبُوهُ فَعَقَرُوهَا فَذَمْدَمَ عَلَيْهِمْ رَبُّهُمْ بِذُنُوبِهِمْ فَحَسَّاهَا﴾ (سورة الشمس: 14)

“...but they rejected him and hamstrung her. So their Lord crushed them for their sin and levelled them.” (Qur’ān, al-Shams 91:14)

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The words rang like thunder. In the silence that followed, the students felt as if they were not only studying numbers, but glimpsing the very pulse of history itself.

“The sequence is as clear as day, my sons,” the Imam said, his voice steady as a mountain. “First comes denial of the messengers and the truth, like the planting of a poisoned seed. Then follows the criminal act—the hamstringing of the she-camel, a symbol of arrogance and rebellion. After that comes the descent of punishment, the fruit of divine justice ripened by persistent wrongdoing. It is not accident but logic. This sequence repeats itself in the stories of the nations—Noah, ‘Ād, Thamūd—so that we may know history is not chaos, but a divine algorithm unfolding in precise order.”

Ismā‘īl leaned forward, his voice alive with curiosity, like a merchant glimpsing the promise of a new market. “And do we find this principle in our daily acts of worship as well, master—or is it only for the cosmos and the great pages of history?”

The Imam’s eyes softened. His tone became gentle, yet firm with certainty:

“Indeed, my son, you find it most of all in worship. For what is worship but the discipline of sequence—the arrangement of steps by which the soul ascends to its Lord? The Qur’ān does not leave prayer, fasting, or pilgrimage to chance. Each is ordered as a stage in a path, so that no one step can be brought forward or delayed without corrupting the whole. This is the algorithm of worship and law: a divine sequence that joins heaven to earth, law to soul, beginning to end.”

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He opened another page of the Noble Book with reverent hands. “Yes, Ismā‘īl. Worship in Islam is not chaos, but a system that cultivates discipline and wisdom, as if it builds a strong heart step by step. Consider, for example, the algorithm of ablution (wuḍū’), in which God reveals to us the secret of order.”

He recited, his voice flowing like a river of clarity:

﴿يَا أَيُّهَا الَّذِينَ آمَنُوا إِذَا قُمْتُمْ إِلَى الصَّلَاةِ فَاغْسِلُوا وُجُوهَكُمْ وَأَيْدِيَكُمْ إِلَى الْمَرَافِقِ وَامْسَحُوا بِرُءُوسِكُمْ وَأَرْجُلَكُمْ إِلَى الْكَعْبَيْنِ وَإِنْ كُنْتُمْ جُنُبًا فَاطَّهَّرُوا وَإِنْ كُنْتُمْ مَرْضَى أَوْ عَلَى سَفَرٍ أَوْ جَاءَ أَحَدٌ مِنْكُمْ مِنَ الْغَائِطِ أَوْ لَامَسْتُمُ النِّسَاءَ فَلَمْ تَجِدُوا مَاءً فَتَيَمَّمُوا صَعِيدًا طَيِّبًا فَامْسَحُوا بِوُجُوهِكُمْ وَأَيْدِيكُمْ مِنْهُ مَا يُرِيدُ اللَّهُ لِيَجْعَلَ عَلَيْكُمْ مِنْ حَرَجٍ وَلَكِنْ يُرِيدُ لِيُطَهِّرَكُمْ وَلِيُتِمَّ نِعْمَتَهُ عَلَيْكُمْ لَعَلَّكُمْ تَشْكُرُونَ﴾ (سورة المائدة: ٦)

“You who believe, when you are about to pray, wash your faces and your hands up to the elbows, wipe your heads, and your feet up to the ankles. If you are in a state of major impurity, cleanse yourselves. But if you are ill, on a journey, have relieved yourselves, or had intercourse, and cannot find any water, then find some clean sand and wipe your faces and hands with it. God does not wish to place a burden on you; He wishes to cleanse you and perfect His blessing on you, so that you may be thankful.” (Qur’ān, al-Mā’idah 5:6)

The Imam closed the Book gently and looked at the circle. “Here is the divine sequence in its clearest form: face, then hands, then head, then feet. Not reversed, not scattered, but ordered, like steps on a ladder. This is how the body is purified, and this is how the soul learns discipline. Sequence, my sons, is the path by which worship lifts the believer to God.”

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“The conjunction ‘*and*’ here,” the Imam said, his finger resting on the sacred text, “as the scholars of language and exegesis teach us, signifies order and sequence, like a chain of gold. Each link follows the one before it. These are steps that cannot be skipped, nor can their order be reversed.

The washing of the face comes before the hands, the hands before the wiping of the head, and the head before the feet. This is not an accident, nor mere style—it is a divine arrangement that purifies the body and the soul step by step.

And through this order, my sons, worship itself becomes a system—a living algorithm—that shapes the human being from within, just as calculation shapes order from without. One builds the inner world of the heart, the other builds the outer world of society. Together, they make life whole.”

The Imam’s eyes softened, and he leaned forward as though confiding a secret.

“Imagine, my sons,” he said, “a worker who is eager to build his house. In his haste, he sets the roof before laying the foundation, and the walls before carving the doors. What do you think will happen to his house?”

The students exchanged knowing glances. The young boy at the edge of the circle whispered, “It will collapse, master.”

“Exactly,” the Imam said, his voice firm but gentle. “Because he ignored the sequence that gives strength to the whole. A foundation must come before the walls, and the walls before the roof. Each step has

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its place, and if the order is broken, the structure is ruined.

So too with worship: you cannot wash the feet before the face, nor bow in prayer before you stand. And so too with calculation: you cannot subtract before you add, nor divide before you multiply. Sequence is the secret thread that binds every act into harmony. Without it, worship collapses into chaos, and calculation dissolves into error.”

The students sat in silence, the parable imprinting itself on their minds. They felt that what they had just learned was not only a lesson in numbers, nor even in ablution, but in the very art of living—an art built step by step, like a house rising stone upon stone.

Lesson 8: The Algorithms of Condition and Branching

The Art of Decision-Making

The next day Ismā‘īl returned to the Imam’s circle, yet this time his face bore not the fury of a storm shaking the trees but the unease of a traveler confronted by a fork in the road. He pressed his wax tablet tightly to his chest, as though it carried a riddle gnawing at his thoughts. The chamber was thick with the fragrance of Arabian incense, its smoke curling in pale ribbons that vanished into the high arches above. Sunbeams pierced the latticework screens, spilling across the mosaic floor in tangled patterns, as if the very light were sketching maps of hidden destinies.

Within that shifting glow, Ismā‘īl’s question seemed to take shape: how does one choose the right way when numbers, like roads, diverge?

His voice trembled with both urgency and confusion. “Abū ‘Abdullāh, the algorithm of sequence has been to me like rain reviving parched earth. My calculations now flow swifter than the wind. But today I faced a problem I could not solve, and it is consuming my peace of mind like a raging fire!”

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He lowered the tablet and scratched upon it with his trembling stylus. “A merchant came with a strange bargain. He said, *If your purchase is small, each roll of silk will cost you ten dirhams. But if you buy more than fifty rolls, I will give you a discount, and the price per roll will be nine dirhams—for your sake!*” Tell me, how can I place this condition inside an algorithm? It is not one straight path, but two. It is as if the numbers themselves must think and choose like a man standing at a crossroad!”

Ya‘qūb leaned forward, his eyes glinting with sharp logic. “This is no mere calculation, Ismā‘īl,” he said, his voice cutting the air like a sword. “It is a deeper puzzle. You are describing two states, like dawn and sunset. Each leads to its own consequence. Numbers cannot decide on their own. They are like stones lying still, until a hand moves them.”

At that, the Imam intervened with his usual calm that stilled the storm. His eyes fell upon them with the warmth of a father gathering his sons.

“Ya‘qūb, you are right that numbers do not choose,” he said softly, “but you forget that the ability to choose is the essence of what distinguishes a rational being from a cold machine. It is the secret of the freedom with which God has honored humanity. Our task is not to make numbers think like men, but to use numbers to clarify our own decisions—as though we are writing a divine law that proceeds with wisdom.”

The Imam then turned to Abū ‘Abdullāh and added, his voice carrying the weight of the heavens, “Life, my son, is not a straight line upon which we walk like a blind man following a path. It is a series of forks in the road, and at every fork lies a choice that determines destiny,

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like a river that branches into streams, each taking a different course. And the greatest branching God placed in the heart of human existence is what He alluded to in His words:

﴿وَهَدَيْنَاهُ النَّجْدَيْنِ﴾ (سورة البلد: ١٠)

And showed him the two high paths. (Qur'an, Al-Balad: 10)

“These are the two supreme branches: the paths of good and evil, truth and falsehood. From the very core of the human soul, the tree of life divides. And the Qur'an—verse after verse—is a guide through these branches, teaching man which path leads to ruin and which to salvation. The logic of branching is not merely a tool in calculation; it is the law of responsibility and choice that governs all of life.”

The Imam's hands trembled with awe as he opened the Qur'an and recited in a voice that drew silence over the circle like a great cloak:

﴿فَأَمَّا مَنْ ثَقَلَتْ مَوَازِينُهُ * فَهُوَ فِي عِيشَةٍ رَاضِيَةٍ * وَأَمَّا مَنْ خَفَّتْ مَوَازِينُهُ * فَأُمُّهُ هَاوِيَةٌ﴾ (سورة القارعة: ٦-٩)

Then he whose scales are heavy will have a pleasant life, but he whose scales are light will have the Abyss as his mother. (Qur'an, Al-Qāri'ah: 6–9)

The words sank into the students like thunder rolling across a silent valley. They could almost see the scales rising and falling, heavy with deeds or empty with neglect, each outcome pulling a soul to its fate.

The Imam lifted his gaze, his voice rising with solemn power. “Do you see, my sons? This is a conditional system as clear as the day that follows the night. The condition is the weight of deeds upon the

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divine scale. The branching is the two outcomes: one road to eternal bliss and contentment, the other to the dark abyss. This is no metaphor only for the afterlife—it is a rhythm that beats in every decision of your lives. Every fork is a test, every choice a seed of destiny. And you, Abū ‘Abdullāh—your task is to teach the numbers how to follow this law. You must train your algorithms to walk like men at the crossroads: to ask, to weigh, to decide.”

A new light kindled upon Abū ‘Abdullāh’s face, shining like the sun breaking free from behind dense clouds. He seized the tablet and inscribed upon it in bold, deliberate strokes: *The Second Pillar of the Algorithm: Condition and Branching.*

His voice surged with enthusiasm, flowing like a river freed from its banks. “For the algorithm to resemble the intelligence of man—who walks his path and chooses his destiny—it must possess the power to ask and to judge. It must be able to say: *if this is true, then take this path; but if not, then another.* In this lies its likeness to thought itself, a decision-making that bends and turns with justice, opening doors to different fates.”

He turned to Ismā‘īl and quickly drew upon the tablet the figure of a tall tree, its trunk straight and strong, its branches dividing like roads in the desert. “Here, my friend, is your bargain woven into the logic of a tree. At the start it is one trunk, firm and straight. But at the fork, the path divides into branches. Each branch leads to its own fruit—profit, loss, or balance—depending on the choice that is made.”

Ismā‘īl leaned so close his nose almost touched the wax. His eyes widened as though a locked chest had been opened. “It is as if the tree itself speaks!” he cried. “One branch says: *if greater than fifty, go this way; if*

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fewer, go that way. The bargain is no longer confusion—it is order!”

At that moment the Imam added a parable, his voice deepening with gravity.

“Imagine, my sons, a caravan in the desert. The leader comes to a fork in the dunes. To the left lies a short but perilous path, where water is scarce. To the right lies a longer path, winding by oases. If the waterskins are full, the caravan bravely takes the short road and arrives swiftly. But if their skins are nearly empty, they must take the longer path or perish. Do you see? The road itself is not random; it waits for the condition. The condition makes the choice, and the choice seals the fate.”

The young boy at the edge of the circle clapped his hands in delight. “It is alive!” he exclaimed. “Like the caravan—numbers now decide their road, too!”

The Imam nodded. “Yes, my child. That is the essence. Branching is the law of responsibility written into life itself, now captured in the tongue of numbers.”

Ismā‘īl rejoiced, clapping his hands with the glee of a boy who has just discovered a hidden toy. “Now I have a recipe for every situation, like a doctor who knows the cure for each illness and applies it where it is needed! Calculation is no longer a straight line—it is a tree that branches and bends according to need!”

Ya‘qūb leaned forward, his voice hushed in wonder. “This is not calculation, Abū ‘Abdullāh. You have given numbers the breath of logic and choice. This is philosophy itself made alive.”

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The Imam's face lit with pride, and his words poured forth like a river over fertile land. "Well done, my sons. You have discovered the second pillar of the great algorithm. For a mature algorithm does not stumble blindly in a straight line. It looks, it thinks, it asks, it chooses. It branches according to the condition placed before it, just as the rational soul chooses its destiny between the two high paths—the path of good and the path of evil—and seeks the light of revelation to travel the road of truth."

The students sat back in awe. In their minds they saw not only numbers dancing on a wax tablet but caravans in deserts, nations at crossroads, and souls at judgment, all standing before the fork of destiny.

Lesson 9: The Algorithms of Repetition and Looping

The Secret of Continuation and Permanence

Abū ‘Abdullāh now held firmly in his grasp the first tool—**Sequence**, and the second—**Condition and Branching**. Yet a greater discovery awaited him, one that would reveal the hidden pulse of algorithms: the power of **Repetition and Looping**. It was as if he stood at the rim of a well whose waters never ran dry, about to uncover the secret of life itself, which moves in unending cycles—day and night, season after season, birth followed by death and then new birth.

That afternoon, the Imam’s circle hummed with restless murmurs. A problem had been posed, one that seemed simple yet quickly tangled into knots: how to divide the labor of one hundred workers across days and tasks without drowning in endless calculation. The students bent over their tablets, writing furiously, scratching out errors, starting again, only to collapse into sighs of despair. The floor around them glittered with broken bits of wax, as though the very dust bore witness to their struggle.

And then, Ismā‘īl entered with a storm on his face, carrying frustration so heavy it seemed as though he bore a mountain upon his shoulders. He waved a bundle of wax tablets in the air, their surfaces

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crammed with the same number repeated again and again, like a drumbeat that would not stop. The air in the chamber was thick with the musk of old books and parchment, and as the sunlight spilled through the latticework windows, it painted circles of light across the mosaic floor, as if heaven itself were hinting at the secret of repetition.

Striking his tablet with his trembling hand, Ismā‘īl cried, “My brothers, we are making progress by God’s grace, but life throws new burdens every day, testing our patience and our minds! Today I was faced with a simple matter—or so I thought. I had to distribute the wages of one hundred workers in my new workshop. Each man’s due is three dirhams for a day’s labor. I began to add: three plus three plus three plus three... and the chain went on without end, like the desert sand stretching to the horizon!”

His breath came ragged as his anger rose. “I filled two whole tablets with the number three, and still the total mocked me, as if I were chasing a mirage in the desert. The method is not wrong, but it is tedious, long, and riddled with chances for error, like a caravan traveling a road filled with thieves. Tell me, is there no smarter way—no method that allows the work to repeat itself without my having to write it a hundred times?”

The students looked at one another in silence. Some shook their heads in sympathy; others pressed their lips tight, feeling the same weight in their own struggles.

At last Ya‘qūb, always eager to probe deeper, said, “This is not simply a problem of numbers, Ismā‘īl. It is a riddle of nature itself. All things in life repeat—the rising of the sun, the flowing of rivers, the

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circling of the stars. Yet we do not count each sunrise one by one to measure the year; we use cycles, loops, patterns. Perhaps numbers too must be given a way to cycle, so that their steps are not wasted but return again and again with purpose.”

The Imam raised his hand, and the murmurs ceased. His calm voice filled the chamber like the stillness after a storm. “You are both right. Life itself is built on repetition. God has woven it into the very fabric of creation, so that permanence might be born from cycles. The Qur’an teaches us this wisdom not once, but by repeating its lessons over and over, until they are etched into the heart. Listen to His words:”

﴿وَلَقَدْ صَرَّفْنَا فِي هَٰذَا الْقُرْآنِ لِيَذَّكَّرُوا﴾ (سورة الإسراء: ٤١)

“We have varied the ways of saying things in this Qur’an, so that they might take heed.” (Qur’an, Al-Isrā’: 41)

The Imam lowered his gaze toward Ismā‘īl. “Do you see? The message is one, but its telling is many. Repetition is not weakness—it is the method of permanence.”

Then Abū ‘Abdullāh leaned forward, eyes bright with sudden insight. He scratched swiftly across a clean tablet. “If we must add three a hundred times, then we must build a cycle that repeats the act of addition until the task is complete. Instead of writing three + three + three, we tell the algorithm: add three, then repeat this act a hundred times. The loop itself will carry us to the end without our hands growing weary.”

He paused, and then, to make the point shine brighter in their

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minds, he told a parable.

“Imagine a man hired to fill a cistern with water. Foolish is the one who carries a single cup back and forth, a hundred times, wasting strength with every trip. But the wise man fashions a wheel and a rope. With each turn of the wheel, the bucket descends, fills, and rises again. The act is the same, but the loop carries it endlessly, until the cistern brims with water. That wheel, my friends, is the loop of the algorithm.”

The students’ eyes widened as the image gripped them: the wheel, turning again and again, transforming struggle into effortless flow.

Abū ‘Abdullāh raised his stylus high. “So too with your problem, Ismā‘īl. Each loop adds three to the total, and the loop turns one hundred times. The result is three hundred dirhams, written once, not a hundred times.”

Ismā‘īl’s scowl melted into a smile of astonishment. He laughed aloud, his voice echoing against the stone arches. “It is as if I had been carrying cups of water back and forth, and you have now given me the waterwheel itself! The loop does the work while I rest!”

The Imam’s face glowed with pride. “And this, my sons, is the third pillar of the algorithm: Repetition and Looping. It is the secret of continuation, by which short steps grow into vast journeys, and by which fleeting actions build enduring structures. As life itself repeats the rising of the sun, so too must your algorithms repeat their steps—until clarity, justice, and completion are attained.”

Ya‘qūb leaned forward, his sharp eyes glinting, and said with his

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cutting intelligence, “You could use multiplication, Ismā‘īl. It is faster and more precise. Three times one hundred equals three hundred dirhams, and the matter is finished!”

Ismā‘īl shook his head, his confusion only deepening, and he struck his tablet with the stylus as if to drive out his frustration. “Yes, Ya‘qūb, but what if the task is not so simple? What if I must repeat the same process a hundred times, but each time with a slight difference—one worker leaves early, another works double hours, another rests on Fridays? Shall I write out the same steps again and again like a scribe copying the same letter until his hand grows numb? Will I waste time as the workers wait for their wages like starving men gathered before a pot that never boils?”

The young boy at the edge of the circle piped up, his face eager with innocence. “It is like when my mother sends me to fetch water,” he said. “If I carry one small cup at a time, I must walk the same path again and again until my legs ache. But if we had a wheel with buckets tied to it, the water would rise and fall by itself in a repeating motion, and the cistern would fill while I stand and watch!”

The Imam’s face softened at the boy’s words, and he lifted his gaze to the sky through the carved windows of the mosque. Sunlight streamed down like a river of gold, and his calm voice carried the secret of the whole cosmos. “Abū ‘Abdullāh,” he said, “look at the movement of the universe. God did not create a new sun for each day that dawns. He created one sun, and by His command it rises and sets in a cycle that repeats without end, as if each day were a verse returning to its beginning to be recited anew. And He did not create a new heart for every beat in your chest. He created one heart, and it contracts and expands in a

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rhythm, a repeating action that preserves life itself.”

He lowered his gaze back to the circle, his voice gaining weight. “Repetition is not a boredom that crushes the soul. It is the very secret of permanence, stability, and endurance. It is the hidden strength that builds mighty structures from the smallest bricks, and civilizations from the simplest acts.”

The Imam paused, then raised his hand toward the heavens, his eyes glimmering with both challenge and hope as he looked upon Abū ‘Abdullāh. “God built the universe upon great repetitive algorithms that revolve like the celestial spheres. Contemplate His words, may He be exalted, in Sūrat al-Nūr:”

﴿يُقَلِّبُ اللَّهُ اللَّيْلَ وَالنَّهَارَ إِنَّ فِي ذَلِكَ لَعِبْرَةً لِّأُولِي الْأَبْصَارِ﴾ (سورة
النور: ٤٤)

“God alternates night and day: truly there is a lesson in this for those who have eyes to see.” (Qur’an, Al-Nūr: 44)

“And in Sūrat Yā-Sīn, He says:”

﴿وَكُلٌّ فِي فَلَكٍ يَسْبَحُونَ﴾ (سورة يس: ٤٠)

“...each swims in its own orbit.” (Qur’an, Yā-Sīn: 40)

The chamber grew silent. The students could almost feel the orbit of the stars above them, the rhythm of their own beating hearts within their chests, and the endless rising and falling of the sun beyond the mosque walls. They began to see that repetition was not a burden—it was the breath of existence itself.

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Abū ‘Abdullāh’s hand tightened on his stylus, and a new fire kindled in his eyes, as if a door had just opened to an unseen treasure.

A spark leapt in the Imam’s eyes. “Your mission now, Abū ‘Abdullāh,” he said, excitement spreading like fire along dry grass, “is to teach this wooden tablet the art of repetition, so it turns as the heavens turn and completes great tasks with one simple step—performed again and again.”

Abū ‘Abdullāh took the tablet. Insight broke over his face like sun from behind dense cloud. With firm strokes he wrote: *The Third Pillar of the Algorithm: Repetition and Loop.*

He lifted his head, voice rushing like a river in flood. “We will not write the same step a hundred times, Ismā‘īl. That is a journey without rest that devours a man’s strength. We will write it once—then bid it repeat, just as the heart beats ceaselessly in the chest. Yet even the heart, though faithful, is bounded. So our loop must also have a limit: a stopping condition, a destined end, so that repetition bears fruit and does not whirl into vanity.”

He leaned forward and, with the tip of his stylus, drew a great circle—so smooth it seemed to turn of its own accord, like the starry sphere above them. “Behold,” he said to Ismā‘īl, eyes alight, “how the order of the universe fits in your hand.

“We begin at the dawn: empty boxes, clean accounts. Set two small keepers in your mind—one I call the *worker counter*, beginning at zero, and one the *money box*, also at zero. Then let the circle turn. As long as the counter is less than one hundred, you perform two beats of the

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heart: add three dirhams to the money box with justice and precision, then add one to the worker counter so the count advances a single step. When the counter reaches one hundred, the day sets; the circle comes to rest. What remains in the money box? Three hundred dirhams—the fruit of patient turning.”

Ismā‘īl watched the chalk-white circle glow under the afternoon light, his breath caught. “It... turns,” he whispered. “And with every turn the sum grows.”

“To make it unforgettable,” the Imam said, voice low and steady, “listen to a parable.”

They leaned in.

“In the quarter of the weavers there lived two brothers,” he began. “The elder was strong but impatient. When a rich man ordered a bolt of silk, the elder tried to weave by force—one wild sweep of the shuttle after another, breaking threads, knotting patterns, starting over until his hands bled. He worked like a man lifting a cistern stone with bare fingers. At day’s end he had little more than tattered cloth and anger.

“The younger brother was slender and calm. He measured the warp, tied it true, then set the loom in motion. *Tap—shuttle—beat. Tap—shuttle—beat.* The movement was simple, the same three strokes—repeated. He did not hurry; he did not stop. He merely *looped*. As the sun crossed the sky, the pattern blossomed from repetition: roses and crescents appearing where once there had been only threads. At dusk he rolled a river of silk around the beam and carried it home light as

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a promise.

“Tell me, my sons—who wove the better cloth?”

“The younger,” the boy breathed, eyes shining.

“Why?”

“Because he found the wheel,” said Ya‘qūb softly, “and let it turn.”

Abū ‘Abdullāh smiled. “Our loop is that wheel. And now, Ismā‘īl, hear how it answers your deeper worry—when each worker differs and the world refuses to be uniform.”

He turned the tablet and drew the circle again, this time placing a small doorway within it. “We have already learned the pillar of *Condition*. Put it inside the turning. For each worker, as the loop goes round, we ask a just question. *If* he has overtime, then add his extra pay; *else* add the base wage only. The circle does not grow confused; it simply bends to the condition and keeps turning until all have been paid.”

He spoke the steps like a quiet chant, and the students felt the pattern settle into them:

“We begin with the counter and the money box at zero. We enter the circle. We look upon a worker’s name. If his hours exceed the set line, we add the base wage and the fair increase; if not, the base wage alone. Then we step the counter forward by one...and the wheel turns again. When the hundredth name has passed beneath our stylus, the circle closes. The coffer balance, the hands are satisfied, and no man waits

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hungry by the door.”

Ismā‘īl laughed, relief bright in his face. “So the loop is a loom—and inside its rhythm live the judgments of the market, like colored threads! One turn, one wage; a hundred turns, a hundred wages; and all without stumbling.”

The Imam’s gaze warmed. “You see now why repetition is not boredom but power. It is dhikr in craft: a remembrance of the right act, performed until excellence appears.”

Ya‘qūb nodded slowly. “And Sequence, Condition, and Loop—each takes its rightful seat. First the order, then the branch, then the turning.”

Abū ‘Abdullāh lifted the tablet so the circle of the loop caught the light. “Remember its law: *start clean, repeat with purpose, stop with honor*. Do this, and small steps will raise great palaces.”

Silence gathered like velvet. In the stillness they could almost hear the hidden wheels of the world—the heart beating, the sun returning, the loom’s shuttle whispering—each obeying its loop, each building permanence from a simple, faithful motion.

Ya‘qūb’s voice trembled with awe, his sharp logic now softened by wonder. “This is not merely a saving of time, Abū ‘Abdullāh,” he said, his eyes fixed on the circle traced upon the tablet. “This is a leap in the very nature of thought itself. It is as though you have breathed into numbers the secret of eternal rotation! You have made the tablet into a living machine—capable of doing the work of a thousand men with a

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single command, and repeating it without fatigue or boredom, like the planets that swim in their orbits forever, each turn as steady as the one before it.”

The circle of students fell hushed, their imaginations ablaze. They could almost see it: the heart of the universe pulsing with unseen loops, the stars circling in their orbits, the ocean waves striking the shore in endless rhythm.

And then the Imam spoke, his voice flowing with a clarity that quenched their thirst like cool water after a desert march. “Well done, my sons,” he said, his gaze sweeping across their eager faces. “Today you have uncovered a secret that the ancients only dimly grasped—that organized repetition is the forge where power is born. Look at the drop of water: weak and frail, softer than silk. Yet by falling in faithful repetition, it cuts through solid rock, a miracle of patience. Look at the farmer: he sows a single seed, but through the repetition of sun and rain, it becomes a harvest that feeds nations. Look at the worshipper: a single prostration may seem small, but repeated day after day, prayer after prayer, it builds a bridge between man and his Lord that no storm can sweep away.”

He paused, and his eyes glimmered with deep joy. “This is the secret of permanence and power in the universe, in calculation, and in worship. It teaches us that greatness does not descend in a sudden lightning strike—it rises slowly, faithfully, like dawn breaking over the horizon. Not all at once, but through the patient and faithful repetition of the simple.”

The incense curled upward in pale ribbons, as if even the smoke

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itself obeyed the law of looping. The students sat in stillness, their hearts beating in rhythm with the truth they had just heard, each pulse whispering the same secret: *repeat... repeat... repeat... until greatness is born.*

The Imam leaned forward, his voice lowering into that tone he used when he wanted to carve a truth deep into their hearts.

“Let me tell you a story, my sons. In a faraway village, there lived two brothers who wished to cut through a great mountain of stone that blocked the water of a spring from reaching their fields.

The elder brother, proud and hasty, took a massive hammer and struck the mountain with all his strength, once, twice, thrice, until his arms shook and his chest heaved. But the mountain mocked him, unmoved, and he fell to the ground in despair.

The younger brother, weaker in muscle but stronger in patience, picked up a small chisel. He struck the rock—*tap, tap, tap*—so lightly that the elder mocked him, saying, ‘You will die before you move a single stone.’

But the younger one smiled and continued: *tap, tap, tap*. Day after day, season after season. The villagers laughed at his stubbornness, the children teased him, yet he did not stop.

Years passed. His arm grew hard as iron, and his spirit unshakable. Then one morning, as the sun broke over the horizon, the mountain groaned—and split. The spring burst forth, rushing into the fields, and the village bloomed like a garden of paradise.

The people wept, for they saw that the weak brother, through

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repetition, had accomplished what the strong could not. And they said: “Truly, greatness does not come from one mighty strike, but from the thousand faithful taps that never stop.”

The Imam raised his eyes, and the chamber was silent but for the sound of their own breathing. “Do you see, my sons? This is the law of repetition. What one blow cannot do, ten thousand faithful ones will achieve. The same is true for your hearts, your prayers, your learning, and your numbers. One step repeated builds a road across the desert. One verse repeated engraves faith into the soul. One algorithm repeated becomes the power of a new civilization.”

Ya‘qūb’s sharp eyes were softened with awe. “So repetition,” he said slowly, “is not boredom, but the very breath of life.”

Ismā‘īl clapped his hands in wonder, his face bright as a child’s. “It is like the loom in my stall, master! A single thread means nothing. But when the shuttle passes back and forth, back and forth, repeating the same movement a thousand times, a whole tapestry is born—beautiful, strong, and priceless.”

The Imam’s face glowed with pride. “Yes, Ismā‘īl. That is the secret. Repetition is the loom upon which God weaves the fabric of the world.”

Lesson 10: The Algorithms of Structure and Symmetry

The Design of Existence and Numbers

The Architect – Characteristics of a Strong System

The students gathered once more in the Imam's circle, their hearts still echoing with the rhythm of the three pillars they had learned: Sequence, Condition, and Repetition. Those lessons had become to them like three columns rising in their souls, holding up a vast edifice of thought. Yet something felt unfinished, like a palace lacking its crowning dome. They sat in the mosque beneath towering arches, where shadows of the stone columns stretched long across the patterned floor, and the hush of the chamber felt heavy with secrets.

It was Ya'qūb who broke the silence, his logical mind cutting into the air like a diver plunging into deep waters. "Master Imam," he said, "we now understand how to build a series of commands, to make them branch and to make them repeat, as if they are alive—thinking and acting. But tell us: are there deeper laws that govern the very *form* of these structures? What makes an algorithm not only correct, but also strong and beautiful, like a palace whose harmony defies the winds?"

The Imam's smile flickered, slow and radiant, as though he were

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drawing back the curtain from a hidden treasure chest. His voice flowed with calm power. “A question worthy of one who moves from the hand of a craftsman to the vision of an architect. Yes, my son, there is such a law—a root from which all branches drink. It is the principle that makes existence itself harmonious and enduring, the principle of *Structure and Symmetry*. Without it, your work collapses like a roof without pillars. With it, your algorithms gain both strength and elegance, as the cosmos itself was given balance.”

He raised his hand toward the great arches of the mosque. “Look around you, my sons. What do you see? Not chaos of stones stacked in confusion, but an order that delights the eye and steadies the heart. Each column mirrors its brother, each arch answers another, the lines of the tiles repeat in rhythm until the entire building breathes one harmony. That is structure. That is symmetry. It is not ornament; it is the hidden law that makes the building stand.”

The students followed his gaze upward, and for a moment they felt the building itself teaching them—the pillars like equations, the arches like curved parentheses sheltering meaning, the patterned tiles like loops repeating across the earth.

To press the truth deeper, the Imam told them a parable.

“Once,” he said, “a king commanded two builders to raise him a dwelling. The first builder gathered stones quickly, stacking them into walls without plan, piling them higher and higher. From afar it seemed like a fortress, but inside it was crooked and weak. When the first storm came, the walls shuddered, and the roof cracked open like a shell.

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The second builder, slower and more patient, began by drawing lines in the dust—measuring, balancing, testing. He laid each stone so that it mirrored its brother, every corner facing true, every arch answering its pair. The people mocked him, saying, ‘He wastes time drawing shapes in dust while the other builds a castle!’ But when the storm came, the crooked house fell while the second shone like a lantern, firm and symmetrical, standing against wind and time.

Tell me, my sons—which builder left behind a dwelling fit for generations?”

“The second,” they murmured.

The Imam nodded. “So it is with algorithms. It is not enough to pile steps one atop another. You must shape them in balance, in harmony, in symmetry—so that they endure storms of error and shine with clarity.”

He paused, then turned his gaze to Abū ‘Abdullāh. “This, my son, is your first lesson in the architecture of systems. Do not think of your algorithms as bare tools only. Think of them as houses you build for the mind—houses into which others may enter and dwell. If their form is crooked, the guest stumbles and mistrusts the roof above him. If their form is strong and symmetrical, the guest finds peace and beauty, and your science becomes a lantern to the generations.”

The circle fell silent, the students holding their breath as though they had been invited into the foundations of creation itself. For in that moment they realized: the final pillar was not a mere technique. It was the very design of existence mirrored in the design of numbers—the

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symmetry of the cosmos reflected in the symmetry of thought.

And then the Imam reached beside him and took two stones—one white as light, the other black as night. He placed them gently on the ground before the circle, side by side, as if drawing the very first two letters of the language of existence.

His eyes swept over the gathering, and in a voice heavy with mystery he asked, “What do you see, my sons?”

Ismā‘īl spoke first, quick and practical, as merchants often are. “Two different stones, master,” he said, “like night and day. One shines like silver, the other is dark as coal.”

Ya‘qūb leaned forward, his logical sharpness cutting into the question. “I see more than stones. I see two opposites—white and black, presence and absence, truth and falsehood set side by side upon the field of existence.”

Then Abū ‘Abdullāh, his eyes narrowing as if peering into the unseen, said softly, “And I see not two enemies, but a pair completing one another. Like two hands that clap together to make a sound, or two wings that lift the bird into flight. Each by itself is silent, but together they create harmony.”

The Imam’s face glowed with quiet satisfaction, and he nodded slowly. “You are all correct, my sons. But the understanding of Abū ‘Abdullāh touches the heart of the divine reality. God has built His creation upon the principle of pair-ness—*zanjīyah*. Nothing in existence stands alone. Everything comes in complementary pairs that define and

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complete each other: night and day, sun and moon, male and female, life and death, good and evil. Without darkness, we would not know the value of light. Without falsehood, truth would not shine as bright. Without death, life would not be precious.”

He lifted the two stones in his hands so the sunlight caught their surfaces. “These are not mere colors. They are the alphabet of creation itself: a two-letter language that writes the story of the universe. All that you see is written in this script of duality—positive and negative, increase and decrease, benefit and harm. And when you understand this script, you begin to read the design of God’s order.”

The Imam then let the stones fall together with a soft click, as though sealing his words. His voice deepened. “But remember, my sons—this principle of pairing is not meant to confuse you, but to remind you of the One who is above all pairs. Everything in creation is built upon complementarity, but your Creator is singular, indivisible, without equal or opposite. He alone is the Odd, the One, the Self-Sufficient. The Qur’an has taught us this truth so that we may take heed.”

He recited, his voice trembling with awe:

﴿فَاطِرُ السَّمَاوَاتِ وَالْأَرْضِ جَعَلَ لَكُم مِّنْ أَنْفُسِكُمْ أَزْوَاجًا وَمِنَ الْأَنْعَامِ أَزْوَاجًا يَذُرُّكُمْ فِيهِ لَأَيْسَ كَمِثْلِهِ شَيْءٌ وَهُوَ السَّمِيعُ الْبَصِيرُ﴾ (الشورى: 11)

“The Originator of the heavens and the earth. He created spouses from among yourselves for you, and spouses from livestock for you, so that you might multiply. There is nothing like Him. He is the All-Hearing, the All-Seeing.”
(Qur’an, Ash-Shūrā: 11)

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And again he recited:

﴿وَمِنْ كُلِّ شَيْءٍ خَلَقْنَا زَوْجَيْنِ لَعَلَّكُمْ تَذَكَّرُونَ﴾ (الذاريات: 49)

“And We created pairs of all things so that you [people] might take heed.”
(Qur’an, Adh-Dhāriyāt: 49)

The students sat in silence, their eyes fixed on the white and black stones, as though they were no longer stones but mirrors of the heavens and the earth. In their hearts they began to sense that the final pillar of algorithms—Structure and Symmetry—was not a cold rule of numbers, but the very reflection of the universal law by which God shaped existence: a law of balance, complement, and harmony.

And then Abū ‘Abdullāh lifted his tablet as though it were a mirror catching a sudden ray of truth. His voice trembled with the thrill of discovery, carrying the joy of a man who had stumbled upon a hidden treasure beneath the sands.

“Do you not see, my brothers?” he said, his eyes alight. “If the whole universe is built upon two harmonious opposites—day and night, light and darkness, life and death—then perhaps all the world of calculation can also be built from just two opposing signs! Like existence and nothingness, like presence and absence... the one and the zero! Two marks, simple and opposite, yet together they might weave the infinite tapestry of numbers and give birth to every structure of knowledge!”

The words fell upon the circle like thunder rolling across a valley.

Ya‘qūb, struck to his core, turned pale, his lips parting as though he had glimpsed a secret veiled even from the philosophers of old. His

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voice quivered between awe and disbelief. “Abū ‘Abdullāh... this defies imagination! Do you mean to say that the endless sea of numbers—their towering mountains, their hidden depths—can all be reduced to a language of only two signs? Zero and one? As if the cosmos itself were whispering in a secret tongue of duality, weaving every form, every law, every pattern of existence out of this twin alphabet?”

The chamber grew still. Even the incense seemed to pause in its upward dance, its smoke curling like a question mark in the air.

Ismā‘īl leaned forward, his merchant’s instinct awakened like a hawk catching the scent of unseen prey. His eyes glittered with both excitement and hesitation. “Master,” he said, “this is deep talk indeed, enough to shake the soul. But how shall we touch it with our hands? How does this mystery of even and odd, of one and zero, enter the reckoning of dirhams and dinars that flow daily through our ledgers? How does it meet us in the marketplace, where numbers walk in the dust and not among the stars?”

The Imam smiled gently, like a gardener watching the first blossoms of spring. Taking Abū ‘Abdullāh’s tablet, he drew a sequence of numbers, arranging them with care so they shone like mirrored tiles in a mosaic.

“Look closely,” he said, his voice calm yet resonant with hidden depth. “The principle of pair-ness is not far from you. It is carved into the very body of numbers, as though God Himself inscribed it upon the stone of existence. Numbers divide themselves into two eternal families, with no third between them: the family of the even, and the family of the odd. This division is so great, so fundamental, that God Almighty swore

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by it, to teach us that it is one of the pillars upon which creation stands.”

He raised his hand and recited, his voice carrying the solemn weight of an oath:

﴿وَالشَّفْعَ وَالْوَتْرَ﴾ (سورة الفجر: ٣)

“By the even and the odd.” (Qur’an, Al-Fajr: 3)

The words echoed against the stone arches, and the students felt as though the very pillars around them leaned closer to listen. In that moment, they understood: symmetry was not merely beauty in design—it was the law of balance that governed heaven and earth, number and soul, the market and the cosmos alike.

The Imam then turned to the circle, holding up two pebbles in his palm—one smooth and white, the other dark and rough. He placed them gently upon the tiled floor, side by side, as though inscribing the alphabet of existence. His voice flowed with calm gravity.

“The Even (*ash-shaf‘*, the paired),” he said, pointing to the two stones, “is every number that accepts a partner and divides by two without remainder: two, four, six, eight... These are numbers of integration and duality, like night and day, sun and moon, that follow one another in harmony and never fail.”

Then he lifted a single white pebble, holding it high so the sunlight caught its pale sheen. “The Odd (*al-witr*, the singular), is every number that remains unique, refusing to be halved: one, three, five, seven... These are the numbers of singularity and uniqueness, pointing to the truth of God, the One, the Self-Sufficient, who has no partner and

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no equal.”

The Imam’s eyes glistened, and his voice deepened with reverence. “All of creation is *even*—woven of pairs that complete each other. But the Creator, exalted is He, is *odd*—the One without likeness. Even the properties of numbers are signs, pointing beyond themselves to the Oneness of God.”

A hush fell. The incense rose in thin spirals, as if bowing to the truth just spoken.

Abū ‘Abdullāh leaned forward, his tablet pressed against his chest as though it carried the pulse of a revelation. His voice trembled with inspiration that surpassed science. “Then this distinction is not a shallow classification to be discarded, but the first unveiling of the *personality* of numbers—the secret of their inner structure. It is as though we have pierced the surface of the digits and glimpsed their spirit, their symmetry, their hidden meaning.”

A young boy at the edge of the circle, his eyes wide as moons, whispered, “Master, it is like the loom of my mother’s weaving. The threads are of two colors—dark and light. Without both, the cloth would be plain. But together, they form patterns so beautiful they seem alive.”

The Imam’s face softened, and he nodded with approval. “Yes, my child. That is the parable. Even and odd are like warp and weft, weaving the fabric of existence. And the One who stands above them is the Designer who needs no thread.”

He then turned back to Abū ‘Abdullāh, his words flowing like a

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fresh river that quenches the thirsty. “Well done, my son. You have now reached the final pillar of the great algorithm: Structure and Symmetry. For a true algorithm is not merely steps to follow, branches to choose, or loops to repeat—it is an *architecture*, harmonious and balanced, like the universe itself. Its strength lies in symmetry, its beauty in proportion, its wisdom in reflecting the order of creation. Whoever builds with this pillar does not fashion a cold machine, but a living edifice, radiant with the beauty of balance. And upon such harmony, civilizations are raised that endure the test of time.”

The students sat in awe beneath the lofty arches of the mosque, feeling as though they themselves had become columns in that vast architecture. In the stones, the shadows, the numbers, and the words of their teacher, they now perceived the same truth: that symmetry is the design of existence, and that numbers—when rightly understood—mirror the wisdom of the Creator.

The Imam’s circle sat beneath the tall columns of the mosque, their shadows stretching long across the patterned floor. The stone arches above curved in perfect rhythm, like the ribs of a vast living body, holding the weight of heaven upon their symmetry. The students gazed upward and felt as though they were seated inside a living equation, the geometry of creation pressing silently upon their thoughts.

Abū ‘Abdullāh, his eyes alight with discovery, took up his stylus and scratched upon the wax tablet. He drew the outline of a palace: four walls, four pillars, and a central dome. “Master,” he said, his voice trembling with excitement, “look! The strength of this palace is not in the stones alone, but in their balance. Each wall mirrors the other, each column answers its twin. The dome itself would collapse if not for the

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symmetry that binds it. This is how numbers, too, must be—structured, proportioned, reflecting the harmony of existence.”

Ismā‘īl leaned forward eagerly, his merchant’s eyes sparkling. “It is like the marketplace, Abu ‘Abdullāh! If one side of the balance is heavier than the other, the whole trade is corrupted. But if both are equal, the exchange is just. Symmetry is justice in architecture, in markets, and in numbers alike!”

Ya‘qūb, stroking his beard with the gravity of a philosopher, added, “And in logic, too. A proof is not strong if its parts are scattered. But when the premises mirror each other, balancing in perfect proportion, the conclusion stands unshaken. Symmetry is the law that makes thought itself an architecture.”

The Imam smiled, a smile overflowing with wisdom, as though he were unveiling the foundations of a hidden palace. He reached for the tablet and drew a bridge across a river. On one side he placed two arches, on the other two arches to match them. “If the arches were not equal, my sons, the bridge would tilt, and the caravan would tumble into the river. But symmetry saves it. Numbers are like this bridge: if they are arranged without balance, the algorithm collapses. But if they are structured in harmony, they carry the weight of commerce, justice, and civilization itself.”

He then drew a garden: four paths crossing at the center, fountains aligned at each corner, and trees planted in mirrored rows. “And behold,” he said softly, “how the ancients built their gardens after the image of paradise—balanced, symmetrical, ordered. For the human heart finds rest not in chaos but in proportion. This, my sons, is why

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even in prayer we are commanded to stand shoulder to shoulder, rows upon rows, like numbers aligned in symmetry before their Lord.”

The young boy at the edge of the circle gasped, his voice rising with innocent wonder. “It is like a mirror, master! One side reflects the other. Without the reflection, the picture feels broken. With it, the world feels whole.”

The Imam’s eyes glimmered with pride. “Yes, my child. And so it is with the world, with worship, with thought, and with numbers. All of creation is woven upon symmetry, save for the Creator, who is beyond all likeness and reflection.”

He paused, then lifted his hand to the heavens. His voice rang like a call that filled the vast mosque.

“Know, my sons, that this is the fourth and final pillar of the great algorithm: Structure and Symmetry. A true algorithm is not a scattered heap of commands, nor a tangle of choices and loops. It is an *architecture*—like a palace whose every column strengthens the other, like a bridge whose arches balance across a river, like a garden whose paths meet at a single fountain. In such symmetry lies beauty, strength, and endurance. And upon such harmony, civilizations are raised that last for centuries.”

The students sat in reverent silence, their eyes wandering between the Imam’s sketches and the towering arches above them. In that moment they felt that they were not merely studying numbers, but glimpsing the secret by which God built the world: the law of symmetry that makes palaces stand, bridges endure, gardens flourish, and faith

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itself find balance.

Four: Structural Symmetry

Abū ‘Abdullāh had now completed the construction of the four pillars of the algorithm. Sequence had taught him order; Branching had given him the power to decide; Repetition had revealed the secret of permanence. Yet a greater truth awaited him—that true beauty does not dwell in strength alone, but in the symmetry and harmony that make every structure a mirror of the Creator’s wisdom.

That day the Imam’s circle sat quiet beneath the mosque’s arches, the air heavy with expectation. Before them lay the Imam’s tablet, covered with lines and numbers that resembled not mere symbols, but the outlines of walls and towers, as if a palace were rising stone by stone before their eyes.

At last Ya‘qūb broke the silence, his voice sharp but tinged with curiosity. “Master,” he asked, “we have learned to order the steps, to set the conditions, and to make them repeat until they achieve their goal. But tell us—does a building remain strong if it is not also beautiful and balanced? Does it not topple, like a lopsided tower shaken by the winds?”

The Imam’s lips curved into a smile, as though he had awaited this very question. He lifted his quill and drew upon the wax two mirrored shapes, so alike they seemed like the wings of a single bird

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poised for flight. He held the tablet aloft so all could see.

“You are right, Ya ‘qūb,” he said, his voice calm and deep. “Strength alone builds, but symmetry adorns, stabilizes, and perfects. A wing without its twin cannot lift the bird into the sky. A dome without equal arches beneath it will collapse into ruin. Do you not see how God Himself made the night and the day, the sun and the moon—pairs that reflect one another, each completing what the other lacks?”

Ismā‘īl leaned forward, his merchant’s shrewdness softened by thought. “So too with algorithms, then. They are not complete unless their parts are harmonious, like a well-composed poem in which every rhyme answers its companion, and no discordant note jars the ear.”

The Imam nodded, and his eyes glimmered with pride. “This is the truth, my sons. Structural symmetry is the balance that weds beauty to truth. It is no ornament added after the work is done. It is the very skeleton of logic, the secret of design, the harmony that makes the palace endure, the bridge holds firm, the verse of the Qur’an strikes deep into both the mind and the soul.”

He paused, letting the silence grow heavy, until the students felt the weight of the great arches above them pressing down. Then he raised his hand toward the pillars of the mosque, their shadows stretching long across the patterned floor.

“Behold these columns,” he said. “If one stood crooked, **the balance** of the whole would be lost. If one were missing, the roof would fall. But in their symmetry, the structure is secure, and in their order, the eye finds peace. This, my sons, is the fourth and final pillar of the

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algorithm: Structure and Symmetry. Without it, your work may be strong, but it will not be lasting; it may be useful, but it will not be beautiful. And what is not beautiful cannot endure.”

The students gazed upward at the arches and columns, and for a moment they felt as though the mosque itself were whispering to them—the secret of balance hidden in stone, number, and verse alike.

Lesson 11: The Architecture of Meanings in the Qur'an

We have now reached one of the most magnificent and profound principles in the Qur'an's construction: the principle of **structural symmetry**. It is not a mere ornament of rhetoric, adorning speech with rhythm and balance, but an *engineering of meanings*—a divine architecture that weighs ideas against each other like a scale and reveals truth with perfect precision. This principle marks a peak of maturity in understanding the “structure” and “architecture” we have spoken of, uniting the faculties of the mind and the heart in the great journey of discovery.

After the Imam had explained the mystery of “pair-ness,” of “the even and the odd,” and had shown how numbers themselves reflect the beauty of creation, a restless fire lit in the eyes of Ya'qūb the logician. His passion seemed to outstrip even that of the ancient philosophers whose works crowded his shelves. He opened a worn copy of Aristotle, his fingers moving across its pages as if searching for a lost key. Then he raised his voice, urgent and eager:

“Master, we have spoken of structure in creation and in numbers, and we have seen how all things unfold in symmetry and divine balance. But what of the structure of the argument itself? Aristotle taught us that logic draws its power from the rigor and sequence of the syllogism. Does

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the Qur'an possess its own unique method—an *engineering of meanings*—that demonstrates truth and anchors it not only in the mind but also in the heart?”

The Imam looked at him with encouragement, his eyes gleaming with hope, as though he saw a student reaching the threshold of a hidden treasure. His voice, calm and steady, carried the weight of the heavens.

“A question that shows the maturity of your mind, Ya ‘qūb, and opens for you the doors of divine wisdom. Yes, the Qur'an possesses a method that surpasses Greek logic. It does not offer truth as a lifeless statement to be memorized and then forgotten. Rather, it makes the mind itself uncover the truth, as if you are the discoverer of a hidden jewel buried within your soul. And the most powerful instrument of this method is what we call **structural symmetry**.”

The Imam's hand lingered upon the open Qur'an, his finger resting on the verse as if it were pointing to a hidden door in the architecture of meaning. His voice dropped low, carrying the hush of the heavens themselves.

“And it is, my son,” he said, “not merely the contrast of two opposites like night and day. It is the placing of two truths upon a delicate scale inside your very mind. Then the Qur'an does not hand you the answer—it shakes your soul with a question and makes you the judge. Thus the verdict comes not as borrowed words, but as a discovery rising from the core of your fitrah.”

The students shifted, hearts pounding, as if they were already sitting in that invisible courtroom.

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Ismā‘īl leaned forward, his merchant’s curiosity ignited like the scent of profit in the market. “Master,” he asked, “what is structural symmetry, truly? And how does it weigh truth against falsehood like the balance that measures gold and silver?”

The Imam reached for his wax tablet and with his stylus drew a scale, its two pans suspended in perfect balance. He held it up so the sunlight caught the faint lines, casting their shadow on the mosaic floor.

“Here is your answer,” he said. “Structural symmetry is when the Qur’an sets two concepts upon the scale, each on its side, and then asks a question that no soul can escape. Look, for example, at this magnificent verse in Sūrat al-Ra‘d.”

He recited, his voice deep and deliberate:

﴿قُلْ هَلْ يَسْتَوِي الْأَعْمَىٰ وَالْبَصِيرُ أَمْ هَلْ تَسْتَوِي الظُّلُمَاتُ وَالنُّورُ﴾
(سورة الرعد: ١٦)

“Say: Are the blind and the seeing equal? Are darkness and light equal?” (Qur’an, Al-Ra‘d: 16)

The students sat frozen. They felt the scales inside their minds tilting, tilting, until the truth shone clear.

The Imam’s eyes swept over them. “Do you see? The verse does not dictate, ‘They are not equal.’ No. It asks. Why? Because when your own tongue utters, ‘Of course they are not equal!’ the truth pierces deeper than any command. It is no longer information—it is discovery. And discovery is stronger than memorization. What the mind discovers, the heart will not forget.”

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Abū ‘Abdullāh whispered, his face alight, “So the Qur’an teaches by building a scale inside us—placing blindness against sight, darkness against light—and forcing us to weigh them until our own verdict reveals the truth.”

The Imam nodded, his smile glimmering like dawn. “Yes, my son. That is the secret of structural symmetry. It is an architecture of meanings, stronger than stone and sharper than steel. It awakens the intellect, it engages the heart, and it binds truth to the soul with the permanence of discovery.”

Yā‘qūb interjected with the enthusiasm of a philosopher who had just struck gold. His eyes glowed, and his words spilled out in a rush. “It is proof by participation, master! The Qur’an does not leave us passive. It makes the receiver part of the argument itself—as if the Qur’an is summoning the mind to stand in the witness box and testify against its own hesitation.”

The Imam’s face lit up, a smile spreading like the sun rising from behind a mountain. “Well said, Yā‘qūb,” he said, his voice warm with approval. “But tell me, what if the idea is not as simple as the difference between blindness and sight, or darkness and light? What if it is abstract, hidden, and hard for the human mind to grasp—like the unseen blessing that lies in charitable spending, a blessing that does not show itself immediately to the eye?”

He paused, his hand resting on the Qur’an, his eyes sparkling with anticipation. “Here, the Qur’an opens for us another door, greater and more wondrous. It uses symmetry through *the striking of parables*, to take the unseen and the abstract and place it before our very

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eyes—tangible, visible, alive.”

Then, with reverence, he recited:

﴿مَثَلُ الَّذِينَ يُنْفِقُونَ أَمْوَالَهُمْ فِي سَبِيلِ اللَّهِ كَمَثَلِ حَبَّةٍ أَنْبَتَتْ سَبْعَ سَنَابِلَ فِي كُلِّ سُنبُلَةٍ مِائَةٌ حَبَّةٌ وَاللَّهُ يُضَاعِفُ لِمَنْ يَشَاءُ وَاللَّهُ وَاسِعٌ عَلِيمٌ﴾
(سورة البقرة: ٢٦١)

“Those who spend their wealth in God’s cause are like a grain that sprouts seven ears, each bearing a hundred grains. God gives increase to whom He wills; God is boundless, all knowing.” (Qur’an, Al-Baqarah: 261)

His voice trembled with awe as he picked up his stylus and sketched upon the wax tablet the outline of a seed, from which rose seven stalks heavy with grain. The students leaned closer, their eyes widening as if they could see the field rippling before them.

“Do you see, my sons?” the Imam continued, his tone brimming with life. “The Qur’an does not say: ‘Whoever spends in God’s cause receives seven hundred times reward.’ That is abstract, dry, and easily forgotten. Instead, it gives us a parable: the tiny grain in the earth—fragile, buried, unseen. Yet by the command of God, it bursts forth, multiplying into seven hundred grains. A miracle you can touch, see, and taste.”

Ismā‘īl’s eyes widened, his merchant’s soul stirred by the image. “It is as if the Qur’an mocks the miser,” he said, “for the miser hoards a single grain, guarding it as treasure. But the generous man casts it into the soil and receives fields upon fields in return!”

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The Imam nodded, his expression glowing with satisfaction. “Yes, my son. The parable transforms an invisible truth into a miniature simulation—a living model of the unseen. It is symmetry between the hidden and the visible, between the world of meanings and the world of forms. And in that symmetry, the truth becomes not only understood by the mind, but tasted by the heart.”

Then the Imam paused, his gaze deep as though he were measuring the very pillars of existence, and his voice descended with the weight of eloquence:

“Know, my sons, that symmetry in the Qur’an is not always the simple opposition of one thing against another. It can also be a grand architecture of graduated contrasts—like a palace rising with columns and floors in perfect harmony, each side mirroring the other until the whole structure stands unshaken.”

He opened the Qur’an, and his recitation filled the chamber:

﴿فَأَمَّا مَنْ أَعْطَىٰ وَاتَّقَىٰ * وَصَدَّقَ بِالْحُسْنَىٰ * فَسَنُيَسِّرُهُ لِلْيُسْرَىٰ *
وَأَمَّا مَنْ بَخِلَ وَاسْتَغْنَىٰ * وَكَذَّبَ بِالْحُسْنَىٰ * فَسَنُيَسِّرُهُ لِلْعُسْرَىٰ﴾
(سورة الليل: ٥-١٠)

“For the one who gives, is mindful of God, and trusts in goodness, We shall smooth his way towards ease. But for the one who is miserly, thinks himself self-sufficient, and denies goodness, We shall smooth his way towards hardship.” (Qur’an, Al-Layl: 5–10)

The Imam lifted his stylus and drew two pillars on the tablet, equal in height but opposite in inscription. He struck the first with three words: giving, piety, belief. Then he struck the second with their dark

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twins: miserliness, self-sufficiency, denial.

“Do you see?” he said, his voice rising like a call to prayer. “This is not simple contrast. It is architecture. The Qur’an builds two symmetrical sides, each composed of three stones laid upon one another. One leads upward to ease, like a staircase of light. The other plunges downward to hardship, like a staircase into shadow. This is the logic of creation and requital, laid out as clearly as the walls of this very mosque.”

Ismā‘īl’s eyes widened, and his voice broke in with practical wonder. “I understand, master! The first method convinces the mind with direct comparison—like a balance that weighs the blind against the seeing. The second makes it vivid with sensory parables—like a field sprouting seven hundred grains. And now this third method directs the will itself—showing consequences like a map that points toward a destination!”

The Imam’s eyes glowed, and he turned toward Abū ‘Abdullāh with a gaze heavy with trust, as though laying the hope of a nation upon his shoulders. “And now, my son,” he asked, “the most important question: How does this principle benefit you in your new science? How does symmetry link the art of calculation with the wisdom of revelation?”

Abū ‘Abdullāh bent low over his tablet, silent for a long breath, his face lit by the shafts of sunlight that spilled through the latticework like threads of gold. It was as if the numbers before him had turned into living shapes, balancing and weighing each other like witnesses in a court of truth.

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At last, he raised his head, and a light of discovery blazed across his face. “Now I see it, master!” he exclaimed. “The entire science of calculation is nothing but symmetry! It is as if every equation is a scale, measuring numbers with divine justice. When I write ‘shay’ > 5 —the unknown greater than five—I am enacting the very architecture of symmetry. I place the unknown on one side of the balance and the known on the other, and I let the sign ‘ $>$ ’ declare which side outweighs the other.”

He pressed the stylus hard against the tablet, almost carving the symbols into its surface. “The marks ‘ $>$ ’, ‘ $<$ ’, and ‘ $\neq$ ’ are not mere scratches of ink. They are the very tools of comparison and contrast. They are the scales of numbers, the echoes of the Qur’an’s logic. They make calculation no longer cold and lifeless, but a living discourse—a mirror of revelation itself, where numbers reveal truths just as verses reveal meanings!”

The students gasped, as though the mosque itself had leaned closer to listen. In that moment, the abstract world of mathematics and the luminous world of the Qur’an fused before their eyes, bound by the law of symmetry.

The Imam smiled, and his voice flowed like cool water after a long desert march. “Well done, Abū ‘Abdullāh. You have now seen the fourth pillar as it truly is—not just structure, but beauty. Not just order, but wisdom. Whoever builds with this pillar does not construct cold machines, but systems as harmonious as the stars, as enduring as the mountains, as balanced as the Book itself. And whoever applies it, my sons, will not only calculate with justice, but will also build a civilization that reflects the beauty and permanence of divine design.”

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And then Ismā‘īl leapt to his feet, his eyes alight with a joy greater than that of a merchant who has stumbled upon hidden treasure. “Then even I, master, apply symmetry in the market every day! When I set my price beside my competitor’s, am I not asking, ‘Are they equal?’ If not, then I choose the better path for my deal, as if I am standing before the two high paths, deciding which road leads to profit and which to loss!”

Ya‘qūb followed, his voice trembling with admiration that surpassed even the ancient philosophers he so loved. “This is deeper than I ever imagined, master! The Qur’an does not spoon-feed the result like a ready-cooked meal. It places the balance before us, compels the mind to weigh, and trains the heart to judge. It does not merely deliver truth—it cultivates the judge within us, as though the Book itself is a court and we are summoned to issue the verdict of justice!”

At this the Imam’s face shone, and his voice rose with a majesty that seemed to carry the weight of the heavens and the earth. “Well done, my sons. Today you have uncovered that structural symmetry is no ornament, no idle embellishment of words. It is the divine method—the training of the mind, the shaping of values, the building of proofs that endure beyond generations. Whoever would build a science as strong as mountains must master the art of symmetry: the just comparison, the wise contrast. Only then will his science cease to be a cold instrument and become an architecture—an engineering that reflects the beauty of God in creation, as enduring and harmonious as the cosmos itself.”

Lesson 12: The Major Types of Symmetry

Constructing Meaning through Contrast

The circle was gathered once more in a quiet corner of the mosque, where sunlight streamed through the latticework screens, casting mirrored patterns on the floor as if forming a divine scale to weigh truth against falsehood. The students sat in a perfect ring, their very posture a reflection of harmony, as though their bodies themselves were part of the architecture of meaning. The Imam opened the Holy Qur'an with reverent hands, and the fragrance of incense curled upward, mingling with the cadence of sacred words and recalling the beauty of divine eloquence.

Ya'qūb's question still lingered in the air—the inquiry into the Qur'an's engineering of meanings. The Imam's gaze swept across the circle, and when he spoke, his voice carried the resonance of something vast, as if echoing from the foundations of heaven and earth.

“You are right, Ya'qūb,” he said. “The Qur'an has its own engineering, one that surpasses the logic of men and builds meaning with divine precision. The greatest principle of this architecture is symmetry. And to grasp it, you must know that it comes in two great forms—like two wings upon which an argument soars toward both the heart and the mind, establishing truth with a beauty and power beyond imagination.”

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The Imam then lowered the tablet to the floor and with his stylus drew a scale, its two pans hanging in perfect balance. “**The first type** is the clearest and most decisive, like a sword that cuts doubt at its root and leaves only truth shining in its brilliance. It is when the Qur’an places two completely contradictory concepts side by side to expose the abyss that lies between them. And by the force of that contrast, the truth becomes as undeniable as the sun at midday.”

He paused, and in the stillness his voice deepened as he recited:

﴿...قُلْ هَلْ يَسْتَوِي الْأَعْمَىٰ وَالْبَصِيرُ أَمْ هَلْ تَسْتَوِي الظُّلُمَاتُ وَالنُّورُ...﴾ (سورة الرعد: ١٦)

“...Say, ‘Are the blind and the seeing equal? Are darkness and light equal?’...” (Qur’an, Ar-Ra’d: 16)

The words struck the hearts of the students with the weight of a verdict already rendered. They did not need the Imam to explain further. Their own minds rushed to answer: *No, they are not equal!* The blind and the seeing, the darkness and the light—these cannot be the same. The comparison itself was the proof.

Ismā‘īl raised his head, eyes shining with sudden clarity. “It is as if the Qur’an sets a mirror before us,” he said, “and asks us to declare with our own tongues what our nature already knows! No one needs to be told that light is better than darkness—the heart cries it out without hesitation.”

Ya‘qūb nodded eagerly, leaning forward. “It forces us to participate in the reasoning,” he said, his voice trembling with awe. “The

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Qur'an does not give the verdict directly—it compels the mind to pass judgment itself, so that the truth becomes rooted, not borrowed. This is not a command imposed; it is a discovery made.”

The Imam smiled at their realization, his eyes glowing with satisfaction. “Yes, my sons. This is the genius of symmetry. It is not content with telling you what is right; it trains your reason to see it, to weigh it, and to choose it. Thus the truth does not come to you as a stranger’s word, but as a verdict born from within your own soul.”

Ya‘qūb stroked his chin, his eyes narrowing in a contemplation that seemed to surpass even the ancient philosophers whose books he had studied. His voice trembled with the thrill of discovery. “It is Binary Logic in its most sublime and beautiful form,” he said. “As if the Qur’an takes two opposites, sets them face to face in the arena of the mind, and leaves us no escape but to witness the difference with our own eyes. It does not hand us the verdict as a ready-made decree; it forces our very nature to cry out: *They are not equal!* It is an argument so irrefutable that it pierces through every layer of doubt and leaves behind only *it̤mi’nān*—tranquility of the heart born from direct comparison and immediate decisiveness.”

The Imam’s face lit with a smile, shining like a sun breaking through clouds after long rain. “Well said, Ya‘qūb,” he replied. “That is its goal: total clarity, a light so strong it leaves no shadow behind. This form of symmetry cuts doubt at its root. After such contrast, there remains no hesitation in the mind about the value of knowledge over ignorance, or the superiority of faith over disbelief. It is as if truth and falsehood are placed in the arena of the mind, not to be declared by another, but so that the soul itself pronounces the verdict. And when the

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verdict is your own, it takes root in the heart as a living certainty.”

He paused, letting the weight of his words settle. The students leaned closer, their breaths caught, their hearts already stirred. Then the Imam opened another page of the Holy Qur’an, his hands trembling with reverence as though he were unveiling a secret hidden since the dawn of creation. His voice deepened, carrying both gravity and grace.

“As for **the second type**,” he continued, “it is deeper still, and more eloquent. For here the Qur’an does not place the actions themselves in comparison—giving versus miserliness, faith versus denial—but rather it lifts the curtain on their *final outcomes*. It shows you the destinies to which these actions lead, as if to say: *Do not only weigh the deeds, weigh their fruits; do not only see the road, see where it ends*. In this way, it compels you to choose your path with both reason and iṭmi’nān—tranquility of the heart.”

Then he recited, his voice trembling with a power that shook the chamber and stirred every soul present:

﴿فَأَمَّا مَنْ أَعْطَىٰ وَاتَّقَىٰ * وَصَدَّقَ بِالْحُسْنَىٰ * فَسَنُيَسِّرُهُ لِلْيُسْرَىٰ *
وَأَمَّا مَنْ بَخِلَ وَاسْتَغْنَىٰ * وَكَذَّبَ بِالْحُسْنَىٰ * فَسَنُيَسِّرُهُ لِلْعُسْرَىٰ﴾ (سورة
الليل: ٥-١٠)

“For the one who gives, is mindful of God, and trusts in goodness, We shall smooth his way towards ease. For the one who is miserly, thinks himself self-sufficient, and denies goodness, We shall smooth his way towards hardship.” (Qur’an, Al-Layl: 5-10)

The words echoed in their chests like thunder rolling through

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valleys. The students could almost see it before their eyes: two great roads stretching into eternity—one lined with ease and radiant with light, the other weighed down with hardship and shrouded in darkness.

Ismā‘īl gasped, pressing his tablet to his chest. “So this second type,” he said, his voice thick with awe, “does not simply compare deeds—it shows the fate to which they lead. It is like a map of destiny, placing before us two destinations, and asking us: Which road will you walk?”

The Imam nodded gently, his eyes glimmering. “Yes, my son. That is the wisdom of this symmetry. It does not only train the mind—it directs the will, so that man chooses his path with open eyes and a steady heart.”

And then Abū ‘Abdullāh, his eyes glowing with the light of realization, said in a voice of deep thought:

“Master, this is the very same branching algorithm that we once inscribed upon the tablet in the science of calculation—but here it is no longer about silk rolls or wages. It is on the level of the entire human destiny! Every path has its inevitable result, every condition leads to its appointed end, as if the Qur’an itself is drawing before us a map of life, with its roads stretching toward two eternal destinations.”

The Imam’s smile spread gently across his face, like dawn unveiling itself across the horizon. “Yes, my son,” he said with tenderness. “Now you see the truth of symmetry in its loftiest form. You are not merely choosing a fleeting act that ends with the setting of the sun. You are choosing a destiny—a great course that defines your way,

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whether toward the light of ease or the darkness of hardship. This is structural symmetry in its most eloquent and most soul-shaking form: it makes the heart behold the truth even before the eyes, and it uncovers the true weight of choice. Each act is a seed, and each seed is already carrying within it the harvest of its end. When the Qur'an places these paths before you, it is as if you are standing at the gates of paradise and the abyss of hell, compelled to weigh and to decide."

He lifted the Qur'an in his hands, his voice trembling with reverence. "These, my sons, are the two great foundations of symmetry by which the Qur'an builds its architecture of meanings. Yet within them are countless eloquent tools—questions, parables, contrasts, promises, and warnings—woven together as if God Himself were raising a palace of meanings that shall never crumble. And in that palace, the human mind is not coerced, but trained—compelled to discover the truth on its own, until certainty grows within it like a tree rooted deep in the earth."

The Imam's voice then rose, resonant and solemn, carrying the majesty of heaven and the earth together:

"You have done well today, my sons. You have realized that structural symmetry is not a mere ornament draped upon speech to delight the ear. It is a divine method—training the intellect, anchoring values, and constructing proofs that endure through the ages. Whoever seeks to build a logical system as strong as the mountains and as enduring as the stars must master the art of just comparison and wise contrast. For only then will his science cease to be a tool of cold reckoning and instead become an architecture that reflects the beauty of God in creation itself."

Lesson 13: The Tools of Symmetry

The Keys of Eloquence and Logic

The circle pulsed with excitement, as though the students had stumbled upon a hidden jewel more radiant than gold buried beneath the earth. They sat in perfect harmony, shoulder to shoulder, their eagerness binding them into one body, every heartbeat quickened by the thirst for truth. The air was thick with the fragrance of old books and curling incense, rising like soft clouds that seemed to prepare their minds for a plunge into the ocean of divine eloquence.

Ya‘qūb’s sharp question about the “engineering of meanings” still lingered in memory, and the Imam’s unveiling of the two great types of symmetry had already reshaped their way of thinking. Then Ismā‘īl leaned forward, his hands moving restlessly in the air like a merchant weighing coins, eager and impatient for hidden profit. His voice broke the silence with the urgency of a bargain about to be struck:

“Master, we have understood the two great types, and we have seen how they construct meaning like the walls of a strong palace. But what of the tools you spoke of? What are they, and how do they work like keys—keys that open at once the doors of eloquence and the gates of logic?”

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The Imam lifted the Holy Qur'an, his touch so reverent it was as if he were lifting the very gates of paradise, and the students leaned in as though light itself would spill from its pages. His calm voice, steady as a river that silences storms, filled the chamber:

“Every builder, my sons, has tools—chisels that carve, hammers that raise, rulers that measure. And the Qur'an, too, has its tools—divine tools for the architecture of meaning. They are the keys with which the treasuries of wisdom are unlocked. By them the mind understands, and the heart affirms, and the truth becomes not a borrowed word but a living certainty.”

He paused, and the fragrance of incense swirled in ribbons above them, as if even the smoke longed to hear more. Then his voice lowered, drawing them nearer.

“When an idea is vast and abstract, as deep as a sea without shore, the best way to make it accessible is to clothe it in a garment the senses can touch. That is why the Qur'an strikes parables—it builds miniature models of unseen truths, transforming the invisible into something visible, the untouchable into something grasped. It draws a map for the abstract reality, until the heart can feel it and the eye can see it.”

He turned the Qur'an toward them and recited, his voice trembling with awe as the words poured into their hearts like rain watering thirsty soil:

﴿مَثَلُ الَّذِينَ يُنْفِقُونَ أَمْوَالَهُمْ فِي سَبِيلِ اللَّهِ كَمَثَلِ حَبَّةٍ أَنْبَتَتْ سَبْعَ سَنَابِلٍ فِي كُلِّ سُنبُلَةٍ مِائَةٌ حَبَّةٌ وَاللَّهُ يُضَاعِفُ لِمَنْ يَشَاءُ وَاللَّهُ وَاسِعٌ عَلِيمٌ﴾
(سورة البقرة: ٢٦١)

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“Those who spend their wealth in God’s cause are like grains of corn that produce seven ears, each bearing a hundred grains. God gives multiple increases to whoever He wishes: He is limitless and all knowing.” (Qur’an, Al-Baqarah: 261)

The students sat in awe. For a moment, they could almost see it: a single grain splitting the soil, sprouting into seven ears heavy with blessing, each ear brimming with a hundred shining grains, multiplying beyond measure, as if the very field were laughing at miserliness and beckoning to generosity.

Ismā‘īl’s eyes widened, and he leaned forward, his merchant’s instinct alive. “Master!” he exclaimed, his voice quivering with sudden clarity. “This is exactly like trade! If I keep one coin locked away, it remains cold and lifeless. But if I spend it wisely, it returns multiplied—tenfold, a hundredfold. God is showing us that generosity is the greatest bargain, the only deal that never fails!”

The Imam smiled, pleased with his student’s grasp. “Yes, Ismā‘īl. You see how a parable takes the unseen and brings it into the market of your own life? That is the power of the Qur’an’s tools: to awaken the mind and stir the heart, until truth becomes as visible as the sun at noon.”

The Imam closed the Qur’an gently, his hands trembling with reverence, and then he lifted his gaze, his eyes glimmering as though carrying a hidden fire.

“And sometimes, my sons,” he said, “the Qur’an does not spread out a long argument, nor does it pile proof upon proof like bricks of a

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wall. Instead, it strikes with the swiftness of lightning—one question, sharp as a sword, that shakes the soul from its slumber and compels the mind to answer without hesitation. This is the tool of the denying interrogative, a question whose answer is so obvious that to deny it would be to deny the very nature of truth itself.”

The students leaned in, their hearts expectant. The Imam opened the Qur’an again and recited in a voice that rang like thunder across the chamber:

﴿أَفَمَنْ يَمْشِي مُكِبًّا عَلَى وَجْهِهِ أَهْدَىٰ أَمَّنْ يَمْشِي سَوِيًّا عَلَىٰ صِرَاطٍ مُسْتَقِيمٍ﴾ (سورة الملك: ٢٢)

“Who is better guided: someone who walks with his head bent down, or someone who walks upright on a straight path?” (Qur’an, Al-Mulk: 22)

The words struck the circle like a spark on dry grass. The students felt the image leap alive before them: one man stumbling face-down in the dust, blind and broken, while another walked tall, his steps firm upon a clear road.

Ya‘qūb stroked his chin, his philosopher’s mind racing. “It makes the opponent defeat himself!” he declared, awe in his voice. “For no man would ever say that the one crawling in the dirt is more guided than the one walking upright. The question itself becomes the proof, sharper than any argument—it flashes like lightning, and the darkness is gone.”

Ismā‘īl laughed aloud, his merchant’s eyes bright with recognition. “Master, I see it now! When I ask a buyer, ‘Would you rather have a

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handful of dust or a purse of gold?’—I need no further speech. The deal is already made! So the Qur’an, too, asks, and the heart answers with no escape.”

The Imam’s smile deepened, and his voice flowed like a cool river soothing their astonishment. “Yes, my sons. The denying interrogative is one of the Qur’an’s greatest tools. It saves words but multiplies certainty. It makes the mind issue its own verdict, and in that verdict lies *itmi’ nān*—the tranquility of the heart. For the truth that you pronounce with your own tongue is stronger than the truth told to you by another.”

The Imam let the silence linger for a moment, allowing the weight of the denying interrogative to settle in their hearts. Then, with hands that moved as though guided by an unseen harmony, he opened the Qur’an once more. His voice came soft at first, then grew with the cadence of revelation:

﴿أَصْحَابُ الْجَنَّةِ يَوْمَئِذٍ خَيْرٌ مُّسْتَقَرًّا وَأَحْسَنُ مَقِيلًا﴾ (سورة الفرقان: ٢٤)

“The people of Paradise on that Day will be in a better dwelling and a fairer resting place.” (Qur’an, Al-Furqan: 24)

The words seemed to hang in the air like a lamp, casting light into every corner of their minds.

The Imam lifted his stylus and drew upon the tablet two houses—one plain, dark, and small, the other radiant, spacious, and adorned. He raised his eyes to his students. “Here, the Qur’an does not strike with contradiction, nor does it awaken with a sharp question. Instead, it gently arranges matters, showing which is higher in value,

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which is nobler, which is more beautiful. This is the tool of the comparative. It lifts the veil so that you may see the hierarchy of truths, placing them in their proper ranks as if you were arranging jewels upon a crown.”

Ismā‘īl leaned forward eagerly, his merchant’s heart resonating with the logic of profit and loss. “Master, this is like when I place two fabrics before a buyer—one coarse, one fine. I do not need to argue endlessly. I say only, ‘This one is better,’ and the truth shines by itself. The choice becomes clear.”

Abū ‘Abdullāh’s face glowed as if touched by sudden revelation. “And in arithmetic, master,” he said with excitement, “we use the symbols ‘>’ and ‘<’ to show precisely this! They are but signs of comparison, telling us which number is greater, which is lesser. It is as if mathematics itself borrows the Qur’an’s wisdom, giving us tools to place things in order, to choose the highest and leave the lowest.”

Ya‘qūb’s eyes widened with wonder. “It is symmetry in degrees, then! Not only proving difference, not only denying equality, but showing superiority. It does not merely separate truth from falsehood—it elevates truth above, and places falsehood beneath, so that the heart inclines toward the better without compulsion.”

The Imam’s voice grew firm, like a builder setting the final stone upon a palace. “Yes, my sons. The comparative tool completes the circle. With it, the Qur’an arranges reality into ranks and stations, teaching the mind to discern not only difference, but excellence. For wisdom is not merely to distinguish truth from falsehood, but to prefer what is better, to choose the most beautiful, and to rise step by step until one reaches

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the highest.”

The fragrance of incense drifted upward once more, curling like a crown of smoke above the circle. The students sat silent, their minds burning with clarity, as though the scales of comparison had been set firmly in their souls—forever teaching them how to weigh, how to order, how to ascend.

And then the Imam gathered the tablets before him as if he were gathering the scattered jewels of wisdom into one casket. His voice flowed with calm strength, carrying the weight of heavens and earth:

“You have seen, my sons, that the Qur’an does not leave truth suspended in abstraction, nor does it burden the mind with endless proofs. Rather, it fashions tools of clarity, each one a key that opens a gate. The parable turns the unseen into a form that can be touched and seen. The denying interrogative shakes the soul until it answers the truth by itself. The comparative arranges matters in their rightful ranks, so that the better shines and the lesser fades.

Together, these tools are like three lamps that cast their light upon the same palace of meanings. They polish the scale of the intellect, refine the stirrings of the heart, and train the will to choose rightly. Whoever learns to wield them builds a system of thought that is not brittle like the syllogisms of men, but living, harmonious, and eternal, reflecting the order of the cosmos and the beauty of the Creator’s speech.

This, my sons, is the secret of the Qur’an’s symmetry: it makes us witnesses in the court of life, weighing with justice, choosing with wisdom, and issuing verdicts that carry tranquility (*iṭmi’nān*) to the heart

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and clarity to the mind. These are not ornaments of style, but the very architecture of guidance.”

The incense curled upward like threads of light, and in the silence that followed, each student felt as though he had been handed not only a key to eloquence but also a key to life itself.

Five: Verification and Proof – Building *İtmi'nān*

Abū ‘Abdullāh had now completed the four pillars of the algorithm: he could order steps with sequence, choose with branching, endure with repetition, and shape with structure. Yet the Imam reminded him that strength alone is not enough. A palace, however tall, must rest on a foundation that proves its truth and verifies its balance, or else it will fall at the first storm.

The Imam said, his tone calm yet heavy with meaning: “Abū ‘Abdullāh, the highest aim of building—whether of numbers, ideas, or acts—is to arrive at **İtmi'nān**, the tranquil repose of the heart when it knows that what it holds is correct, just, and complete. Without this repose, the mind remains unsettled and the soul restless.”

At this, Ya‘qūb, his eyes glinting with the sharpness of a philosopher, raised a question:

“Master, is this *İtmi'nān* the same as what the Greek philosophers called *certainty*? For they too spoke of proving ideas until no doubt remains.”

The Imam turned to him with a knowing smile. “No, Ya‘qūb. What they call *certainty* belongs to the cold reasoning of an abstract mind, a chain of logic that forces the intellect to nod even if the heart remains unmoved. It is narrow and brittle, like glass that shines but shatters with

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one blow.

But **iṭmi'nān** is deeper. It is when the **entire cognitive system**—mind, heart, self, and soul together—achieves coherence, harmony, and consonance. It is not only that the intellect sees the proof, but that the heart feels its peace and the soul accepts its justice. It is the difference between a man convinced by argument and a man at rest because his whole being has found balance. One is compelled by logic; the other is embraced by truth.”

Then the Imam gave them a parable to make it plain:
“Imagine a traveler in the desert. He raises a tent in haste, its canvas stretched but its stakes shallow. From afar it looks complete. But when the night winds rise, each gust shakes it, and he lies awake in fear. That is the state of abstract certainty—something seems proven, but the heart trembles, never at rest.

The wise traveler, however, drives his stakes deep, tests each rope, and feels their strength. When the storm comes, he sleeps soundly, though the winds howl around him. That repose of the heart, born of both testing and trust, is **iṭmi'nān**.”

The Imam lowered his voice, solemn as the hush before dawn.
“The Qur'an itself is not only a book of commands, but a book of **proofs and verifications**. It repeats, it compares, it tests—until the truth becomes as steady as the sun rising day after day. If you wish your algorithms to endure, Abū 'Abdullāh, you must give them this same strength: verified, just, and complete. This is how systems grow from scribbles into structures, and how thought becomes repose.”

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He placed his hand upon the Qur'an and concluded:

“In the next lessons you will learn how to plant iṭmi'nān step by step—how to test an algorithm so that it cannot deceive, how to prove its justice like the scale on the Day of Judgment, and how to ensure its completeness like the creation perfected by God. These are the paths to iṭmi'nān, and they are your next lessons.”

Lesson 14: The Tools of Inference

The First Steps of Iṭmi'nān (The Tranquility of the Heart)

The Imam's circle sat in stillness beneath the high arches of the mosque, where beams of afternoon light pierced the lattice windows and spread across the floor like golden lines of meaning. The air was heavy with the scent of parchment and incense, as though both knowledge and worship had mingled in one atmosphere.

The Imam lifted his gaze and recited with a voice that carried both awe and tenderness:

﴿وَمَا جَعَلَهُ اللَّهُ إِلَّا بُشْرَىٰ وَلِتَطْمَئِنَّ قُلُوبُكُم بِهِ ۚ وَمَا النَّصْرُ إِلَّا مِنْ عِنْدِ
اللَّهِ الْعَزِيزِ الْحَكِيمِ﴾ (سورة آل عمران: ١٢٦)

“And God made it but a message of glad tidings, so that your hearts might find iṭmi'nān (tranquility) thereby. Victory comes only from God, the Almighty, the All-Wise.” (Qur'an, Aal-'Imrān: 126)

Then he turned to his students, his eyes glimmering with wisdom, and said:

“My sons, do you see? *Iṭmi'nān* is not merely calmness of the mind—it is God's purpose for the heart, so that faith may be anchored, unshaken by storms. It is not the philosopher's 'certainty,' which belongs

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only to the abstract reasoning of the intellect. Certainty convinces the logical faculty, but *it̤mi'nān* embraces the entire being. It is the mind's clarity, the heart's repose, the soul's harmony, and even the body's ease. It is the tranquility of knowing that truth is not only proven—it is lived, tasted, and settled within."

Ya'qūb leaned forward again, his eyes still restless with inquiry. "Master, you have shown us that certainty is like brittle glass, and *it̤mi'nān* is the harmony of the whole self. But tell me—how do we move from the one to the other? How does dry reasoning become living tranquility?"

The Imam's face glowed with a gentle joy, as if watching a seed sprout into its next stage. "A good question, Ya'qūb. Reason may show you that the water exists, but only when you taste it does your heart rest. The path from certainty to *it̤mi'nān* is the path from hearing to witnessing, from knowing about the truth to living within it. This is why the Qur'an does not stop at proofs for the intellect—it repeats, it compares, it gives parables, until the heart itself becomes a witness. When the mind affirms and the heart resonates, when the soul feels at peace with what the intellect knows—that is *it̤mi'nān*."

The students fell into silence, the weight of the Imam's words pressing gently upon their hearts. It was as if, in that moment, they too had descended into the well, cupped the cool water in their hands, and tasted it upon their tongues. What their minds had reasoned, their hearts now seemed to feel, and upon their lips echoed the ancient prayer of Ibrāhīm:

﴿رَبِّ أَرِنِي كَيْفَ تُخَيِّ الْمَوْتَى قَالَ أَوْلَمْ تُؤْمِنَ قَالَ بَلَىٰ وَلَٰكِن

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لَيَظْمَنَنَّ قَلْبِي ﴿البقرة: 260﴾.

“My Lord, show me how You give life to the dead.” He said, “Do you not believe?” He said, “Indeed I do, but only so that my heart may be reassured.”
(Qur’an, Al-Baqarah: 260)

In that stillness, their hearts settled into a peace deeper than thought, a tranquility that felt like drinking from the very spring of *itmi’nān*.

The Imam’s voice deepened, carrying the rhythm of revelation. “To grant this *itmi’nān*, God scattered His signs across the horizons, the earth, the self, and the histories of nations. Some truths are clear like the sun at midday, needing no proof. Others are hidden, like treasure beneath the soil. For these, God gave us the tool of inference—*al-istidlāl*—to gather small signs, piece them together, and uncover the unseen reality. Inference is the path that leads from fragments to wholeness, from doubt to tranquility, from question to *itmi’nān*.”

The students leaned closer, their faces glowing with anticipation, as if the very promise of that tranquility was drawing them onward into the lesson.

The circle sat hushed, their hearts stirred by the Imam’s words about *itmi’nān*. The parable of the well lingered in their minds, like cool water on the tongue of a thirsty traveler. Just then, the sound of slow, heavy footsteps approached. A man entered, his shoulders bowed beneath an invisible weight. His face was shadowed with grief, as though sorrow itself had taken residence in his eyes.

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The students instinctively shifted, their youthful energy subdued by the presence of his anguish. It was as if a black cloud had drifted across the clear sky of their gathering, casting silence in its wake. He stood before the Imam and spoke, his trembling voice carrying the weight of a broken trust:

“O Imam, I deposited one hundred gold dinars with my merchant friend before setting out on a journey to a far land. Because I trusted him beyond words, I did not write a contract, nor did we call witnesses between us. But while I was away, my friend died suddenly, snatched by death as a man is taken by a hidden thief in the night. Now, his sons deny the trust altogether, saying there is no proof. My wealth is lost, and worse, my heart is crushed with grief.”

The air in the mosque thickened with unease. The students exchanged glances, their own hearts aching for the man, yet powerless to answer. The silence pressed on them like a heavy stone.

At last, Ismā‘īl broke the stillness with his merchant’s straightforwardness, his voice rising with urgency:

“This is a disaster, master! How can his heart ever find *ḥimī’nān* in a right that is denied? Where is the proof when the only witness has gone to the grave, and no contract was written? It is as if his case is a night without stars—dark and hopeless.”

The man bowed his head, his grief deepening, while the students looked to the Imam, their hearts yearning for the wisdom that could pierce such darkness.

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The Imam remained calm, his face a sea of serenity, as though the storm of grief and doubt could not shake the stillness of his heart. His eyes softened with mercy as he looked upon the grieving man, and then upon his students, who leaned forward with breathless expectation.

“My son,” the Imam said, his voice as steady as a lantern in the night, “*itmi’nān* does not always descend from direct, material evidence. Sometimes the truth lies hidden, like treasure beneath the earth, awaiting the hand that knows how to uncover it. When the straightforward proof is absent, God has given us another tool—one more subtle, yet no less powerful. It is *istidlāl*—inference—the art of gathering the small signs that are seen, to ascend from them to the great truth that is unseen. Just as scattered stars form constellations to the attentive eye, so do scattered traces lead the heart to tranquility.”

Then the Imam lifted the Qur’an before them and recited in a voice that trembled with awe:

﴿أَلَمْ تَرَ إِلَى رَبِّكَ كَيْفَ مَدَّ الظِّلَّ وَلَوْ شَاءَ لَجَعَلَهُ سَاكِنًا ثُمَّ جَعَلْنَا الشَّمْسُ عَلَيْهِ دَلِيلًا﴾ (الفرقان: ٤٥)

Have you not considered your Lord—how He extends the shade? Had He willed, He could have made it still. Then We made the sun its guide. (Qur’an, Al-Furqān: 45)

“Do you see, my sons? The shade itself is unseen in its essence, but the sun makes it evident and measurable. Thus, God teaches us that by one sign we infer another. This is the very logic of the Qur’an: to build *itmi’nān* by turning every visible clue into a pointer toward the hidden truth.”

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The man lifted his gaze slightly, as if a faint glimmer had pierced his cloud of despair. The students, sensing a lesson about to unfold, tightened their circle.

Then Abū ‘Abdullāh, ever quick to unveil hidden connections, leaned forward and said, “So, master, inference is the science of reading traces and signs to uncover hidden realities—like a tracker who, by examining footprints in the sand, knows what passed that way before him, though he never saw it with his own eyes.”

The Imam smiled, the lines of wisdom deepening on his face. “Well said, Abū ‘Abdullāh. You have touched its essence. It is this noble tool by which the Qur’an itself calls us to faith—urging us to look at the heavens, the earth, the self, and history, to build *īmān* step by step, until the heart rests in a truth as firm as a mountain.”

After the Imam had unveiled the meaning of inference and its Qur’anic foundation, Ya‘qūb, stroking his chin with the restlessness of a philosopher, spoke with measured politeness:

“Forgive me, master, but there remains some ambiguity in this method that troubles my mind. Does verification (*tabayyun*) come before proof (*burhān*), or is it the other way around? Verification seems like examining each part, while proof appears to be establishing the whole. But the relationship between them still lacks the clarity of the sun at noon.”

The Imam smiled, his face brightening as though unveiling a hidden treasure. His voice carried the firmness of revelation as he recited:

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﴿قَدْ جَاءَكُمْ بُرْهَانٌ مِّن رَّبِّكُمْ﴾ (النساء: 174)

“Indeed, there has come to you a clear proof from your Lord.” (Qur’an, Al-Nisā’: 174)

Then he said: “Look, Ya‘qūb — the Qur’an distinguishes between the two. *Verification* is the careful weighing of the signs, one by one, while *burhān* is the unveiled proof of the whole, descending with clarity like the sun after the shadow. Together, they build the tranquility of *itmi’nān* in the soul.”

He leaned forward, sketching bricks upon the wax tablet.

“Before laying even a single brick, the master builder inspects each one with a care that surpasses a jeweler examining a diamond. He asks: Is it solid like rock, not crumbling in the hand? Are its dimensions correct, symmetrical, and fit for the line? Was it mixed with good materials, and not adulterated like counterfeit coins? This careful inspection of each part is *verification*. It builds trust in the tools and materials, ensuring that no flaw hides within them.

“But does the soundness of bricks alone guarantee the wall’s strength? No, Ya‘qūb. We need the master plan — the architectural design that shows where each brick belongs, in what order, and with what cohesion. This is *burhān*: not the testing of the part, but the harmony of the whole. It is the design that binds the bricks into one unshakable structure, as straight and enduring as the path laid down by revelation itself.”

The Imam’s hand moved across the tablet, sketching a line of

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bricks one atop another, then surrounding them with the outline of a strong wall. The students watched in silence, as if the sound of storms beyond the city already tested the wall in their imagination.

After the Imam had unveiled the meaning of inference, Ya‘qūb, stroking his chin with the curiosity of a philosopher, spoke with careful politeness:

“Forgive me, master, but there is still a shadow over my understanding. Does verification (*tabayyun*) come before proof (*burhān*), or is it the other way around? Verification seems like examining the part, while proof seems like establishing the whole. Yet I do not see clearly how the two embrace each other.”

The Imam smiled, as if unveiling two jewels from the treasure chest of the Qur’an. He recited first:

﴿يَا أَيُّهَا الَّذِينَ آمَنُوا إِن جَاءَكُمْ فَاسِقٌ بِنَبَأٍ فَتَبَيَّنُوا﴾ (الحجرات: 6)

“O you who believe! If a wrongdoer comes to you with news, verify it (*fatabayyanū*)...” (Qur’an, Al-Hujurāt: 6)

And then he recited:

﴿قَدْ جَاءَكُمْ بُرْهَانٌ مِّن رَّبِّكُمْ﴾ (النساء: 174)

“Indeed, there has come to you a clear proof (*burhān*) from your Lord.” (Qur’an, Al-Nisā’: 174)

Closing the Qur’an, he said: “Here, my sons, you see the two stages as God Himself taught us. *Verification* (*tabayyun*) is the careful

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scrutiny of the part — to test a single report, a single sign, to be sure it is sound and not corrupted. *Burhān*, on the other hand, is the unveiled clarity of the whole — the final proof that shines with the strength of the sun. Without verification, proof collapses on false bricks; without proof, verification remains scattered like stones on the ground.”

He took the wax tablet and drew the outline of a wall. His hand sketched brick after brick, pausing as though weighing each one.

“Imagine a master builder,” the Imam said. “Before he sets even one brick into place, he inspects each one: is it solid, like rock that does not crumble? Is it rightly measured, straight and symmetrical? This is *tabayyun* — verification — the testing of every single part.

“But is that enough? No, Ya ‘qūb. Even perfect bricks laid without a plan yield a crooked wall. The builder needs the blueprint that orders the parts into one harmonious whole. That design, that clarity, is *burhān*. It is not the checking of parts, but the vision of the system as a complete truth, secure against storms.”

The students leaned closer, watching the chalk-white lines take form on the tablet: small bricks tested one by one, then arranged into a high, strong wall. The Imam’s voice lingered in their ears like the echo of revelation:

“*Tabayyun* guards the parts. *Burhān* secures the whole. Together they build the tranquility of *īmī’nān*, so that the heart rests in the knowledge that its wall will not crumble.”

The Imam paused, his gaze drifting upward to the shafts of

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sunlight piercing the latticework. He lifted his hand gently as if tracing the arc of the heavens, and said:

“Do you see, my sons, that neither *tabayyun* nor *burhān* stands alone? They work together in a cycle, just as night and day follow one another by the command of God. Without the night, the day loses meaning; without the day, the night would be endless darkness. Together they form a harmony that brings order to life.”

He then recited:

﴿يُقَلِّبُ اللَّهُ اللَّيْلَ وَالنَّهَارَ ۚ إِنَّ فِي ذَلِكَ لَعِبْرَةً لِّأُولِي الْأَبْصَارِ﴾ (النور: 44)

“God alternates night and day; truly in this is a lesson for those who have eyes to see.” (Qur’an, Al-Nūr: 44)

Then he explained:

“So it is with the building of *iṭmi’nān*. At first, we begin with *tabayyun* — verification — by examining particular signs, like a builder testing a handful of bricks to assure himself they are solid. From there, we move to *burhān* — the clear proof — which gives us the blueprint of the whole wall, uniting the parts into one harmonious structure.

And when we have secured the *burhān*, it returns us again to verification — for every new case or fresh report can now be tested against the great proof we already possess, like laying each brick in confidence that it will align with the architect’s plan.”

He leaned closer, his voice deepening with gravity:

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“Thus, the cycle continues: *verification leads to proof, and proof strengthens verification*. Together they feed one another, building layer upon layer, until the wall of truth stands tall and unshakable, and the heart rests in the tranquility of *itmi’nān*.”

The students felt the weight of his words as if they were sitting inside that fortress itself, the night and day revolving above them, guarding their faith and reason alike.

The Imam opened the Qur’an before him with hands trembling in reverence, and the fragrance of incense curled upward like a witness to the moment. His eyes shone as he said:

“My sons, know that the Qur’an does not leave us wandering in confusion, nor does it ask us to leap blindly into belief. Rather, it surrounds us with signs from every direction, building *itmi’nān* layer upon layer, until the heart settles as the earth settles after a storm. It opens before us four great gates, each one leading to the sea of truth, through which the mind and soul together may drink deeply.”

He raised his stylus and tapped the wooden tablet, sketching four small arches, each leading into a vast circle.

“**The first gate,**” he said, “is the gate of the horizons—the vast heavens and earth that stretch above and around us.”

“**The second gate** is the gate of the self—your own soul and body, which carry within them the greatest proofs of all.”

“**The third gate** is the gate of the earth—its gardens, fruits, and wonders, which speak with a silent tongue of the hand that shaped

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them.”

“And **the fourth gate** is the gate of history—the traces of nations past, which stand as lessons written upon time’s pages, reminding us of the laws that govern all destiny.”

He lowered his hand, and his voice fell into a silence heavy with awe.

“These four gates are the Qur’an’s method of inference: from horizons, from selves, from earth, and from history. Whoever passes through them with reflection and sincerity will arrive at *ṭmi’nan* (the tranquility of the heart), for the signs are as clear as the sun at noon.”

The students leaned forward, their hearts beating faster, eager to follow him through each gate and glimpse the vast sea that lay beyond.

The Imam lifted his gaze toward the high arches of the mosque, where the shafts of light pierced the latticework and fell across the patterned floor. His voice grew solemn as he recited the words of God, may He be exalted:

﴿إِنَّ فِي خَلْقِ السَّمَاوَاتِ وَالْأَرْضِ وَاخْتِلَافِ اللَّيْلِ وَالنَّهَارِ لَآيَاتٍ لِأُولِي الْأَلْبَابِ﴾ (آل عمران: ١٩٠)

In the creation of the heavens and the earth, and in the alternation of night and day, there are signs for those who use their reason. (Qur’an, Āl ‘Imrān: 190)

Then the Imam said, “This is the first gate: the horizons. Whoever contemplates the heavens and the earth, their vastness and precision, finds not emptiness but order—an algorithm written by a

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Hand that never errs. The alternation of night and day is not chaos, but a cycle as steady as the beating of a heart. It is not merely that the sun rises and sets; rather, it does so by a precise decree (*taqdir*), a measurement so exact that it becomes a proof of knowledge and wisdom surpassing imagination.”

Ya‘qūb, stroking his chin, interjected with the curiosity of a philosopher: “Master, is this not what the philosophers also seek? Do they not study the heavens for first causes and hidden principles, as if groping in the dark for the secret of existence?”

The Imam turned to him with a calm smile. “They seek the principle, Ya‘qūb, but the Qur’an shows us the Ordainer Himself. It does not call us only to observe the sun’s course; it calls us to see in that course the signature of divine knowledge and power. The philosophers may speak of laws, but the Qur’an speaks of the Lawgiver. That is the difference between wandering in conjecture and resting in *ṭmi’nān* (the tranquility of the heart).”

Ismā‘īl leaned forward, ever the practical merchant, and asked, “But master, what benefit do I gain in my trade by contemplating the heavens and their orbits? My scales weigh silver, not stars.”

The Imam chuckled softly, his eyes warm. “It benefits you, Ismā‘īl, by teaching precision and order. He who sees the sun rise at its appointed moment and the moon wax and wane by decree should be ashamed to conduct trade without accuracy or to keep ledgers filled with error. The celestial order teaches you the discipline of calculation, so that your scales become just and your business sound. In this way, the horizons build within you not only awe but also responsibility.”

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The students sat in silence, their minds turning with the orbits above them, as if each heartbeat echoed the truth of the verse.

The Imam lowered his gaze from the heavens and placed his hand upon his chest, where the pulse of life beat steadily. His voice softened, yet carried a depth that reached every ear:

﴿وَفِي أَنْفُسِكُمْ أَفَلَا تُبْصِرُونَ﴾ (الذاريات: ٢١)

And in yourselves—do you not see? (Qur'an, Adh-Dhāriyāt: 21)

He said, “This is the second gate: the self. The closest proof of the Creator is not in distant stars or in galaxies beyond counting, but here—within the chest of each of you. Every breath you take, every beat of your heart, every thought that sparks in the unseen chambers of your mind is an *āyah* (sign). The Qur'an compels you to look inward, for within yourselves lies a treasure of evidence greater than all the heavens above.”

Abū 'Abdullāh pressed his hand against his chest, his eyes shining with sudden insight. “It is true, master! The greatest proof is not the sun racing in its course or the moon shining in the night sky. It is this very beat, which never ceases, never falters, until the appointed hour. It is as if my heart itself proclaims the existence of the One who fashioned it with wisdom.”

The Imam smiled, his face glowing like dawn. “Well said, Abū 'Abdullāh. For the miracle is not only in the vast heavens, but in the transformation of a single drop into hearing, sight, thought, and worship.” Then he recited:

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﴿وَلَقَدْ خَلَقْنَا الْإِنْسَانَ مِنْ سُلَالَةٍ مِّنْ طِينٍ﴾ (المؤمنون: ١٢)

We created man from an essence of clay. (Qur'an, Al-Mu'minūn: 12)

He lifted his hands as if holding an invisible form before their eyes. "From clay to a living being, capable of reason, of love, of remembrance—can this be the work of blind chance? No, it is the work of deliberate wisdom. To reflect upon yourselves is to find *itmi'nān* (the tranquility of the heart), knowing that you are not accidents scattered by the wind, but purposeful creations guided by a will that never errs."

The circle grew hushed, each student feeling the weight of his own breath and the miracle of his own being. Their silence was not emptiness but a fullness, as though each heartbeat now spoke a verse of the Qur'an.

The Imam then stretched his hand toward the ground, his fingers brushing the cool tiles as though they were the very soil of the earth. His voice deepened, carrying the weight of a farmer sowing seeds of wisdom:

﴿وَفِي الْأَرْضِ قِطْعٌ مُّتَجَاوِرَاتٌ وَجَنَّاتٌ مِّنْ أَعْنَابٍ وَزَرْعٌ وَنَخِيلٌ صِنْوَانٌ وَغَيْرُ صِنْوَانٍ يُسْقَىٰ بِمَاءٍ وَاحِدٍ وَنُفِصِّلُ بَعْضَهَا عَلَىٰ بَعْضٍ فِي الْأُكُلِ إِنَّ فِي ذَلِكَ لَآيَاتٍ لِّقَوْمٍ يَعْقِلُونَ﴾ (الرعد: ٤)

On the earth are plots side by side, gardens of vines, crops, and palms in clusters and standing alone, all watered with the same water; yet We make some taste better than others. In this are signs for people who use their reason. (Qur'an, Ar-Ra'd: 4)

Ismā'il, whose trade carried him often through orchards and markets, leaned forward, his face alight with recognition. "Master, I

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know this verse with my own eyes. In the fields of Iraq, the same water flows through canals, the same soil feeds the roots, yet this palm bears dates as sweet as honey while another yields fruit of different color and taste. It is as if a hidden hand shapes every tree with its own wisdom.”

The Imam’s smile was like sunlight breaking through clouds. “Indeed, Ismā‘īl. This is inference itself. The causes appear identical—the soil is one, the water is one—yet the results differ. This difference cries out that there is not a blind, deaf nature at work, but a wise, choosing Creator. The Qur’an commands us to ‘*aql* (use our reason), for to reflect on the variety springing from unity is to perceive the signature of the Divine Architect.”

He paused, letting the words sink deep into their hearts. The students could almost see the fields spread before them, each tree a witness, each taste a testimony. The earth itself seemed to speak with countless voices, proclaiming the harmony of difference under the One who ordains all.

The Imam then lifted his gaze from the earth and let it wander across the faces of his students, as if inviting them to journey through time itself. His voice carried the solemn weight of memory and warning:

﴿قَدْ خَلَتْ مِنْ قَبْلِكُمْ سُنَنٌ فَسِيرُوا فِي الْأَرْضِ فَانظُرُوا كَيْفَ كَانَ عَاقِبَةُ الْمُكَذِّبِينَ﴾ (آل عمران: ١٣٧)

Before you, many patterns and laws unfolded. Travel through the earth and see what became of those who denied the truth. (Qur’an, Āl ‘Imrān: 137)

The chamber grew still, as though the voices of vanished nations

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echoed faintly against its stone arches. The Imam's words seemed to carry the dust of ruined palaces and the sighs of fallen kings.

“Do you see, my sons?” the Imam asked, his voice gentle yet firm. “The Qur'an turns history itself into a laboratory of truth. Each nation is like an experiment already performed, its results recorded in ruins and chronicles. Some embraced justice, and their civilization flourished like gardens after rain. Others clung to arrogance and denial, and their end was desolation, as if their pride was swept away like tents in a storm. These traces are not mere stories for entertainment—they are *proofs* and *lessons*, inviting the mind to infer the laws that govern the fate of peoples.”

Ya'qūb stroked his chin thoughtfully. “So the Qur'an makes history into a science of patterns, as if every rise and fall were data points from which we can deduce the law that rules all nations. It is not only remembrance, but reasoning.”

“Exactly, Ya'qūb,” the Imam replied, a smile touching his lips. “For just as the sun and stars obey laws that never fail, so too do nations follow laws that never change. Whoever reads them with insight will gain *ṭmi'nān*—the tranquility that comes from knowing that God's justice prevails through time. No tyrant escapes, and no truth is lost. History itself testifies to the scales of divine balance.”

The students sat in silence, their hearts heavy with awe. They felt as though the ruins of past empires surrounded them, each stone crying out: *See, and take heed.*

The Imam let the silence linger, as if to allow their hearts to settle

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like still water after a rushing current. Then he raised his hand and said, “You have now seen, my sons, that *it̤mi’nān* is not born of a single sign or proof. It is built step by step, like a palace whose foundations must be laid on every side. And for this reason, the Qur’an calls us to inference in four great ways, so that no door remains closed, and no heart remains in doubt.

It calls us first to the heavens and the earth, where the vastness of creation testifies to the greatness of the Creator. Then it calls us inward to our very selves, where the precision of our form and the beating of our hearts testify to His wisdom. Then it calls us to the earth and its fruits, watered by one source yet differing in taste and color, testifying to His will and choice. And finally, it calls us to history, to walk among the ruins of nations and see how His laws rule the rise and fall of peoples, testifying to His justice.”

Abū ‘Abdullāh lifted his stylus, his voice carrying the clarity of one who sees a complete design. “So, master, the four types of inference are like four gates of one fortress: the cosmos, the self, the earth, and history. Enter from any one of them, and you will find yourself in the house of *it̤mi’nān*.”

The Imam’s eyes glimmered with joy. “Well said, Abū ‘Abdullāh. For *it̤mi’nān* is not a single stone—it is a structure held by four walls, each supporting the other. Whoever looks to the heavens, the self, the earth, and history together finds his heart surrounded by proofs from every side, until it rests with a peace that cannot be shaken.”

The students sat in reverent stillness. It was as though they could see those four gates rising before them, each opening onto a vast

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horizon of truth, yet all leading inward to the same sanctuary—the tranquil heart, filled with light.

Lesson 15: The Tools of Proof

Building an Irrefutable Argument

The Imam's circle simmered with an intensity that could almost be felt in the skin. The students sat close together, their hearts beating in harmony, as if they were limbs of a single body. Their eyes glimmered with the same desire: to touch the truth.

Around them, incense curled in the air like hidden thoughts rising to heaven. The smell of ancient manuscripts thickened the room, as though knowledge itself had a fragrance. Light streamed through the latticework windows, flickering on their faces like sparks of a sacred fire.

The Imam had just finished his discourse on *Inference*, showing how the Qur'an guides the believer from what is seen to what is unseen, until the heart finds *iṭmi'nān*—tranquility as steady as a calm sea after a storm.

But Ya'qūb, the logician, could not contain the flame in his chest. Stroking his chin, his words broke the silence like an arrow striking its mark:

“Master, inference is mighty. It persuades like mountains that cannot be shaken, and it grants tranquility to the heart. Yet it still leaves a door open, however narrow, for doubt. How then do we reach the

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absolute tranquility—iṭmi'nān that admits no doubt at all?

How do we prove a universal truth, like a mathematical law, which no mind in the world can deny—so undeniable that rejecting it would be like rejecting the sun at midday?

Inference is like the moon: it shines with borrowed light. But proof, proof is like the sun: blazing with its own fire, which no one can obscure.”

His words burst forth like a spring from stone, a thirst that longed to see the farthest horizon of certainty.

The Imam gazed at Ya‘qūb, and in his eyes shone both pride and gravity, as though he beheld a soul climbing to the summit of wisdom. When he spoke, his voice carried a stillness deep as the sea and weighty as a mountain:

“You have asked well, Ya‘qūb. What you seek is the highest station of the mind, the crown of argument, the fortress of certainty. It is the *Proof*—the blade that severs doubt from its very root.

Know this: inference is indeed light, but it is the light of the moon. The moon shines beautifully, yet its glow is borrowed. It leads the traveler through the night, but it cannot prevent the shadows from returning.

Proof, however, is like the rising sun. It blazes from within itself. No hand, no veil, no cloud can extinguish it. When proof appears, night vanishes, shadows scatter, and the heart rests in complete tranquility.

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Inference convinces the mind—it opens the door. Proof, on the other hand, builds the house. It establishes the truth in such a way that no wind of argument, no storm of suspicion, can shake it. It is an unassailable fortress where *iṭmi'nān* takes root.”

The students leaned forward, their faces lit with a strange glow, as though the Imam’s words were lamps burning inside their chests.

Ya ‘qūb bowed his head, his eyes filled with awe. He felt as though he had glimpsed the first light of dawn after a long night of wandering.

The Imam paused, letting the silence deepen, as if to allow the image of moonlight and sunlight to settle into every heart. Then, gently closing the Qur’an before him with reverence, he said:

“Now let us see how the Qur’an itself teaches us this way of proof.”

The Imam opened the Qur’an again, his fingers trembling with reverence as though touching a living flame. His voice, steady and commanding, filled the circle:

“The Qur’an establishes proof upon three mighty pillars. The first is this: do not rush to present your own evidence, as though you must force truth into the heart of your opponent. Instead, begin by demanding *his* proof.

Why? Because the one who fabricates has nothing to stand upon. The moment he is asked to show his evidence, his words collapse like a tent without poles. Thus, the Qur’an begins debate with a lightning

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strike, exposing falsehood before truth even needs to speak.”

He lowered his eyes to the open page and recited, his tone sharp as thunder, yet clear as a stream:

﴿قُلْ هَاتُوا بُرْهَانَكُمْ إِن كُنتُمْ صَادِقِينَ﴾ (سورة البقرة: ١١١)

“Say: Produce your proof, if you are telling the truth.” (Qur’an, Al-Baqarah 2:111)

The words fell heavy into the silence. The students felt them like arrows piercing the heart of falsehood. A single verse had shifted the balance of all debates—placing the weight not on the defender of truth, but on the one who dares to claim against it.

At that moment, Ya‘qūb raised his hand with the careful courtesy of a philosopher who steps cautiously across dangerous ground. His eyes glimmered with curiosity, and he asked:

“Master, forgive me—but is this not the very rule we know from the Prophet (PBUH) himself in jurisprudence: *‘The burden of proof is upon the one who makes the claim, and the oath is upon the one who denies’*?”

Does not this Prophetic rule give the full shape to the Qur’an’s challenge? And if so—what role does the oath play in this grand architecture of proof?”

The circle grew still. It was as though even the incense paused midair, waiting for the Imam’s reply.

The Imam’s face brightened, a gentle smile breaking across his

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features like sunlight piercing clouds. He nodded to Ya‘qūb, his voice warm yet firm:

“Well said, Ya‘qūb. You have touched the completion of wisdom. Indeed, the Prophetic rule crowns the Qur’anic challenge and forms a system of justice that no human court has ever matched. It proceeds in two clear stages, as natural and inevitable as the coming of day after night.”

He reached for the wooden tablet resting before him, and with deliberate strokes of his stylus, he drew a tree. Its trunk split into two great branches, each bearing fruit. The students leaned closer, eyes fixed on the growing image.

“Look here,” the Imam said, pointing to the first branch. “The one who makes a claim must first bring proof, like a scale that demands weight. If he can show clear evidence—evidence sharp as a sword that cuts doubt cleanly—then the case is settled in his favor. Justice shines, and tranquility fills every heart.”

He shifted his stylus to the second branch. “But if he cannot bring evidence, the matter does not end there. The process flows onward, like a river that does not stop until it reaches the sea. The burden then shifts to the other party—the one who denies. And since no material proof exists against him, he is offered a shield: his word and his honor before God. He may take an oath by the name of God, declaring the claim false.”

The Imam set down the stylus. The tree on the tablet seemed alive, its branches holding the weight of justice itself.

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“If the defendant swears truthfully, the case is settled in his favor, and he is cleared in this world. His reckoning is left to God in the Hereafter, where no secret escapes. But if he refuses the oath—if his lips tremble and he withdraws—this very refusal becomes evidence against him. It is as though his silence cries out louder than words.”

The students breathed in deeply, sensing the beauty of this balance: one branch of proof, the other of oath.

The Imam’s eyes swept across them, and his voice deepened:

“This is the Prophetic algorithm of justice. It is more than human law. It is mercy and wisdom entwined. It does not only protect the rightful claimant; it shields the innocent from false accusation. It grants each side its full chance, and above all, it brings *ṭmi’nān*—a tranquility of the heart that justice has been served, both in this world and the next.”

The incense rose higher, curling into shapes that seemed like scales weighing truth itself.

The Imam let the silence stretch, as though giving the tree of justice time to grow roots in their hearts. Then he spoke again, his tone both solemn and reassuring:

“Do not underestimate the place of the oath, my sons. For it is not merely a word uttered by the tongue—it is the summoning of God as witness, the One who knows what no human judge can see. When material evidence is absent, the oath becomes the final shield, the defender of the innocent.

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Consider: if false claimants could condemn men without evidence, the courts of this world would drown in injustice. But by shifting the burden to the oath, the Prophet (PBUH) built a safeguard that no tyrant can overturn. The liar fears to swear before the All-Knowing. His tongue falters, his silence exposes him. And the truthful finds strength, for his heart rests upon the certainty that God is with him.”

The Imam’s words settled like stones in water, each ripple carrying clarity outward.

He continued, his hands open as though weighing both sides of the scale:

“Thus the system achieves balance. The claimant has his chance to prove his words with evidence. If he fails, the defendant gains the chance to defend himself with an oath. Both sides are heard, neither silenced. This is justice perfected: evidence for the mind, oath for the heart, and God as the ultimate witness.

Do you see now? This is not merely law—it is tranquility itself. For once the process is complete, no heart remains restless. The claimant cannot protest, for he failed to prove. The defendant cannot complain, for he was given his oath. The community cannot doubt, for the system has run its full course. All leave with *iṭmi’nān*, and the matter rests with God, where all secrets are laid bare.”

The students looked upon the tablet again, its branching tree now alive with meaning: one path of proof, one path of oath, together forming a justice that reached beyond the courtroom into the soul.

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The Imam closed his eyes for a moment, as though gathering the weight of centuries in his chest. When he opened them, his gaze was steady, filled with a fire that seemed both tender and unyielding. His voice rose with renewed power:

“But the Qur’an does not leave the field empty after exposing the weakness of the liar. Out of His mercy and justice, God Himself presents the proof, a proof so luminous that no excuse remains for the seeker of truth. It is as though the sun rises after a night of thunder and shadow, flooding the world with clarity.”

The Imam’s hands rested upon the sacred text. His voice, reverent and majestic, recited words that filled the chamber like rays piercing every corner:

﴿يَا أَيُّهَا النَّاسُ قَدْ جَاءَكُمْ بُرْهَانٌ مِنْ رَبِّكُمْ وَأَنْزَلْنَا إِلَيْكُمْ نُورًا مُبِينًا﴾
(سورة النساء: ١٧٤)

“People, convincing proof has come to you from your Lord, and We have sent down to you a clear light.” (Qur’an, Al-Nisa 4:174)

The students’ hearts trembled. They felt as though the verse itself had entered their souls, a light descending into the hidden chambers of their minds.

Ismā‘īl, the merchant, leaned forward with the wonder of a man who had found treasure hidden in plain sight. His eyes widened, and his voice broke with emotion:

“So the Qur’an itself is not merely a book of commands and prohibitions—it is *the Proof!* It quenches the thirst of the seeker like fresh

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water. It is saying: *Do not search far, for the greatest argument is in your hands. It is the shining lamp that establishes the truth and gives itmi'nān to the heart.*"

The Imam's face lit with approval. "Well said, Ismā'īl. The Qur'an is the greatest theoretical proof—addressing both the mind with wisdom and the heart with light. It is the fortress where doubts dissolve, and tranquility takes its seat."

The students exchanged glances, their souls lifted as though the words had given them wings. They no longer saw the Qur'an as only guidance or law—it was the very architecture of proof, God's own testimony to His truth.

The Imam let Ismā'īl's words linger in the air, like incense rising in spirals. Then he spoke again, his voice steady but carrying a hidden force:

"Yet God's mercy did not stop at sending down the Qur'an as a radiant proof. He strengthened His messengers with signs that struck the senses directly, leaving no room for stubborn denial. If the Qur'an is the read proof for the mind, then the miracles of the prophets are the witnessed proof for the eyes."

He leaned closer over the sacred text, and his recitation came like a thunderclap rolling through the chamber:

﴿...فَذَانِكَ بُرْهَانَانِ مِنْ رَبِّكَ إِلَىٰ فِرْعَوْنَ وَمَلَئِهِ ۚ إِنَّهُمْ كَانُوا قَوْمًا فَاسِقِينَ﴾ (سورة القصص: ٣٢)

"...these are two proofs from your Lord to Pharaoh and his chiefs, for they are a rebellious people." (Qur'an, Al-Qasas 28:32)

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The verse hung in the air, heavy and radiant. The students could almost see Moses' staff becoming a serpent, his hand shining white with light.

Ya'qūb's eyes gleamed, his voice sharp with the excitement of discovery:

"Now it is complete, Master! The Qur'an is the proof that speaks to the mind—the *read proof*. And the miracles of the prophets are the proof that seizes the senses—the *witnessed proof*. Together they leave no space for argument. The mind is convinced, the eyes bear witness, and the heart finds *itmi'nān*."

The Imam nodded, his face calm yet shining like the dawn. "Yes, Ya'qūb. When both the intellect and the senses are addressed, the fortress of proof becomes unshakable. This is God's mercy—to guide every faculty of the human being, so no seeker is left without a path to tranquility."

The students sat hushed, as if the room itself had been filled with the glow of those ancient miracles, as though Pharaoh's court and their denials were unfolding before their very eyes.

The Imam's eyes glimmered with a deeper fire, and his voice dropped into a tone both calm and cutting:

"And now we come to the third axis of proof taught by the Qur'an—the most precise, the most unassailable, the sword that no shield can block. This proof does not build truth with new stones; it demolishes falsehood itself, stone by stone, until only truth stands bare

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and radiant.

It is the method of assuming the opponent's claim, following it to its conclusion, and showing that it leads only to corruption and impossibility. This is the way of *proof by contradiction*."

He raised the Qur'an, and his recitation rang out like a blade cleaving through the air:

﴿لَوْ كَانَ فِيهِمَا آلِهَةٌ إِلَّا اللَّهُ لَفَسَدَتَا ۖ فَسُبْحَانَ اللَّهِ رَبِّ الْعَرْشِ عَمَّا يَصِفُونَ﴾ (سورة الأنبياء: ٢٢)

"If there had been in the heavens or the earth other gods besides God, both would have been in ruins. So glory be to God, Lord of the Throne, above what they describe!" (Qur'an, Al-Anbiya 21:22)

The verse struck them like thunder rolling through mountains. Before the Imam could even explain, Ya'qūb leapt to his feet, his face alive with awe, his voice trembling with excitement:

"Allāhu akbar! This is it, Master! This is what the Greek philosophers call *Proof by Contradiction*! The Qur'an has spoken it long before them. It is the most sublime of all proofs, for it tears down falsehood at the root and leaves only truth shining like the sun!"

Ismā'īl frowned in confusion, scratching his head like a merchant puzzled by a strange contract. "But Ya'qūb, what does this mean in plain words? Explain it simply, as if you were dealing with traders in the market!"

The Imam smiled gently, knowing the lesson had reached its

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turning point. The chamber was filled with suspense, the students leaning forward, waiting for Ya‘qūb to answer Ismā‘īl in words simple enough for every heart.

Ya‘qūb raised his hands as though sketching lines of thought in the air, his voice pulsing with excitement:

“Listen, Ismā‘īl. Proof by contradiction works like this: instead of trying to prove directly that a statement is true, we assume the opposite is true and follow that path step by step. If it leads to absurdity—if it ends at a cliff that cannot be crossed—then the assumption must have been false from the beginning. And so, its opposite shines as the undeniable truth.”

He pointed toward the Qur’an, his eyes blazing:

“Here the verse takes the claim of the polytheists—‘Let us suppose there are other gods beside Allah’—and follows it to its conclusion. The inevitable result is chaos: the heavens and the earth collapsing in ruin. But since we see order, harmony, and precision in the universe, we know their assumption is false. Therefore, the truth stands firm: *There is no god but Allah, the One and Only.*”

Ismā‘īl laughed aloud, his face bright with sudden understanding. “Ah, now I see! It is like a ship, Ya‘qūb. If two captains fought for its helm, the ship would sink in confusion and ruin. But since this ship of the world sails smoothly and safely, it must have but one Captain guiding it with wisdom. This is proof stronger than iron!”

The students smiled at Ismā‘īl’s parable, the weight of philosophy

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turned into the coin of the marketplace.

All eyes turned then to Abū ‘Abdullāh al-Khwārizmī, the mathematician. His face was calm, his tone measured, like a man unraveling a hidden code:

“I too understand, Master. In mathematics, this proof is our sharpest weapon. Suppose I wish to prove that a number is odd. I begin by assuming the opposite: let us say it is even. I then carry out the calculations with precision. If I arrive at an absurd result—something impossible, like one equaling two—then the assumption collapses. And so, the number is proven odd beyond doubt.

This is the chain of proof: each step inevitable, each link leading to the next, until the truth stands certain and the heart is filled with *ṭmi’nān*.”

The circle glowed with a quiet fire. Philosophy, trade, and science had each bowed to the same law of proof. The students felt as though they had been shown three mirrors reflecting a single sun.

The Imam’s eyes rested on Abū ‘Abdullāh, and with a gentle nod, he set the challenge before him:

“Then let us see, my son, how this method builds not only arguments, but a palace of certainty. Prove for us something that no mind, however stubborn, can deny. Show us how proof fills the heart with *ṭmi’nān*.”

Abū ‘Abdullāh rose, his hands steady as he took the stylus and tablet. His voice was calm, like a river flowing toward the sea:

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“Let us prove that the sum of two even numbers is always—even forever—an even number. Not just in this case or that case, but in every time, every place, and every world where numbers exist.”

He drew the first stone of the palace:

“First, we agree on a foundation: an even number is any number that can be written in the form $2 \times n$. Do we accept this?”

The students nodded together, their agreement as firm as laying the cornerstone of a building.

“Second,” he continued, “let us take not specific numbers, but two general even numbers: $2 \times n$ and $2 \times m$, where n and m can be any integers in the universe.”

He carved the next step:

“Now, let us add them: $(2 \times n) + (2 \times m)$.”

The students leaned forward as he wrote swiftly:

“This equals $2 \times (n + m)$.”

He set down the stylus, his voice ringing with triumph:

“And since $(n + m)$ is itself an integer, the result is in the form $2 \times (\text{some number})$ —which means it is even. Thus, no matter what even numbers we begin with, their sum is always even. This is truth undeniable, as clear as the sun at noon.”

A murmur of awe passed through the circle. The proof had unfolded like the walls of a fortress rising stone upon stone, each step

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inevitable, until no doubt remained.

The Imam's face shone with pride, his voice carrying the weight of finality:

“Well done, Abū ‘Abdullāh. This is the essence of proof: a chain of truths, each link unbreakable, leading the mind and heart together to absolute certainty.

Inference is like the moon: it guides, but it borrows its light. Proof is the sun: blazing from itself, overwhelming all shadows. And when proof is complete, *iṭmi'nān* descends upon the heart like a garden in the chest, a paradise of serenity, unshaken by storm or doubt.”

The circle sat in stillness, their hearts filled with a tranquility that seemed to echo eternity. The fragrance of incense lingered, the sun flickered through the lattice, and in that sacred silence, they knew: they had been given not just tools of logic, but keys to the fortress of certainty.

Lesson 16: The Tools of Completing the Count

The Algorithm of Perfection and It̤mi'nān (The Tranquility of the Heart)

The Imam's circle glowed with the fervor of discovery, the very air trembling with an energy more precious than hidden treasure. The students sat in unbroken harmony, their hearts and minds moving as though they were the limbs of a single body. The scent of old books and curling incense filled the space, sanctifying it as if preparing their souls for a descent into the depths of wisdom.

At the center sat Abū 'Abdullāh al-Khwārizmī. Before him lay his tablet, etched with a logical proof written by a hand as steady as a jeweler cutting facets into a flawless diamond. When he lifted his gaze, his face glowed with triumph. He was radiant, like a conqueror raising his banner upon a mountain peak.

"This," he declared, his voice clear and resounding, "is a complete proof, Master! A chain of truths linking beginning to end with precision so perfect that no doubt can enter."

The students exchanged glances, their eyes alive with admiration. Yet the Imam, though smiling, gazed at Abū 'Abdullāh with eyes deep as the sea. His voice was calm, but it carried a weight that pierced the heart:

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“Your proof is beautiful and sound, my son. But tell me—are you certain it encompasses *all possible cases*, as though covering the universe itself? Have you ensured there is no small loophole, no hidden crack through which error may enter—like a thief slipping through an unguarded back door?”

Abū ‘Abdullāh’s smile faltered. He grew silent, his pride shaken. The word *ṭmī’ nān*—tranquility—echoed in his heart like a sudden gust shaking a dry branch. His proof stood tall in his mind, but now he wondered: had he mistaken confidence for completeness?

The circle fell quiet, the students waiting, the incense hanging heavy in the air, as if time itself paused for the next revelation.

It was Ismā‘īl who broke the silence first, his face clouded with the frustration of a merchant who had discovered a miscalculation in his ledger. His voice came sharp but earnest:

“Master, this is exactly what I face in my trade! After I count my profits with care, I cannot rest until I recount them from the beginning. I check every figure, every coin, as though searching for a thief hidden in the shadows. For only then can I sleep peacefully, certain that my money is sound and no loss remains. Without that final audit, my heart would never know tranquility.”

The students nodded, the example striking close to everyday life. They saw in Ismā‘īl’s words the same struggle between confidence and hidden doubt.

Then Ya‘qūb lifted his head, his eyes sharp with the light of

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reason. His words cut cleanly, like a sword swung with precision:

“And in logic, Master, we follow the same principle. A proof is never accepted at first sight, no matter how beautiful it appears. We turn it over, testing it from every possible angle, attacking it with the swords of doubt. We ask: *What if this step fails? What if the opposite were assumed?* If the proof withstands every assault and remains unmoved, like a mountain battered by storms, then—and *only then*—do we accept it. That is the moment when certainty becomes a treasure that never perishes.”

Abū ‘Abdullāh listened intently, their words echoing the Imam’s warning. He began to feel the walls of his proof not as invincible but as a fortress in need of inspection—stone by stone.

The Imam nodded slowly, his face radiant with approval, as though seeing God’s wisdom reflected in their speech. “Yes, my sons,” he said, his voice steady, “you have all touched the truth. The heart cannot rest with half-work or unchecked steps. Verification is the seal of perfection, and without it, neither trade nor logic nor faith can reach their completion.”

The air seemed charged again, anticipation rising like the incense smoke. All waited for the Imam to ground these insights in the Qur’an itself.

The Imam straightened his posture, and with reverence he opened the Holy Qur’an. His hands trembled slightly, not from weakness, but from awe—like one who touches a treasure not of this world. His voice softened, yet it carried across the circle with clarity that pierced every heart:

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“The call to *complete* and *perfect* one’s work is not a human invention. It is one of the great principles of Qur’anic education—an education that shapes a soul step by step, polishing it as a jeweler polishes a stone until it gleams with brilliance.

Consider, my sons, the acts of worship that purify the heart and discipline the body. God does not measure their worth by fiery beginnings but by steadfast completion. For it is the end, perfected without deficiency, that carries value in His sight.”

He lowered his gaze to the open page and recited with a tone both tender and majestic:

﴿...فَمَنْ شَهِدَ مِنْكُمُ الشَّهْرَ فَلْيَصُمْهُ ۖ وَمَنْ كَانَ مَرِيضًا أَوْ عَلَى سَفَرٍ فَعِدَّةٌ مِنْ أَيَّامٍ أُخَرَ ۗ يُرِيدُ اللَّهُ بِكُمُ الْيُسْرَ وَلَا يُرِيدُ بِكُمُ الْعُسْرَ وَلِتُكْمِلُوا الْعِدَّةَ وَلِتُكَبِّرُوا اللَّهَ عَلَىٰ مَا هَذَاكُمْ وَلَعَلَّكُمْ تَشْكُرُونَ﴾ (سورة البقرة: ١٨٥)

“...So let whoever of you is present during the month fast it. But whoever is ill or on a journey, then ‘let them fast’ an equal number of other days. God wants ease for you, not hardship. He wants you to complete the prescribed period and to glorify Him for having guided you, so that you may be thankful.” (Qur’an, Al-Baqarah 2:185)

The verse settled upon them like a crown. The students felt its weight: fasting is not accepted by mere attempt or partial effort. The count must be *completed in full*, only then does the act reach its perfection and its true reward.

At once, Ismā‘īl’s eyes lit up, and he exclaimed with the conviction of a man recalling his own trade:

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“By God, Master! This is exactly what happens in my work. If a client orders thirty rolls of cloth, he will not accept twenty-nine. He demands the full count—*the completion*—or the deal is void. The trust is built only by full delivery, and any deficiency corrupts the entire contract. Is this not the same as worship, where a missing step breaks the covenant with God?”

The Imam smiled warmly. “Well said, Ismā‘īl. You have grasped the essence. The Qur’an teaches us that no act reaches perfection unless the count is completed. This is the secret of *īṭmī’ nān*: completion brings trust, and trust brings tranquility to the heart.”

The students felt the truth settle inside them, like a stone anchoring a tent against the winds. Yet the Imam had more to unfold.

The Imam turned a few pages of the Qur’an, his fingers moving gently, as though unveiling hidden gems. His voice carried reverence and firmness together:

“Consider also the Hajj, the great pilgrimage. It is not a scattered set of actions, each standing alone. It is a system—an algorithm of worship—where every step builds upon the one before it. And just as a system collapses if one part fails, the Hajj collapses if its rites are left incomplete.”

He recited, his tone solemn yet majestic:

﴿...فَإِذَا قَضَيْتُمْ مَنَاسِكَكُمْ فَاذْكُرُوا اللَّهَ كَذِكْرِكُمْ آبَاءَكُمْ أَوْ أَشَدَّ ذِكْرًا...﴾
(سورة البقرة: ٢٠٠)

“...*When you have completed your rites, celebrate God as you celebrate your*

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fathers, or even more...” (Qur’an, Al-Baqarah 2:200)

The words wrapped around the circle like a command that admitted no compromise: *completion* is the condition of acceptance.

Ya‘qūb, ever the logician, leaned forward, his eyes alight with discovery. His voice carried the sharpness of one who had uncovered a universal law:

“Now I see, Master! The Hajj is a system, an integrated whole. If one stands at ‘Arafāt but neglects the Ṭawāf al-Ifāḍah, the entire system collapses, just as a palace without its roof collapses before the storm. The rule is clear: *all or nothing*. Any deficiency nullifies the total value. This is a law of logic, Master—a law that surpasses the Greeks themselves!”

The Imam’s gaze softened, pride gleaming in his eyes. “Yes, Ya‘qūb. You have spoken well. God’s law reveals not only commands of worship but principles of perfection: completion is the essence of every system. Only the whole structure, built without deficiency, can endure.”

The students felt the weight of the words. They saw the rites of Hajj not as rituals alone, but as an algorithm—an ordered sequence that revealed the deeper logic of creation and worship alike.

The air thickened with silence. All eyes turned now toward Abū ‘Abdullāh al-Khwārizmī, for the Imam’s gaze had rested on him, as though waiting for him to see how this principle touched the very heart of mathematics.

All eyes fixed on Abū ‘Abdullāh. The Imam’s gaze was gentle but

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firm, as if inviting him to uncover the hidden link. Slowly, Abū ‘Abdullāh lifted his tablet, his mind alive with new insight. His voice carried the steady rhythm of a man who had glimpsed an unseen horizon:

“Now I understand, Master. The process of calculation—the algorithm itself—is like a covenant between the mathematician and the problem. Each side has a trust. The mathematician must give the algorithm precise inputs and complete steps, while the algorithm guarantees, in return, the exactness of its solution.

If I break my side of the covenant—if I feed it deficient numbers, or skip even one step—then I have no right to demand accuracy from it. The result will be corrupted, not because the algorithm failed, but because I betrayed the covenant. Completion is not optional—it is the very soul of precision.”

The students leaned in, their eyes widening. They saw the unity between worship and science: fasting, Hajj, and algorithms were bound by the same principle—completeness begets trust, and trust begets tranquility.

The Imam inclined his head, his eyes glowing with approval. “Well spoken, my son. You have seen that truth runs through all things: in trade, in worship, in logic, and even in the language of numbers. God has written one law upon the universe—that no system stands except by perfection, and no heart rests except by trust.”

The incense curled upward in the quiet room like a covenant itself—an unseen bond binding heaven and earth, mind and heart, truth and tranquility.

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The Imam's voice deepened, carrying both tenderness and authority, as he turned back toward Abū 'Abdullāh. His eyes shone with hope, cool and refreshing like a spring that quenches thirst:

“So, my sons, the final pillar in building *itmi' nān*—the tranquility of the heart—is verification. It is not enough to build a proof and admire its beauty. One must return to it, strike it with tests, and try to break it with one's own hands, just as a warrior tests a sword with powerful blows before trusting it in battle.”

He lifted the tablet and drew a single line, firm and straight. His words fell with the weight of mountains:

“Test it with small numbers, playful as children. Test it with large numbers, heavy as the toil of laborers. And above all, test it with the most dangerous of all—*zero*. For many systems endure every trial and yet collapse before zero, like a sandcastle before the wave. But if your proof withstands them all, unmoved like a mighty mountain, then you may trust it completely. Only then have you reached the unshakable summit of tranquility.”

Abū 'Abdullāh bowed his head, struck by the majesty of the Imam's words. With steady hand he inscribed upon his tablet, as though sealing a testament:

“The Final Pillar of *Itmi' nān*: Verification and Completing the Count.”

The Imam's gaze swept across the circle, resting on each student in turn. His voice was a seal upon the lesson:

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“You have all done well, my sons. The Qur’an teaches us a great principle—that completion and perfection are not ornaments of the work, but its very foundation. The fast is not complete except by completing its days. The Hajj is not valid except by completing its rites. The proof is not trustworthy except when verified against all trials.

It is completion that generates trust. And trust is what gives birth to *ṭmi’ nān*—the tranquility of the heart that fills both soul and mind, like light filling the universe. This is the algorithm of perfection.”

The circle fell silent. Incense drifted upward like a prayer. And in that silence, the students felt what the Imam had promised: a tranquility deeper than proof itself—the serenity of a heart that knows its foundation is whole.

Part Two: The Revolution of Algebra and Balancing

Inferring the absent from the present

Uncovering the Unknown

The circle was quiet, but the air was full of expectation. They had completed the *Revolution of Calculation*, yet the Imam's eyes told them that a new journey was about to begin.

He said softly:

“The Qur'an teaches us a path of reasoning called *inferring the absent from the present* (الاستدلال بالشاهد على الغائب). You witness something **seen** with your eyes, and from it you understand something greater, **unseen**.”

Ismā'īl leaned forward, his voice carrying both wonder and doubt:

“Master, how can something I see with my eyes prove something I cannot see?”

The Imam opened the Qur'an and recited:

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﴿وَالَّذِي نَزَّلَ مِنَ السَّمَاءِ مَاءً يَقْدَرُ فَأَنْشَرْنَا بِهِ بَلْدَةً مَّيْتًا كَذَلِكَ تُخْرَجُونَ﴾ (الزخرف: 11)

“He sends down water from the sky in due measure, and with it We revive a dead land. In the same way, you will be brought forth.” (al-Zukhruf 43:11)

“Look,” the Imam said, “you see rain falling, and you see the earth come alive with plants. That is what is present. From it, God teaches you to know what is absent—that just as the earth is revived, so too will you be revived after death.”

Ya‘qūb’s eyes shone with realization. “So the Qur’an takes what we witness now, and uses it to show us the unseen?”

The Imam nodded, turning another page, and recited:

﴿فَانْظُرْ إِلَى آثَارِ رَحْمَةِ اللَّهِ كَيْفَ يُحْيِي الْأَرْضَ بَعْدَ مَوْتِهَا إِنَّ ذَلِكَ لَمُحْيِي الْمَوْتَى﴾ (الروم : 50)

“So look at the effects of God’s mercy—how He gives life to the earth after its death. Indeed, that same One will bring the dead to life.” (al-Rūm 30:50)

“Yes,” the Imam said, “what you see with your eyes—the soil turning green—is a sign for what you cannot yet see: the resurrection of the dead.”

Abū ‘Abdullāh al-Khwārizmī raised his head. “And this, Master—how does it guide us in our own learning?”

The Imam’s eyes gleamed, and he recited one final verse:

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﴿يَا أَيُّهَا النَّاسُ إِن كُنْتُمْ فِي رَيْبٍ مِّنَ الْبَعْثِ فَإِنَّا خَلَقْنَاكُمْ مِّن تَرَابٍ
ثُمَّ مِّن نُّطْفَةٍ ثُمَّ مِّن عَلَقَةٍ ثُمَّ مِّن مُّضْغَةٍ مُّخَلَّقَةٍ وَغَيْرِ مُخَلَّقَةٍ لِّنُبَيِّنَ لَكُمْ﴾
(الحج - الآية 5)

“People, if you are in doubt about the Resurrection, then reflect: We created you from dust, then from a drop, then from a clinging clot, then from a lump of flesh—formed and unformed—that We may make clear to you.” (al-Hajj 22:5)

The Imam closed the Qur’an and said:

“Even your own body is a witness. From dust to drop to clot to flesh—you were once nothing, and now you are here. From the present, you know the absent: He who created you once will recreate you again.

This is the very method of algebra. In a problem, some numbers are present, but one part is hidden, absent. We call it *al-shay’*—the ‘thing.’ In time, it will be written with a single sign, the letter ش¹. And by the same Qur’anic method—inferring the absent from the present—we will learn to uncover the unknown.”

The circle stirred with awe. The Qur’an, trade, logic, and now algebra were all one path of inferring the absent from the present or uncovering the unseen by what is seen.

¹ Historical Note: The symbol **X** in European algebra comes originally from the Arabic word الشَّيْء (al-shay’), “the thing,” used by al-Khwārizmī and later Islamic mathematicians for the unknown. In Arabic manuscripts, it was often abbreviated with the letter ش (shīn). When these works were translated into Old Spanish and then Latin in medieval Andalusia, translators represented the “sh” sound with the letter **x**, which at the time was pronounced like “sh.” European mathematicians kept the symbol, and over the centuries **X** became the standard mark of the unknown.

Six: The Tool of the Equation

The Mīzān of Justice and Truth

After Abū ‘Abdullāh al-Khwārizmī had mastered the pillars of arithmetic and proof, the Imam prepared him for a new journey. His voice was calm but carried the weight of discovery:

“My son, you have learned to build justice with proof and to complete the count until tranquility fills the heart. But science now asks of you another key—a tool that balances the known and the unknown, so that what is hidden may be uncovered.

It is the *Equation*: the **mīzān**, the scale that makes two sides equal until truth speaks with the tongue of justice.”

Then the Imam opened the Qur’an and recited:

﴿وَالسَّمَاءَ رَفَعَهَا وَوَضَعَ الْمِيزَانَ﴾ (الرحمن: 7)

“He raised the heaven and set the balance.” (al-Raḥmān 55:7)

Ya’qūb whispered in awe, “So the order of the heavens themselves rests upon the *mīzān*?”

The Imam nodded. “Yes. The balance is not only for trade or

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numbers—it is written into creation itself.”

He recited again:

﴿أَلَّا تَطْغَوْا فِي الْمِيزَانِ﴾ (الرحمن: 8)

“Do not transgress within the balance.” (al-Raḥmān 55:8)

Ismā‘īl spoke quickly, “Just as in trade, master—if a merchant cheats the scale, he ruins the deal. Is this what God warns us of?”

The Imam replied, “Yes, Ismā‘īl. Whoever breaks the balance corrupts both commerce and the soul.”

He continued:

﴿وَأَقِيمُوا الْوَزْنَ بِالْقِسْطِ وَلَا تُخْسِرُوا الْمِيزَانَ﴾ (الرحمن: 9)

“Establish weight with justice, and do not make the balance deficient.”
(al-Raḥmān 55:9)

Abū ‘Abdullāh lifted his tablet thoughtfully. “Master, this is exactly what an equation does. It weighs both sides with justice, never losing or diminishing a single number.”

The Imam smiled. “You understand well, my son. To guard the balance in knowledge is as important as guarding it in trade.”

Finally, he recited:

﴿وَأَوْفُوا الْكَيْلَ وَالْمِيزَانَ بِالْقِسْطِ﴾ (الأنعام: 152)

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“Give full measure and weight in justice.” (al-An‘ām 6:152)

The students exchanged glances, their hearts stirred. One said softly, “So the *mīzān* is not only a command for buying and selling—it is the very foundation of truth, and the tool of logic.”

The Imam closed the Qur’an and said:

“Yes, my sons. In Arabic, we call the act of making two sides equal with justice **mu‘ādala**. This is the very word for the **equation**. It is the justice of numbers, the fairness of the scale, the law of balance in knowledge itself. Just as God commanded us not to cheat the *mīzān* in trade, so must we not cheat it in thought. The equation is the new *mīzān*—a balance that reveals truth and dispels doubt.”

The students felt a hush fall over the circle. A new science was about to be born.

At that moment, Ismā‘īl entered, holding a folded note in his hand, his face carrying both curiosity and challenge.

“Master,” he said, “here is a problem that feels like a riddle. A buyer purchased goods from me for ten dirhams. He gave me five and promised to pay the rest in a week. How much does he still owe?”

Some of the students laughed. “That is easy! Five remains!”

But Ismā‘īl shook his head. “Yes, it is simple when the total is known. But what if I did not know the total? Suppose all I know is that he paid me five, and a *thing* still remains. How do I uncover the unknown?”

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The Imam smiled. He took the tablet, drew a scale with two pans, and wrote upon it:

Total = 5 + a thing (شيء).

Then he looked at the students and said:

“If we know that the total is ten, we can uncover the hidden part. The *thing* equals ten minus five. So the thing is five.”

The laughter faded. The students saw that even a child’s riddle could open the door to a deeper science.

Ismā‘īl then drew out another note, his eyes shining with greater urgency.

“Master,” he said, “a man paid me an unknown amount. Then he added three dirhams and told me, ‘Now the total is nine.’ What was the first amount?”

A silence fell over the circle. This was no longer a problem of simple counting.

Ya‘qūb stroked his beard, thinking aloud. “This cannot be solved by direct reckoning. We need a deeper tool, one that gives the hidden *thing* a name and a place.”

The Imam nodded. He took the tablet, drew the same scale of balance, and wrote:

A thing + 3 = 9

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Then he raised his eyes to the circle. “Behold—the equation. The *mīzān* that balances the known against the unknown until the hidden truth appears.”

The students leaned forward. The birth of a new tool was before their eyes.

The Imam pointed to the word he had written: شيء — *al-shay’* — the thing.

“This is what we call the unknown,” he said. “It is not nameless, for every hidden truth must be given a place. We call it simply *the thing*.”

He paused, then added:

“And in the language of later scholars, this *thing* will be marked with a single letter—**X**.² The name may change, but the meaning is the same: uncovering what is hidden.”

The students exchanged glances, amazed that a single letter could carry so much weight. What seemed a simple mark was in truth a bridge to the unseen.

The Imam held the tablet before the circle. On it was written:

² The letter **X** comes originally from the Arabic word الشيء (*al-shay’*), “the thing,” used by al-Khwārizmī and later Islamic mathematicians for the unknown. In Arabic manuscripts, it was often abbreviated with the letter ش (*shīn*). When these works were translated into Old Spanish in Andalusia, the “sh” sound was commonly represented by the letter x, which at that time was pronounced like “sh.” This convention spread into Latin and then throughout Europe, later popularized by René Descartes. Thus the world’s use of **X** for the unknown is a legacy of Islamic algebra.

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$$\text{A thing} + 3 = 9$$

He drew the scale again, its two pans hanging in perfect balance. “This,” he said, “is where the two great operations are born: **al-jabr** and **al-muqābala**.

Al-jabr means restoring—removing additions or gaps, as if mending a broken bone.

Al-muqābala means balancing—keeping the two sides of the scale equal until the truth shows itself.”

He looked at the equation. “Here we perform al-jabr by taking away the 3. And we perform al-muqābala by keeping both sides in balance.”

He wrote:

$$\text{A thing} = 9 - 3 = 6$$

The circle brightened. The unknown had been uncovered with the same certainty as weighing gold on a merchant’s scale.

He looked at the circle, his voice calm but filled with certainty: “This, my sons, is the power of the equation—**al-mu‘ādala**. It restores (*al-jabr*), it balances (*al-muqābala*), and it reveals the truth hidden within.

For the very word *mu‘ādala* comes from ‘**adl**—justice. And God has commanded us in His Book:

﴿يَا أَيُّهَا الَّذِينَ آمَنُوا كُونُوا قَوَّامِينَ لِلَّهِ شُهَدَاءَ بِالْقِسْطِ وَلَا يَجْرِمَنَّكُمْ

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شَتَّانُ قَوْمٍ عَلَىٰ أَلَّا تَعْدِلُوا ۖ اْعْدِلُوا هُوَ أَقْرَبُ لِلتَّقْوَىٰ ﴿المائدة: 8﴾

*“O you who believe! Be steadfast for God, witnesses in justice, and do not let the hatred of a people prevent you from being just (equitable... hence the word **equation**). Be just; that is nearer to piety. And be mindful of God, for God is fully aware of what you do.”* (al-Mā'idah 5:8)

Just as no hatred should tilt justice, so no number should tip the balance. Each side must be held with fairness until the hidden truth stands revealed. This is the justice of numbers, the *mīzān* of knowledge.”

The students felt the weight of his words. Numbers were no longer mere tools of trade—they were witnesses of truth.

The Imam laid down the tablet, his face radiant with calm. “Thus the equation is born,” he said, “not as a lifeless mark scratched upon a tablet, but as a living *mīzān*—a scale of truth and justice.”

His voice grew steady and solemn as he lifted his hand, weighing the air as though holding invisible pans of balance.

“In the world of **commerce**, it is the servant of precision, guarding merchants from loss and confusion.

In the world of **logic**, it is a proof unshaken by doubt, a structure that stands firm like stone against the winds of argument.

And in the world of **justice**, it is a scale that cannot be tipped, weighing the hidden against the seen, restoring balance where imbalance threatens to reign.”

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The students sat in awe as the Imam concluded:

“The equation is the new scale. It makes the truth manifest. It brings the unseen into sight. It uncovers the unknown as surely as dawn uncovers what night has veiled. And in its light, the shadows of doubt scatter.”

A silence filled the room—tranquil, weighty, and complete. The *miẓān* of knowledge had been placed in their hands.

Lesson 17: The Logic of the Equation

The Spark of Justice

The Imam's circle glowed with excitement, as though something world-changing was about to be born. The students sat together in harmony, their eyes bright, their hearts beating with one desire: the search for truth. The air was thick with the smell of old books and incense, preparing them for a descent into the depths of the Qur'an.

The Imam had just spoken on *hunting the unknown*—how the Qur'an leads us from the things we see to the things we cannot see, until the heart finds **ṭmī' nān** (tranquility). Al-Khwārizmī felt his mind burning with new ideas, but before he could speak, Ya'qūb the logician raised his hand.

“Master,” he said, his voice trembling with awe, “why do we always believe that there is a fair solution hidden behind every problem? What makes us sure that behind the unknown there lies an equilibrium, as if the universe itself is waiting to reveal its balance?”

The Imam's face lit up, as if Ya'qūb had uncovered a hidden treasure. His voice was calm, but it carried the weight of the heavens:

“You have touched the root, Ya'qūb. This trust does not come from empty hope—it comes from the Qur'an itself. The Qur'an has built

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inside us a certainty that justice is not just a rule in courts or markets, but the very principle that holds the universe together. By justice the heavens stand, and by justice the earth continues. That is why, whenever we face the unknown, we expect balance—we search for it as a reflection of God’s justice.”

The Imam opened the Qur’an, his hands trembling with reverence, and recited:

﴿وَالسَّمَاءَ رَفَعَهَا وَوَضَعَ الْمِيزَانَ﴾ (الرحمن: 7)

“He raised the heaven and set the balance.” (al-Raḥmān 55:7)

Ya‘qūb gasped. “So justice is not only in markets or laws—it is written into the very sky!”

The Imam nodded. “Yes. The balance is not chance—it is the law of existence itself.”

He turned another page and recited:

﴿لَقَدْ أَرْسَلْنَا رُسُلَنَا بِالْبَيِّنَاتِ وَأَنْزَلْنَا مَعَهُمُ الْكِتَابَ وَالْمِيزَانَ لِيَقُومَ
النَّاسُ بِالْقِسْطِ﴾ (الحديد: 25)

“We sent Our messengers with clear signs, the Scripture, and the Balance, so that people may uphold justice.” (al-Ḥadīd 57:25)

The words shook the circle. Ismā‘īl the merchant leaned forward. “So the same Balance that holds up the sky is sent with the prophets to hold up justice among men? Master, this is a bridge between heaven and earth!”

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The Imam smiled. “Exactly, Ismā‘īl. Justice is the thread that ties the stars above to the contracts in your hand. It is the scale of the universe, and it is the command of God.”

Al-Khwārizmī felt his heart race. He whispered to himself, “If justice rules both the heavens and the market, then every problem must have an equal side, every riddle a hidden balance. This is the root of the equation—*al-mu‘ādalā*. And from this root will grow a new science, destined to change our civilization, and perhaps all of humanity.”

Ismā‘īl the merchant could not hold his tongue. He leaned forward, his brow furrowed with a practical question.

“Master, these words are wondrous and beautiful, but how does the balance of the heavens help me in the market? How does it affect my trade, my scales, and my accounts that swallow up my days?”

The Imam looked at him with kindness, his eyes filled with mercy. “Your question, Ismā‘īl, is the bridge we must cross. For justice is not only written in the stars—it is also commanded in our daily lives. God, who built the universe upon balance, commanded us to be its mirror on earth. Justice is no longer a choice; it is a duty, an act of worship.”

He opened the Qur’an and recited in a voice that stirred their hearts:

﴿إِنَّ اللَّهَ يَأْمُرُ بِالْعَدْلِ وَالْإِحْسَانِ وَإِيتَاءِ ذِي الْقُرْبَىٰ وَيَنْهَىٰ عَنِ الْفَحْشَاءِ وَالْمُنْكَرِ وَالْبَغْيِ يَعِظُكُمْ لَعَلَّكُمْ تَذَكَّرُونَ﴾ (النحل: 90)

“Indeed, God commands justice, doing good, and giving to relatives; and He

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forbids immorality, wrongdoing, and oppression. He instructs you so that you may be mindful.” (al-Nahl 16:90)

Ismā‘īl’s eyes widened. “So justice is not just a wise saying—it is a command! Just as I must pray and fast, I must also be just in every deal and every contract. My scales and my accounts are as sacred as my prayers.”

The Imam nodded. “Yes, Ismā‘īl. Justice in trade is worship. When you weigh honestly, when you write your accounts without deceit, you are not only fair to your fellow man—you are obeying the command of God who built the heavens upon the same justice.”

The students exchanged glances, their faces glowing with awe. They felt the Qur’an closing the gap between the cosmos and their daily lives.

And then, Ya‘qūb whispered, “So justice is both the law of the universe and the law of life. This must be the soil from which the idea of the equation grows.”

The Imam smiled gently, and the circle felt the weight of destiny pressing upon them.

The Imam turned another page of the Qur’an. His voice grew firm, like a scale settling into balance:

﴿يَا أَيُّهَا الَّذِينَ آمَنُوا كُونُوا قَوَّامِينَ لِلَّهِ شُهَدَاءَ بِالْقِسْطِ ۚ وَلَا يَجْرِمَنَّكُمْ شَنَاٰنُ قَوْمٍ عَلَىٰ أَلَّا تَعْدِلُوا ۚ اعْدِلُوا هُوَ أَقْرَبُ لِلتَّقْوَىٰ وَاتَّقُوا اللَّهَ ۚ إِنَّ اللَّهَ خَبِيرٌ بِمَا تَعْمَلُونَ﴾ (المائدة: 8)

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“O you who believe! Be steadfast for God, witnesses in justice, and do not let the hatred of a people prevent you from being just. Be just: that is nearer to piety. And be mindful of God, for God is fully aware of what you do.” (al-Mā'idah 5:8)

The students fell silent. They could feel the weight of the verse pressing on their hearts.

The Imam recited with a voice steady as the balance itself:

﴿وَلَا يَجْرِمَنَّكُمْ شَنَاٰنُ قَوْمٍ عَلَىٰ ۤأَلَّا تَعْدِلُوۡا ۖ اَعْدِلُوۡا هُوَ اَقْرَبُ لِلتَّقْوٰى﴾
(المائدة: 8)

“...Do not let the hatred of a people lead you away from justice. Be just: that is nearer to piety...” (al-Mā'idah 5:8)

Ismā'īl spoke first, shaking his head in wonder. “Master, even with those we hate? Even with enemies who wrong us? Must we still be just?”

The Imam looked at him steadily, his gaze unshakable. “Yes, my son. True justice is not swayed by love or by hate. Just as a scale must remain level no matter what is placed on it, so must your heart remain fair even when weighed down with anger. This is the meaning of God’s command: *i‘dilū*—*Be just*.”

Yaqūb raised his hand, his voice thoughtful. “This is like the logic of mathematics. The law of numbers favors no one. Two plus two equals four, whether it is for a friend or an enemy. An equation has no bias. Perhaps this is why the Qur’an made justice the root of the equation—*al-mu‘adala*.”

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The Imam smiled. “Well said, Ya ‘qūb. An equation cannot be twisted by hatred or by love. And a heart trained in Qur’anic justice cannot be tilted by bias or desire. Both are built on one foundation: balance in truth.”

The circle stirred, hearts trembling. They realized that justice was not just a moral command—it was the very logic that would birth algebra itself.

The Imam’s hand trembled slightly as he turned another page of the Qur’an. His voice carried both mercy and gravity as he recited:

يَا أَيُّهَا الَّذِينَ آمَنُوا كُونُوا قَوَّامِينَ بِالْقِسْطِ شُهَدَاءَ لِلَّهِ وَلَوْ عَلَىٰ
أَنفُسِكُمْ أَوِ الْوَالِدَيْنِ وَالْإِقْرَبِينَ إِنْ يَكُنْ غَنِيًّا أَوْ فَقِيرًا فَاللَّهُ أَوْلَىٰ بِهِمَا فَلَا
تَتَّبِعُوا الْهَوَىٰ أَنْ تَعْدِلُوا وَإِنْ تَلُوتُوا أَوْ تَعْرِضُوا فَإِنَّ اللَّهَ كَانَ بِمَا تَعْمَلُونَ خَبِيرًا
(النساء: 135)

“O you who believe! Be steadfast in justice, witnesses for God, even if it is against yourselves, your parents, or your close relatives. Whether the person is rich or poor, God is more worthy of both. Do not follow desire, lest you swerve. If you distort or turn away, God is fully aware of what you do.” (al-Nisā’ 4:135)

The verse fell heavy in the circle, like a mountain settling on their shoulders.

Ismā‘īl pressed his palms together, his face troubled. “Master... even if the truth is against my own father? Even if the loss is mine? How can anyone bear such a weight?”

The Imam looked at him with compassion. “Yes, Ismā‘īl. This is the peak of justice: to stand for truth even when it cuts your own flesh.

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This is why God linked it to Himself—*witnesses for God*. Justice is not loyalty to family, wealth, or tribe; it is loyalty to the truth of God.”

Ya‘qūb leaned forward, his eyes gleaming with discovery. “Master, this is like the equation once again! Two plus two equals four, even if it harms me, even if it harms my father. Numbers never bend to desire. And so God teaches us to be like numbers: firm, impartial, exact.”

The Imam’s smile was tinged with sorrow. “Yes, Ya‘qūb. The Qur’an asks us to rise above the pull of blood, wealth, and passion, until our hearts stand like an equation that cannot be swayed. This is justice in its highest form.”

The students sat still, their hearts shaken yet filled with awe. They felt as though the Qur’an was chiseling away their weaknesses, shaping them into a generation ready to carry the weight of truth—and to build a science rooted in that justice.

The Imam turned the pages of the Qur’an once more, his voice calm yet unyielding, like a scale settling perfectly into balance:

﴿وَإِذَا قُلْتُمْ فَاعْدِلُوا وَلَوْ كَانَ ذَا قُرْبَىٰ ۖ وَبِعَهْدِ اللَّهِ أَوْفُوا ۚ ذَٰلِكُمْ وَصَّاكُم بِهِ لَعَلَّكُمْ تَذَكَّرُونَ﴾ (الأنعام: 152)

“When you speak, be just, even if it concerns a close relative. And fulfill the covenant of God. This He commands you, so that you may remember.” (al-An‘ām 6:152)

The words struck the students like a blade of truth.

Ya‘qūb whispered, half to himself, “Even words... even

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promises... must be weighed like goods in a scale.”

Ismā‘īl frowned, thinking of his daily trade. “Master, so if I give my word in the market, even casually, I must fulfill it as if it were a written contract?”

The Imam nodded firmly. “Yes, Ismā‘īl. Every word is a trust. Every promise is a covenant. Just as a merchant must not cheat in his scales, a believer must not cheat in his speech. For speech itself is a scale that tips hearts toward truth or falsehood.”

Al-Khwārizmī raised his eyes from his tablet, excitement glowing on his face. “This is like the equation, master! If one number is missing or one side is bent, the whole truth collapses. A promise left unfulfilled is like an equation left broken—it no longer carries justice.”

The Imam’s eyes sparkled. “Well said, Abu ‘Abdullāh. Justice in speech, in covenants, in trade, in law—it is all one. This is the foundation from which the equation—*al-mu‘ādala*—will rise. A scale for numbers, a mirror of divine justice.”

The students looked at one another, their hearts racing. They felt that with every verse, every analogy, a new science was being laid before them—one that would change their civilization and perhaps all of humanity.

The Imam’s gaze swept across the circle, as if seeing not only the faces of his students but the future of an entire civilization. His voice deepened as he recited:

﴿فَأَصْلِحُوا بَيْنَهُمَا بِالْعَدْلِ وَأَقْسِطُوا إِنَّ اللَّهَ يُحِبُّ الْمُقْسِطِينَ﴾

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(الحجرات: 9)

“Make peace between them with justice, and act justly. Indeed, God loves those who act justly.” (al-Ḥujurāt 49:9)

The students listened in silence. The verse felt like a river flowing beyond the small banks of their circle, into the wider world.

Ismā‘īl leaned forward, his voice quiet but urgent. “Master, this is no longer about one man’s trade or one man’s promise. This is about nations, families, tribes. God commands that justice must even heal wars?”

The Imam nodded, his eyes shining. “Yes, my son. The *mīzān* is not only for your market scales, nor only for the equations of your proofs. It is for reconciling hearts and restoring peace. Just as a scale cannot tip to one side without spilling everything, so society cannot lean to one side without collapsing. Justice is the balance that keeps a people standing.”

Ya‘qūb raised his chin, his voice filled with admiration. “So justice is the one law that rules from the atom to the stars, from the market stall to the battlefield. Wherever there is imbalance, corruption follows. Wherever there is balance, life and peace are restored.”

Al-Khwārizmī pressed his hand to his chest, his heart racing. “Then the equation, *al-mu‘ādala*, will not only solve the riddles of numbers. It will mirror this divine command, this cosmic justice, this healing of society. Every solution it gives will be a shadow of God’s justice.”

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The circle felt the weight of destiny again. They were not just learning mathematics. They were witnessing the birth of a science that would carry God's command of justice into the very fabric of knowledge.

The Imam turned another page of the Qur'an, his hands trembling with reverence. His voice softened, but each word fell with the weight of eternity:

﴿إِنَّ اللَّهَ لَا يَظْلِمُ مِثْقَالَ ذَرَّةٍ ۖ وَإِنْ تَكَ حَسَنَةً يَّضَاعِفْهَا وَيُؤْتِ مِنْ لَدُنْهُ أَجْرًا عَظِيمًا﴾ (النساء: 40)

“Indeed, God does not wrong even by the weight of an atom. And if there is a good deed, He multiplies it and grants from Himself a great reward.” (al-Nisā’ 4:40)

Ismā‘īl gasped, his eyes shining. “An atom’s weight, master! In my trade, I dream of scales that never miss even a grain. But here is the greatest scale of all—God Himself! This gives me absolute tranquility—**iṭmi’ nān** that no honesty, no integrity, no grain of effort is ever lost.”

The Imam nodded. “Yes, Ismā‘īl. This is the justice that never errs, the scale that no hand can tilt.”

Then he recited again, his voice carrying like a bell through the circle:

﴿...وَلَا يَظْلِمُ رَبُّكَ أَحَدًا﴾ (الكهف: 49)

“...And your Lord does not wrong anyone.” (al-Kahf 18:49)

Ya‘qūb’s face lit with wonder. “Master, this is the strongest

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proof! God not only says He is just, but He specifies the measure: *an atom's weight*. This is logic beyond Aristotle—it is the proof that closes every door to doubt. If even the smallest unit of existence is held in justice, then all of reality is safe from injustice.”

Al-Khwārizmī pressed his fingers against his tablet, his heart racing. “Then my science, master, must follow this same rule. My algorithms must never wrong anyone or anything even by an atom’s weight. Every calculation must always yield the same correct result—today, tomorrow, for anyone, anywhere. If my method permits injustice, then it is not worthy of the Qur’anic scale.”

The Imam’s eyes shone with pride. “Well said, Abu ‘Abdullāh. This is why the equation—*al-mu ‘ādala*—was destined to be born in a Muslim mind. It is not only a mathematical tool. It is a mirror of God’s justice, a reflection of His balance, an echo of His eternal fairness.”

The circle sat in awe. The connection was complete: from the stars, to the market, to society, and now to the very attributes of God. The equation was no longer a human invention—it was the fruit of a divine mindset.

The circle was still, heavy with awe. The words of the Qur’an echoed in their hearts like a great bell that would never fade.

Al-Khwārizmī looked down at his tablet, then raised his eyes to the Imam, his face glowing with realization. His voice trembled, not with fear, but with destiny:

“Master, now I understand the true purpose of my work. I am

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not inventing a tool for merchants to count their coins more quickly, nor for judges to settle disputes more easily. No—what I am seeking must be a reflection of God’s justice.

“My algorithms must mirror His balance. They must not wrong anybody or anything even by the weight of an atom. They must always give the same correct result, in any place, at any time, for any person, as if they were laws of creation itself. For if a system allows error or injustice, then it is weak, it is corrupt, it is unworthy of the Qur’anic scale.”

The students stared at him, their hearts racing. They saw in his words the seed of something immense, something that would live long after their circle was gone.

Ya‘qūb whispered, his eyes wide, “Abū ‘Abdullāh, your science is no longer just mathematics—it is justice written in numbers.”

Ismā‘īl leaned closer, his voice hushed but filled with excitement. “And it will change trade, law, even the way nations keep their records. If your algorithms mirror God’s justice, then they will stand forever, like the heavens that never collapse.”

The Imam looked at al-Khwārizmī with pride and mercy, his eyes shining as if he saw the centuries to come. “Yes, my son. You have spoken the truth. This is why the *mu‘āḍala*—the equation—will not die. It will outlive us all, because it is born from the Qur’an’s mindset of justice. And through it, you will give to the world a tool that binds knowledge to fairness, reason to faith, the seen to the unseen.”

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The circle was silent again. Each heart felt the weight of history pressing upon them. They knew they were standing at the threshold of a discovery that would change not only their own lives, but the destiny of civilizations.

The Imam let the silence linger. He wanted the weight of al-Khwārizmī's words to settle in their hearts like seeds falling into fertile soil. Then, with a calm voice that carried the power of mountains, he spoke:

“Well said, Abū ‘Abdullāh. You have understood the heart of this matter. The equation—*al-mu‘ādala*—is not merely a trick to solve sums or a symbol scratched on a tablet. It is the fruit of the Qur’anic mindset, a mindset that sees justice as the foundation of existence itself.

“Look at what the Qur’an has taught us:

Justice in the heavens, where balance holds the stars.

Justice in God’s very Self, who does not wrong by even an atom’s weight.

Justice as a command in our lives, in our speech, our trade, our promises, our courts, and even in reconciling enemies.

“When these three pillars come together, they build a palace of tranquility in the heart. Whoever lives by them cannot help but search for balance, cannot help but expect equilibrium, cannot help but discover the equation hidden behind the unknown.”

The Imam raised the Qur’an in his hands, his eyes shining with

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reverence. “This is why the Qur’an paired the *Book* with the *Balance* (*the mīẓān*). This is why the prophets came with both truth and justice. And this is why, my sons, algebra is not only a science of numbers—it is a science of justice, destined to carry the spirit of the Qur’an into the language of mathematics.”

The students felt as though the roof above them had been lifted and they could see the heavens stretched out in perfect order. Their hearts swelled with a new certainty: the equation was not a human invention, but a reflection of divine wisdom.

The Imam placed the Qur’an gently before him, then reached for al-Khwārizmī’s tablet. With steady hands, he drew a single line across it, dividing it into two sides, like the beam of a balance.

He looked at the students, his eyes filled with both tenderness and gravity. “This,” he said, “is the new *mīẓān*. It is called *al-mu‘ādalā*—the equation. Just as God commanded: ‘*adilu*—*be just*, so too the equation restores balance. It makes two sides equal until truth reveals itself with the tongue of justice.”

The students leaned forward, holding their breath. The air itself seemed to tremble.

“From this moment,” the Imam continued, “every riddle of numbers, every unknown that hides itself like a shadow, will be placed on this scale. The known and the unknown will stand face to face, and as long as the balance is preserved, the truth will be uncovered.”

Ismā‘īl whispered, his voice shaking, “So this is not just a tool

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for merchants. It is the scale of knowledge itself.”

Ya ‘qūb pressed his hand to his chest. “And it is justice in its purest form, like the laws of the Qur’an written into the language of numbers.”

Al-Khwārizmī felt his heart pound like a drum of destiny. He touched the line the Imam had drawn, his fingers trembling. “Then this, master, is the birth of algebra.”

The Imam’s voice deepened, carrying the weight of centuries yet to come. “Yes, my sons. Today you have witnessed not only a lesson, but the rising of a sun. This *mīzān* will carry the justice of the Qur’an into science. It will transform trade, law, knowledge, and the very way humanity uncovers the unknown. And as long as it reflects the balance of God, it will never perish.”

The circle sat in silence, their hearts overflowing with awe. They knew they were no longer students of a single lesson—they were witnesses to a moment that would echo through the ages.

Seven: The Three Tools of Algebra

Al-mu'ādala, Al-jabr, and Al-muqābala

The Birth of a New Science

The Imam's circle glowed that evening as if the lamps themselves leaned closer to listen. The students sat with pens poised, hearts racing, as though a hidden treasure was about to be revealed.

The Imam spoke, his voice calm yet carrying the force of a tide: “My sons, until now you have learned to count what is known. But today... today we begin the science that captures the absent, the **unknown**.”

The words struck the students like thunder.

Ismā'il leaned forward, his brow furrowed like a merchant staring at a puzzle in the market.

“Master, the unknown thing—the shay' (الشَيْء)? How can we count what has no name, no weight, no form? How do we seize what is unseen?”

The Imam's eyes glimmered, and he gestured toward the tablets lying before them.

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“With the tool of **al-mu‘ādala**—the **Equation**. In Arabic, it comes from the word *‘adl*—justice, balance—*mīzān*. Imagine a scale: whatever stands on one side must be equal to what stands on the other. In your equations, you will do the same. You place the known on one side, the unknown on the other, and when both are made equal, the hidden truth reveals itself.”

A murmur rippled through the circle, the word **al-mu‘ādala** rolling across their tongues like a new key just discovered.

But Ya‘qūb, the sharp-eyed logician, raised his hand.

“Master, what if the equation itself is broken? What if something is missing, as though a bone has been fractured? A scale cannot stand when one side is deficient.”

The Imam nodded, his voice deepening with gravity.

“Then comes the second tool: **al-jabr**. Do you know its meaning? It is to set a broken bone, to mend what is deficient, to restore what is incomplete until it stands whole again. In this science, when one side of the equation is lacking, we perform *jabr*—we add what is missing to restore justice, so that the balance is made right once more.”

The students’ eyes widened, as though they had glimpsed healing in the very fabric of numbers.

But Ismā‘īl pressed further, restless as a merchant in a crowded bazaar.

“And what if the problem itself is tangled, Master? Both sides crowded with unknowns and numbers, confusion piled upon confusion.

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How then can we uncover the truth?”

The Imam’s smile spread, as if this was the question he had been waiting for. He lifted his hand gently.

“Then you need the third tool: **al-muqābala**. It means to place like against like, to set terms face to face, and to cancel the excess until only the essence remains. Just as merchants cancel debts to settle the account, so too do you cancel numbers and unknowns until the truth stands bare.”

The chamber fell silent. The three words—**al-mu‘ādala**, **al-jabr**, **al-muqābala**—hung in the air like three luminous stars forming a new constellation.

Abū ‘Abdullāh al-Khwārizmī felt his pulse quicken, his voice barely a whisper:

“With these three tools—the Equation to balance, al-jabr to mend, and al-muqābala to simplify—no riddle will remain hidden. The unknown can no longer escape us.”

The Imam’s eyes shone, his voice dropping to a whisper that trembled with destiny:

“Yes, my sons. These are not tricks of calculation. They are the pillars of a new science. With them, you will not only solve numbers—you will uncover a wisdom as deep as the balance of the heavens themselves. And this is the birth of **al-jabr wa-l-muqābala**.”³

³ Historical Footnote: Al-Khwārizmī’s book was titled in full:

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«الكتاب المختصر في حساب الجبر والمقابلة»

(al-Kitāb al-Mukhtaṣar fī Ḥisāb al-Jabr wa-al-Muqābala)

—“The Compendious Book on Calculation by Restoration and Balancing.”

Written in the early 9th century in Baghdad, this was not only the first great book of algebra, it was also the text that gave the world the very word algebra. The Arabic word al-jabr (الجبر) literally means restoration or mending—like setting a broken bone—while al-muqābala (المقابلة) means balancing or simplifying by opposition. Together, they describe the two main operations by which equations are solved: restoring what is missing and balancing both sides until clarity is reached.

The importance of this book cannot be overstated. For the first time in history, problems were expressed in general forms using unknowns (the “thing” = shay’), and solved systematically, not just by guessing or by geometry. This was the moment when mathematics shifted from calculation about the known, to reasoning about the unknown.

When the book was translated into Latin in the 12th century, European scholars adopted its title. They could not pronounce al-jabr easily, so they Latinized it into algebra, and that name has been used in every language of science since.

Through this work, al-Khwārizmī became known as the “Father of Algebra,” and his methods spread across the world. From the inheritance laws of Islamic courts to the calculations of engineers, merchants, and astronomers, the science of al-jabr wa-al-muqābala reshaped daily life. It became one of the greatest gifts of Islamic civilization to humanity, laying the foundation for modern mathematics, engineering, physics, and computer science.

Lesson 18: The Logic of the Al-Mu‘ādala

Portraying the Unknown in an Equation

The Riddle That Refused to Rest

The Imam’s circle felt quiet and full of energy. Lamps glowed softly, making warm circles of light on the walls. The air smelled like old books and a bit of incense, as if it was ready for something new to happen.

Ismā‘īl sat on his mat, looking worried. His forehead was wrinkled, and he tapped his fingers on his knee like he was holding in a big question. Finally, he couldn’t wait anymore and said loudly:

“Masters, a merchant’s riddle is stuck in my head like a big mountain! A man told me: ‘I have some money. If I add ten dirhams to it, it becomes twenty-five. What is that amount?’”

He leaned forward, his voice getting louder like a fire starting. “This riddle keeps bothering me! All the ways we learned to add and subtract don’t help. It’s not just numbers—it’s a tricky secret!”

The other students looked at each other. Some smiled awkwardly, feeling the same confusion but not wanting to say it. Others waited for the Imam to speak.

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But the Imam stayed quiet. He looked at Ismā‘īl with calm eyes, like he wanted the question to grow bigger before answering. His silence made everyone think harder.

In his mind, Ismā‘īl wondered: If ten plus this ‘thing’ makes twenty-five, it must be fifteen. But that’s just a guess! What if the problem was harder, with multiplying or dividing mixed in? We’d be lost like people in a dark place.

He squeezed his hands tight. “Master, I can weigh fruit, measure fabric, count money. But how do I find something that’s hidden? How do I grab what I can’t see?”

Everyone went quiet. The riddle felt heavy in the air, waiting for an answer.

Then Ya‘qūb spoke up. He was always calm and smart. He lifted his head, his eyes showing he thought he had it figured out.

“Brother Ismā‘īl,” he said, “your riddle isn’t that scary. Think simply: something plus ten equals twenty-five. Take away the ten, and what’s left? Fifteen. It’s clear like the sun in the sky. Just use good thinking.”

He opened his hands like he was showing something easy. “It’s like reading from an open book. The answer comes when you think straight.”

Some students nodded, feeling better with Ya‘qūb’s words. Others still looked unsure, like the answer didn’t fully solve the puzzle.

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Ismā‘īl leaned closer, looking frustrated. “Ya‘qūb, that works for this easy one. But what if the ‘thing’ is multiplied or divided, like in tough family inheritance problems that cause arguments? Will simple thinking always work, or will we get stuck?”

His voice got stronger, his hands moving like he was cutting through the air. “No, brother. Guessing, even smart guessing, won’t help for harder things. We need a better tool—something reliable, like a real method that works every time.”

The group felt tense, like a debate was starting. Some agreed with Ya‘qūb’s easy logic. Others felt Ismā‘īl was right about needing something sure.

The Imam stayed quiet, watching everyone. He was like the calm center in a windy storm, letting them talk until the time was right.

The debate between Ya‘qūb’s sure words and Ismā‘īl’s strong need grew louder. Then the Imam raised his hand. Everything went still, like even the lights wanted to hear.

“My sons,” he said, his voice strong but kind, like a steady river, “you both have part of the truth. But the truth is one big piece, not little bits.”

He looked at Ya‘qūb first. “You’re right—good thinking guides us step by step. But it can get lost when problems are complicated, with many unknowns.”

Then he looked at Ismā‘īl, who still looked eager. “You’re right too. People like merchants or farmers need a way that’s fast and always

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works, for simple or hard problems. But rushing without a plan is like trying to catch birds with your hands—you might get lucky once, but not always.”

The Imam looked at everyone. His words felt important, like a big idea was coming.

“We need something that combines both: careful thinking like Ya ‘qūb’s, but useful like Ismā‘īl wants. A way to find hidden things clearly and fairly.”

He pointed to a brass scale in the middle—a tool merchants use to weigh things like silver or food. He touched it gently, but his words made it seem huge.

“This is the answer,” he said. “Like a scale weighs things fairly, we can weigh the unknown against what we know. This is **al-mu ‘ādala**—the equation. It balances both sides until the truth comes out perfectly.”

The students moved closer, staring at the simple scale like it was a gate to something amazing.

The brass scale shone in the light, its two sides moving a little like they felt the ideas. The Imam’s hand stayed on it.

He looked at Abū ‘Abdullāh al-Khwārizmī, who sat quietly with a writing tool in his hand. The Imam’s eyes showed trust and a challenge.

“Abū ‘Abdullāh,” he said, his voice strong like a wave, “you know how to handle known numbers. Now try something bigger. How can we

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put Ismā‘īl’s riddle on this scale? How can the hidden ‘thing’ face the numbers fairly, without mistakes?”

Everyone went very quiet. Only the lamps made soft sounds, like they were excited.

Al-Khwārizmī looked at the scale. His mind filled with ideas about family shares, shop accounts, and shapes. Each needed exactness and fairness. But the unknown—this ‘shay’—didn’t fit regular math.

Then an idea grew clear in his mind. His hand stopped shaking. He breathed steadily.

“It’s simple, master,” he said, though he sounded amazed. “But it’s also huge, like the order of the world. I’ll put the unknown—call it ‘sh’ for shay’—on the right side. Next to it, the ten dirhams. On the left, the twenty-five. When it balances, we’ll see the truth, because fairness requires equality.”

He drew on his tablet:

$$\text{sh} + 10 = 25$$

The marks looked powerful in the light. The students breathed in sharply, like seeing something new born.

The Imam’s eyes brightened, and he smiled wide like morning light. He stood a bit, his voice full of wonder.

“God is great! This is it!” He pointed to the drawing. “You turned a story into something real—something you can see and balance!

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You changed confusion into clear structure.”

He looked up, then said in a strong voice:

﴿وَالسَّمَاءَ رَفَعَهَا وَوَضَعَ الْمِيزَانَ * أَلَّا تَطْغَوْا فِي الْمِيزَانِ﴾ (الرحمن:

(8-7

(“He raised the sky and set up the balance, so that you may not transgress in the balance.” (al-Raḥmān 55:7–8)

The words filled the room with old power.

Ya‘qūb touched his chest, amazed. “Master, the Qur’an connects the sky to this balance! It’s the rule that keeps everything in place, like stars moving.”

Ismā‘īl shook a little, humbled. “It tells merchants like me: don’t cheat even a tiny bit! Cheating hurts people and the whole world.”

Abū ‘Abdullāh looked between the scale, his drawing, and the words. “Now I see,” he said softly. “Ya‘qūb sees the big world rule, Ismā‘īl sees the right-way-to-act rule. The equation connects them. The equals sign is like God’s balance in everything.”

The Imam nodded proudly. “Yes. Your equation echoes the sky.”

The Imam leaned closer to Abū ‘Abdullāh, his voice serious but helpful.

“Now, how will you find the unknown’s value without breaking the balance or the world’s fairness?”

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Abū ‘Abdullāh breathed deep, like crossing a thin path. He touched the scale and his tablet.

“Master,” he said steadily, “the ‘sh’ is with ten on one side. To get it alone, I take away the ten—but I must take ten from the other side too, like the Qur’an says.”

He pretended to remove coins from both sides. The scale stayed even.

“What’s left is ‘sh’ on one side and fifteen on the other.”

He wrote:

$$\text{sh} + 10 - 10 = 25 - 10 \rightarrow \text{sh} = 15$$

The room felt relieved. Students looked amazed.

Ismā‘īl clapped happily. “No more a riddle! It’s fifteen dirhams, clear and fair!”

Ya‘qūb’s eyes glowed. “This is real logic, like the world finding peace.”

The Imam praised. “God is great! You revealed the hidden with balance. This is a new science, born here.”

The group felt excited, like they saw a new idea start. But Ya‘qūb raised his hand, thinking deeper.

“Master,” he said, “is the ‘balance’ in the Qur’an just this, or does

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it mean more?”

The Imam smiled, like he expected that. His eyes looked bright.

“You asked a great question, Ya ‘qūb. The balance isn’t one thing—it’s a system of fairness with different sides, showing God’s wisdom. I’ll explain four ways it appears.”

He touched the Qur’an and said:

﴿وَالسَّمَاءَ رَفَعَهَا وَوَضَعَ الْمِيزَانَ * أَلَّا تَطْغَوْا فِي الْمِيزَانِ * وَأَقِيمُوا
الْوَزْنَ بِالْقِسْطِ وَلَا تُخْسِرُوا الْمِيزَانَ﴾ (الرحمن: 7–9)

“And He raised the heaven and set up the balance, so that you may not transgress in the balance. Therefore, establish weight in justice, and do not fall short in the balance.” (al-Raḥmān: 7–9)

The words felt strong and refreshing.

Ya ‘qūb looked surprised. “Amazing! It ties creation to fairness. It’s how planets and stars stay in place—a big equation for everything.”

Ismā‘īl added eagerly. “It warns merchants: don’t cheat, or you hurt trust in society.”

The Imam agreed. “Yes. First, it’s cosmic, ruling the world. Second, it’s ethical, for honest dealings. And there’s more.”

His voice got serious.

﴿وَنَضَعُ الْمَوَازِينَ الْقِسْطَ لِيَوْمِ الْقِيَامَةِ فَلَا تُظْلَمُ نَفْسٌ شَيْئًا...﴾

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(الأنبياء: 47)

“We will set up the scales of justice on the Day of Resurrection, so that no soul will be wronged in the least...” (al-Anbiyā’: 47)

Students felt a chill. Thinking of a final weighing made them thoughtful.

Abū ‘Abdullāh whispered, “Like the end of a math problem, but for our actions.”

The Imam touched the brass scale. “The fourth way is this everyday tool—for weighing food or goods honestly. It starts small, but leads to bigger fairness.”

The students looked at the scale with wonder. It seemed like a sign of the whole world, life, and forever.

The Imam waited quietly, then pointed to the tablet’s mark:

$$\text{sh} + 10 = 25$$

“Look at this small sign—two lines together. It seems basic, but it holds a big secret connecting sky and ground.”

Ismā‘īl blinked. “It’s just a mark.”

Ya‘qūb thought. “But those lines are even, like perfect fairness.”

The Imam glowed. “Yes. This equals sign comes from the Qur’anic balance. It means both sides must match. If you change one,

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change the other, or it's unfair."

He said again:

﴿وَلَا تُخْسِرُوا الْمِيزَانَ﴾ (الرحمن: 9)

"Do not fall short in the balance." (al-Raḥmān 9)

Abū ‘Abdullāh said in awe, "Writing this echoes a world rule. Both sides stay equal, like harmony everywhere."

The Imam nodded. "It's a promise. In math, add or take from both sides. In life, be fair and honest."

Ismā‘īl's eyes grew big. "So solving problems teaches us to be good, even with hidden things!"

The Imam smiled brightly. "That's it. The equation trains fairness, shows creation, and reminds us of judgment. These two lines hold the world's wisdom."

The students stared at the sign. In it, they saw stars moving together, fair markets, clean hearts, and the last weighing where nothing is missed.

It was just an equals sign, but it felt like it held forever in its lines.

The Imam looked at everyone slowly. His voice was kind but strong.

"My sons, what happened on this tablet mirrors what God put in

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the world. Hear His words.”

He opened the Qur'an and said solemnly:

﴿وَالسَّمَاءَ رَفَعَهَا وَوَضَعَ الْمِيزَانَ * أَلَّا تَطْغَوْا فِي الْمِيزَانِ * وَأَقِيمُوا
الْوَزْنَ بِالْقِسْطِ وَلَا تُخْسِرُوا الْمِيزَانَ﴾ (الرحمن: 7–9)

*“And He raised the heaven and established the balance, so that you may not transgress in the balance. Therefore, weigh with justice, and do not fall short in the balance.” (al-Raḥmān 55:7–9)

Ya‘qūb shook with amazement. “Our equation isn’t just numbers—it copies a big rule. The heavens stay up because everything balances.”

Ismā‘īl added, full of wonder. “In shops, cheating even a little breaks that rule and hurts everyone.”

The Imam agreed, eyes bright. “The equation holds a huge secret. Add to one side, add to the other. Take from one, take from both. Don’t cheat. This isn’t just math—it’s fairness, good living, and how God will check our actions one day.”

He closed the book softly, hand on it like the center of everything.

“Each time you write equals (=), remember it’s God’s sign of balance, joining sky and ground. Don’t ignore it. In this line, no secret stays hidden, and no wrong lasts before truth’s scale.”

The students looked at the simple answer:

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sh = 15

But to them, it was a sign of God's rule—that everything, seen or not, is fair, and people must keep that balance.

The lesson ended in light and quiet. They felt like they saw the start of a science that would help people, build societies, and change the world.

Lesson 19: The Logic of Al-Jabr

The Art of Mending Deficiency and Restoring Perfection

The circle of students still carried the glow of yesterday's triumph. Abū 'Abdullāh had unveiled the secret of balancing an equation upon the Scale, and for a brief moment the air was rich with the sweetness of victory. Yet knowledge never grants rest without trial. Like a gatekeeper, it demands another key before allowing the traveler to pass further.

The very next morning, Isma'īl stepped into the gathering, his face alive with mischief. He held his tablet close to his chest as though it were a treasure, or perhaps a hidden snare.

"Abū 'Abdullāh," he began, lowering the tablet onto the floor before him, "a wool merchant posed me a puzzle. He said: *I have a 'thing' of money. From it I subtracted five dirhams to pay the porters, and ten dirhams remained in my hand. Tell me, how much was this 'thing' in the beginning?*"

The words hung in the air like the toll of a bell. The students leaned forward instinctively, their hearts drawn to the riddle. It seemed simple, almost childlike—but everyone sensed that its simplicity was the trap. A question about loss, about restoring what had been taken away. A broken form waiting for a healer's hand.

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All eyes turned to Abū ‘Abdullāh. Would he stumble, or would he forge from this moment a new principle of knowledge?

With steady fingers, he took the tablet, dipped his stylus in ink, and wrote with confidence:

$$\text{sh} - 5 = 10$$

The characters looked harmless on the clay surface, yet his hand froze as soon as they appeared. His gaze lingered on the sign of subtraction like a wound that refused to close.

Yesterday’s challenge had been clear: $sh + 10 = 25$. That was simple—remove the surplus from both pans of the Scale, and balance was restored. But now? How does one remove what is already absent? How can a void be weighed?

A silence spread across the room. Then Ya‘qūb, his voice sharp and deliberate, broke it:

“This is impossible with a physical Scale. You cannot place a ‘negative five’ into the pan. It is like trying to weigh a shadow or to measure the echo of a sound. It belongs not to the world of matter, but to the realm of the mind.”

The students murmured. Some frowned, as if their very sense of reality had been challenged. Others smiled with nervous excitement. For what is a greater adventure than to follow reason into a land where hands cannot touch and eyes cannot see?

The silence in the room deepened, like a pond waiting for a stone

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to break its surface. Then the Imām raised his hand, and the air itself seemed to listen.

“You are right, Ya‘qūb,” he said gently. “You cannot place a deficiency on a scale of gold. But who told you that our Scale is for gold alone? We are not measuring coins or jewels. We are measuring truths. And in the world of truths, deficiency is very real. Ignorance is a deficiency in knowledge. Sickness is a deficiency in health. Sin is a deficiency in faith.”

The students’ eyes widened. They felt the ground beneath them shifting—this was no longer a merchant’s riddle, but a door into the unseen.

The Imām turned toward Abū ‘Abdullāh and his broken equation. “This equation of yours,” he said, “is not wrong—it is wounded. And what is wounded must be mended. The key to this mending lies in a great word of our language and our faith: **al-jabr.**”

The word seemed to echo in the chamber, powerful and tender at once.

The Imām’s eyes softened. His voice flowed like water down a mountainside.

“Before *al-jabr* was a science, my sons, it was a state of being. When we say, *jabara al-‘azm*, ‘he mended the broken bone,’ we mean he restored it to wholeness. The wooden splint we bind to that bone is called *jabīrah*. And when we console a brother in grief, we pray, *May God jabar your affliction*, that is, may He mend your wound and restore your

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strength. At its root, *al-jabr* means to remove deficiency in order to return a thing to perfection.”

The students breathed the word softly to themselves: *al-jabr*... *al-jabr*. It no longer sounded like arithmetic, but like healing.

Ya‘qūb leaned forward, his brow furrowed, his voice carrying both wonder and unease.

“Master, this is a great matter. But one thing troubles me. I have heard *al-jabr* also means compulsion—power that forces the will. How can a word that suggests coercion give birth to a science built on persuasion and reason?”

The Imām’s gaze lingered on him, steady and warm, like the glow of a lamp that neither flickers nor fades.

“Your question is fitting, Ya‘qūb. It shows that you do not accept an idea until you have circled it from all its sides. Indeed, the first meaning of *al-Jabbār* is the Compeller—the One whose will cannot be resisted, who acts as He pleases. But listen well: the Qur’an teaches us a great lesson. This form of compulsion belongs to God alone. It is His attribute, and it is forbidden for human beings to claim it.”

The Imām raised his hand toward the Qur’an, his voice ringing with reverence as he recited:

﴿وَمَا أَنْتَ عَلَيْهِمْ بِجَبَّارٍ﴾ (سورة ق: ٤٥)

“...you are not there to force them...” (Qur’an, Qāf: 45)

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The words fell into the students' hearts like arrows of light. Even the beloved Prophet (PBUH), who was the most honored of all creation, was told that compulsion is not his mission. Guidance must come through wisdom, not force.

Abū 'Abdullāh al-Khwārizmī's face glowed with sudden realization. His eyes lifted as if tracing invisible words written across the heavens.

"Subḥān Allāh!" he exclaimed. "It is an explicit prohibition! It is as though God Himself says to His Prophet: *Your mission is to convey and to persuade, not to compel or to coerce.*' Then surely, *jabr* in the sense of force is not an attribute of righteous humans. The *al-jabr* that is being born before our eyes is not a *jabr* of compulsion, but a *jabr* of mercy."

The Imām's lips curved into a knowing smile. He nodded, his voice both thunder and tenderness.

"Exactly! And indeed, the Qur'an makes this truth plain: when human beings claim *jabr* as compulsion, it becomes a mark of arrogance and ruin."

He recited with solemn reverence:

﴿...وَحَابَ كُلُّ جَبَّارٍ عَنِيدٍ﴾ (سورة إبراهيم: ١٥)

"...and every stubborn tyrant came to ruin." (Qur'an, Ibrāhīm: 15)

The words struck the circle like a hammer against iron. Their echo vibrated not only in ears but in hearts.

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At that moment, Isma‘īl—the merchant who had brought the riddle—spoke, his voice carrying the rough honesty of the marketplace.

“By God, this is the truth! I have seen such tyrants in the bazaar. Merchants who use their power to crush the small traders, forcing them into losses they cannot bear. At first, they seem to win, filling their coffers with ill-gotten profit. But always, in the end, they fail. They lose the trust of the people, and the blessing vanishes from their wealth. Their abundance turns to dust.”

The students looked at one another, nodding. The parable of the market made the verse blaze with meaning.

The Imām raised his hand again, his voice firm as a mountain yet flowing like a stream.

“So here is the summary, my sons: *al-jabr* in the sense of absolute power is perfection only for God. But in human hands, it turns to deficiency and tyranny. This is why the science we seek cannot spring from that meaning. Instead, it must drink from the second spring—the spring of mercy and beauty. *Al-jabr* as reform, as healing, as restoration.”

He paused, letting the stillness spread over the circle like the calm that follows a storm. Then, slowly, he lifted his gaze. His eyes glowed as if unveiling a secret stitched into the fabric of the stars.

“This word is no ordinary word,” he said, his tone hushed yet mighty. “It is the very essence of the mission of the prophets. For every prophet was sent to mend what was broken, to restore what was corrupted, to heal what was wounded. This is practical *al-jabr*: reform

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that descends into the lives of men and lifts them back toward perfection. It is the splint upon the broken bone of society, the soothing balm upon the wounds of history, the restoration of balance after loss. This, my sons, is the meaning that gives our science its soul.”

The circle sat in awed silence, their hearts warmed by the vision: a science not of cold numbers but of living mercy—mathematics as the art of mending.

The Imām’s voice grew tender as he leaned forward, his eyes gleaming with both wisdom and compassion.

“Listen to the Prophet of God, Shu‘ayb, peace be upon him, as he summarizes his entire life’s mission in a single verse”:

﴿...إِنْ أُرِيدُ إِلَّا الْإِصْلَاحَ مَا اسْتَطَعْتُ...﴾ (سورة هود: ٨٨)

“...*I only want to put things right as far as I can...*” (Qur’an, Hūd: 88)

The words floated into the circle like a healing fragrance.

Isma‘īl the merchant could no longer hold back. He pressed his hand to his chest, his voice trembling as though the verse had struck a hidden chord within him.

“O God! What a phrase—it shakes one’s very being! In the marketplace, this is what we do day after day. We reconcile those in dispute, we mend corrupt deals, we restore the honor of merchants who have been falsely accused. Truly, the mission of an honest merchant is not to hoard gold, but to reform what has been corrupted in the dealings of people.”

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The Imām's eyes softened, and he inclined his head approvingly. "You have interpreted it well, Isma'īl. But remember—this matter is greater than the marketplace. It reaches into every field of life."

Ya'qūb the logician, his brow furrowed with excitement, suddenly lifted his hand. His voice carried both clarity and fire.

"It has become clear to me now! The prophets were like wise physicians. They looked upon a society and saw its sickness—whether polytheism, injustice, or corruption. Their mission was to diagnose this flaw and then prescribe an algorithm of reform: the divine law. By this, the society could be returned to health and balance. Truly, the entire prophetic mission is a vast process of *jabr*—a healing, a mending of human society!"

A ripple of awe passed through the students. They could feel the weight of the revelation, as if a curtain had been pulled back and the pattern of history itself was suddenly visible.

The Imām nodded in deep agreement. His gaze then moved to Abū 'Abdullāh al-Khwārizmī, who had remained silent, his eyes wide with intensity. His lips moved faintly, as if he were whispering equations to himself in the secret language of the mind.

Finally, the Imām called to him: "And you, Abū 'Abdullāh? What do you see in this verse?"

The young scholar lifted his head slowly, as though awakening from a long trance. His face was pale with the weight of realization, yet his eyes burned with the fire of discovery. His voice erupted—half

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ecstasy, half submission.

“Only now... only now do I understand the true purpose of this science! My broken equation— $sh - 5 = 10$ —is not merely a calculation problem. It is a mirror, a miniature image of the society of the Prophet Shu‘ayb, peace be upon him. Just as his town was a broken equation in its values and its trade, so too is my equation broken in its numbers. In both cases, there is a deficiency that screams against justice. And just as Shu‘ayb called for *iṣlāḥ*—for reform—so must my equation be healed by *al-jabr*. Nothing else can restore balance.”

The words left his lips like lightning, striking every heart in the circle. The students sat frozen, caught between awe and joy. It was no longer a riddle of numbers—it was a vision of life itself.

Abū ‘Abdullāh’s voice trembled with awe as he declared:

“My mission, then, is not just to calculate and solve. It is to share—at the smallest measure—in the mission of the prophets: to restore what was broken to its perfection, what was imbalanced to its equilibrium, and what was corrupted to its soundness.”

The words settled over the circle like a mantle of light.

The Imām gazed upon him, his expression a mixture of tenderness and authority, the kind a father shows to a son who has at last understood his inheritance.

“This is the summary, my sons,” he said slowly, each word weighted with meaning. “*Al-jabr*, in its deepest meaning, is the act of reform. And for this reason, any science that mends a flaw, repairs a

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deficiency, or makes life easier for people is not merely a worldly pursuit. It is an act of worship, a righteous deed, among the most sublime ways a servant draws nearer to his Lord.”

A hush fell upon the room. The students lowered their eyes, and in the quiet, each one felt his own hidden fractures—the doubts, the sins, the regrets—yearning to be mended. It was as if the very air whispered: *You, too, are in need of jabr.*

The Imām let the silence deepen before his voice returned, now carrying a solemn force, like the echo of a command written into eternity.

“We have seen,” he continued, “that reform (*islah*) is the mission of the prophets. But the Qur’an teaches us something even deeper: reform is not only the goal of prophecy—it is also the very condition for the greatest correction in a person’s life, which is repentance. Without reform, repentance is incomplete. God does not accept a turning of the tongue that is not matched by a mending of the deed. Repentance, therefore, is not merely regret—it is the work of repairing what was broken, restoring balance where it was lost, and walking once more upon the straight path.”

He then recited with clarity, his voice steady and ringing:

﴿إِلَّا الَّذِينَ تَابُوا وَأَصْلَحُوا وَبَيَّنُّوا فَأُولَٰئِكَ أَتُوبُ عَلَيْهِمْ...﴾ (سورة البقرة:

(١٦٠

“Except for those who repent, reform, and proclaim; it is they whose repentance I will accept...” (Qur’an, al-Baqarah: 160)

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The verse landed in the students' hearts like a seal. They understood now: *al-jabr* was not just a tool for solving equations. It was the law of healing in every sphere—numbers, societies, and souls alike.

Ya'qūb the logician leaned forward, his eyes sparkling as if he were reading lines of code etched into the air. His voice rang with precision.

“How wondrous! It is a complete and rigorous conditional algorithm! Notice—it does not simply say: *‘if they repent’*. No, it sets three exact conditions that must all be met: **(they repented) AND (they reformed) AND (they proclaimed)**. If even one condition is absent, the result—the acceptance of repentance—does not occur. What astonishing logical precision! It is an equation of the soul, written with divine clarity.”

The students marveled. For the first time, they felt the Qur'an speaking in the very language of logic, the same structure they had been training their minds to follow.

Isma'īl the merchant, however, saw it in the mirror of his daily life. He lifted his hands and exclaimed,

“This is exactly like what happens when a merchant sells a defective product! If he wants to correct his mistake, regret in the heart alone is not enough—*that is repentance*. He must take back the faulty goods and return the money to its owner—*that is reform*. Then he must warn the people openly so that no one else falls into the same loss—*that is proclamation*. Only then does the trust of the market return to him. For regret without reform leaves the wound unhealed.”

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The circle murmured in agreement. The analogy lit the truth like a lantern hung in the busy marketplace.

All eyes turned to Abū ‘Abdullāh al-Khwārizmī. He sat in silence, his stylus trembling between his fingers, his brow furrowed as if a storm of numbers was clashing in his mind. At last he spoke, his voice low, almost reverent.

“Now I see something new in my broken equation, $sb - 5 = 10$. I once thought my task was only to discover the value of sb . But this verse has taught me that the real solution lies not merely in identifying the deficiency, but in *mending* it. The operation of *al-jabr*—adding +5 to both sides—is the very act of reform itself! It is not a mere trick of calculation. It is the positive step that restores the equation to balance, just as reform restores a soul or a society to justice.”

A silence fell, heavy and sweet, as though heaven itself had nodded.

Then the Imām lifted his hand and concluded, his words carrying the calm certainty of revelation.

“This is the summary, my sons. The Qur’an teaches that repentance is not an escape from the past, but a responsibility to reform it. And so it is with your science. A strong algorithm is not one that never errs, but one that carries within itself the power to uncover error, to correct it, and to restore the system to its rightful state. True strength lies not in never stumbling, but in rising each time with clarity and justice.”

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The students sat still, their hearts burning. They felt as if they were no longer only learning mathematics—they were being initiated into a way of life.

The circle held its breath. All eyes fixed upon Abū ‘Abdullāh. His tablet lay before him, the broken equation etched clearly upon its surface:

$$\text{sh} - 5 = 10$$

The young scholar lifted his stylus slowly, as though it were a surgeon’s scalpel about to heal a wound. His voice carried both wonder and resolve.

“Here is the deficiency,” he said, pointing to the -5 . “It cries out, demanding to be mended. So what must we do? We do not leave the wound open. We perform *al-jabr*. We restore the missing part. We place back the five that was taken away—not on one side only, but upon both sides equally, so that balance is preserved.”

His hand moved, deliberate and clear. Beneath the first line he wrote:

$$\text{sh} - 5 + 5 = 10 + 5$$

The students leaned closer. The once-confusing gap was being filled before their eyes.

Abū ‘Abdullāh smiled faintly, his voice steady now. “The deficiency is mended. The brokenness is healed. And the equation breathes again, whole and sound.”

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He simplified the expression with a final stroke of his stylus:

sh = 15

The room seemed to exhale all at once. What had been wounded was restored. What had been broken was made perfect.

Ya‘qūb whispered, almost to himself, “So this is the essence of *al-jabr*—not only the discovery of truth, but the healing of what was fractured to reach it.”

The Imām closed his eyes for a moment, as if savoring the fragrance of the scene. Then he opened them and spoke with serene authority.

“Remember, my sons: every equation carries within itself the possibility of error, just as every soul carries within itself the possibility of sin. But the greatness of both lies not in never being touched by deficiency, but in knowing the path of *al-jabr*—the path of mending, restoring, and rising again in balance and perfection.”

The students sat in awe, their hearts alive with the realization that mathematics was not cold numbers but a mirror of divine order—a science with a soul.

Ya‘qūb the logician’s eyes gleamed with excitement as he turned to Isma‘īl.

“You have struck the very core of the truth, Isma‘īl. And look at the logic here—it is wondrous! The verse does not say, *‘We do not waste the reward of the righteous.’* It specifies instead: *‘the reformers.’* And the difference

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is vast. The good of a righteous person may end with himself, but the good of a reformer extends beyond, reaching out to mend what others have broken. His rank is higher, and for that reason his reward is preserved by a special promise.”

The students nodded in amazement, their hearts drawn upward by the thought that righteousness was not only inward piety, but outward healing.

Abū ‘Abdullāh al-Khwārizmī sat in silence, turning the idea over in his mind as if rolling a jewel in his palm. At last, he raised his head, and his voice came forth—half discovery, half reverence.

“Now everything is complete. I once thought that *al-jabr* was merely the name of a calculation process. But now I see that it is more—a complete manifesto. When I perform *jabr* on a broken equation, I am not engaged in a dry technical act. I am joining one of the most sublime of good deeds. I become a reformer in the world of numbers. I restore balance to what is imbalanced. I mend the deficiency so that perfection may return. May God, in His mercy, write us among the register of the reformers.”

The Imām’s face shone with quiet joy. He looked at Abū ‘Abdullāh with the satisfaction of a teacher whose seed had blossomed.

“This is the goal, Abū ‘Abdullāh,” he said. “That you see in your science a doorway to the knowledge of God and a path of nearness to Him. Now you have gained the second tool. With the *Scale*, you portray the problem. With *al-Jabr*, you mend its deficiency. But if the problem grows complex and its parts intertwine, you will need the third and final

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tool.”

He paused, his eyes sweeping the circle. “Do you see, my sons? The Qur’an teaches that reform and mending are not small acts. They are a cosmic law and a supreme ethical value. And now, Abū ‘Abdullāh—how will you apply this great principle to mend your broken equation?”

All eyes turned. The young mathematician drew his tablet closer, his hand steady, his heart burning. He spoke with confidence:

“Now I understand! To mend the equation $sh - 5 = 10$, I must *jabr* the right side by restoring to it the five that was taken away. And to keep the balance, I must add five also to the other side.”

His stylus scratched firmly across the clay:

$$sh - 5 + 5 = 10 + 5$$

He lifted the stylus, his voice clear and triumphant.

“And thus, the ‘thing’ is restored to its complete state on one side, and its solution shines forth on the other.”

$$sh = 15$$

The students gasped, their eyes wide with wonder. In that moment, they knew they were not only witnessing the solving of a riddle, but the birth of something far greater.

When al-Khwārizmī wrote those lines, he was not merely writing

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a solution. He was writing a new page in the history of science. That moment marked the birth of the *Science of al-Jabr*.⁴

It was no mere mathematical trick. It was the living manifestation of a Qur’anic idea—the art of mending what is broken, of restoring balance to the world, and of raising knowledge to the level of worship.

⁴ Historians of mathematics agree that the formal birth of algebra (‘ilm al-jabr) is attributed to Muḥammad ibn Mūsā al-Khwārizmī (c. 780–850 CE), whose book al-Kitāb al-Mukhtaṣar fī Ḥisāb al-Jabr wa-al-Muqābala (“The Compendious Book on Calculation by Completion and Balancing”) laid the foundation of algebra as a distinct science. The very word “algebra” in English (and other European languages) is derived directly from the Arabic term al-jabr.

Lesson 20: The Logic of Al-Muqabala

The Art of Simplification and Focusing on the Essence

We had now arrived at one of the most powerful and recurring principles in the Qur’anic method of construction. *Al-Muqābala*—the art of contrast and balancing—is not simply a flourish of eloquence or a trick of style. It is a complete methodology for thinking, for clarifying, for stripping away confusion, and for presenting truths with luminous precision. To this great tool the Imām dedicated an entire lesson, unveiling its depths and drawing upon the Book of God to show its full range of types and instruments.

After Abū ‘Abdullāh had dazzled the circle with the brilliance of *al-jabr*—mending broken equations and restoring their balance—Ya‘qūb the logician leaned forward. His eyes gleamed with anticipation, and a smile flickered at the corner of his lips. He laid his tablet carefully upon the ground. The numbers upon it curled and twisted like vines tangled in a thicket.

“Abū ‘Abdullāh,” he said, his voice carrying both admiration and challenge, “you have shown us how to mend equations when the unknown hides upon one side. But what if the problem itself is crowded, knotted, intertwined? What if the unknowns stand on *both* sides, pressing against each other like disputants in a crowded court, each demanding

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the judge's attention?"

The circle grew silent. The weight of the riddle pressed upon every heart. The students bent closer, tablets in hand, eager to see whether the new tool—the art of *al-muqābala*—contrast and balance—could slice through the tangle and bring forth the essence.

With deliberate strokes, Ya'qūb wrote upon the tablet:

“Five things plus ten dirhams, is equivalent to two things plus forty dirhams.”

Abū 'Abdullāh studied the lines, then quickly transformed them into their symbolic form:

$$5sh + 10 = 2sh + 40$$

Isma'īl gasped softly, leaning over the numbers. “This is complex!” he said, shaking his head. “The unknown—the *thing*—is on both sides! And even the known numbers are scattered! How can we ever isolate the *thing* by itself?”

The students looked on with wide eyes. It felt as if the very heart of science was being tested. Could the method of *al-muqābala*—contrast and balance—truly reveal clarity where confusion seemed unbreakable?

The Imām raised his hand, and the circle quieted at once. His voice carried both warmth and authority.

“You are right, Isma'īl. To solve such crowded problems, we

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need the third and final tool of algebra—the tool of organization and simplification. It is *al-muqābala*.”

The students leaned in, eager, their tablets poised to capture every word.

“The essence of *al-muqābala*, my sons,” the Imām continued, his voice flowing like a measured rhythm through the room, “is to place similar things face to face, and then to cancel out the surplus until only the essence remains. It is a great Qur’ānic principle. It trains us to strip away illusion and distraction, so the mind may rest upon what truly matters. In this way, we learn to separate the essential from the superfluous, the real difference from the false one.”

He paused, his hand brushing across the open pages of the Qur’ān as though he were touching the very current of meaning itself. His eyes glowed.

“Come,” he said softly, “let us dive into the tools of this *muqābala*. The Qur’ān deploys them in manifold ways, each fashioned for a distinct purpose, each reflecting a facet of divine wisdom. In their symmetry we see not only the balance of language, but the balance of the universe itself.”

Then the Imām reached for the tablet, lifted the stylus, and began to write and explain.

“The first and most powerful tool is: Contrast by Opposites. Its purpose is decisiveness and absolute clarity. It is the tool the Qur’ān employs when it wishes to unveil truth against falsehood in a way that

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leaves no room for hesitation. It does not persuade you step by step. Rather, it sets two opposites before you at once, striking the mind like lightning with the force of reality.”

His voice rose, deep and resonant, as he recited:

﴿وَمَا يَسْتَوِي الْأَعْمَىٰ وَالْبَصِيرُ * وَلَا الظُّلُمَاتُ وَلَا النُّورُ * وَلَا الظُّلُّ وَلَا
الْحَرُّ * وَمَا يَسْتَوِي الْأَحْيَاءُ وَلَا الْأَمْوَاتُ...﴾ (سورة فاطر: ١٩-٢٢)

“The blind and the sighted are not equal, nor are the depths of darkness and the light, nor the shade and the scorching heat. The living and the dead are not equal...” (Qur’ān, Fāṭir: 19–22)

The words filled the room like a blazing lantern, their symmetry casting both shadow and light across the students’ faces. They felt the verses not as abstract comparisons, but as thunderbolts of clarity—an unveiling of truth so sharp that no argument could dull its edge.

A solemn silence fell over the circle. The verses had landed with the weight of mountains. Then Isma‘īl the merchant broke the hush, his voice simple yet full of feeling.

“There is no power and no strength save in God! This is an argument that not even a small child could refute! How can the cool shade be equal to the killing heat? And how can the living ever be equal to the dead? The difference between them is like the difference between everything and nothing!”

The students nodded, sensing the raw clarity of his words.

Ya‘qūb the logician, however, leaned forward, his eyes glittering

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with sharp intelligence.

“You have touched upon the sensory side, Isma‘īl,” he said. “But the logical aspect is even more wondrous! The Qur’an here is using what we call *proof by opposing negation*. It does not pause to define *faith* for us. Instead, it places faith face to face with its absolute opposite—disbelief—*the light and the darkness*. Then it simply declares that they cannot be equal. And since the mind itself affirms the impossibility of their equality, it is compelled to acknowledge their difference—and, in doing so, to affirm the superiority of one over the other.”

The students turned toward Abū ‘Abdullāh al-Khwārizmī, eager to see how his mathematical mind had translated this majestic logic.

He lifted his stylus and spoke calmly. “This example has taught us that the shortest path to solving a crowded equation is *al-muqābala*. Instead of wrestling with each part separately, we contrast the similar terms and cancel them out, so that only the essential differences remain. Just as the Qur’an cancels blindness from both sides, leaving only the seeing in its brilliance—so too we cancel equal terms from both sides of the equation, leaving only the essence standing, shining alone.”

The Imām nodded with deep satisfaction. His voice rang out like a seal upon the lesson.

“This is the summary, my sons: **Contrast by Opposites is the algorithm of decisiveness**. It takes what is crowded, tangled, and confused, and reduces it to its simplest truth. It makes the seeing shine, the light glow, and life itself manifest, leaving nothing afterward but acknowledgment and submission.”

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He paused, then raised his hand, signaling that another dimension awaited them.

“The second tool: Contrast by Consequence—to show the value of choice.”

“We have seen,” the Imām continued, “how the Qur’an uses contrast by opposites to cut through confusion with absolute clarity. But there is another tool—more tender to the heart and more commanding to the will. It is *contrast by consequence and recompense*. This tool does not compare the two actions directly. Rather, it sets you at a fork in the road, then paints before your eyes the final scene to which each path leads.”

Then his voice rose, reciting the verses like a vision of destiny:

﴿فَأَمَّا مَنْ أَعْطَىٰ وَاتَّقَىٰ * وَصَدَّقَ بِالْحُسْنَىٰ * فَسَنُيَسِّرُهُ لِلْيُسْرَىٰ *
وَأَمَّا مَنْ بَخِلَ وَاسْتَغْنَىٰ * وَكَذَّبَ بِالْحُسْنَىٰ * فَسَنُيَسِّرُهُ لِلْعُسْرَىٰ﴾ (سورة
الليل: ١٠-٥)

“For the one who gives, is mindful of God, and trusts in goodness—We shall smooth his way towards ease. But for the one who is miserly, considers himself self-sufficient, and denies goodness—We shall smooth his way towards hardship.”
(Qur’an, al-Layl: 5–10)

The words painted two roads before their eyes—one glowing with ease, the other darkened with hardship. Each student felt as though he stood at that fork himself, trembling at the clarity of choice.

Abū ‘Abdullāh al-Khwārizmī could not contain himself. His eyes lit with the fire of recognition, and he interjected immediately, his voice alive with discovery.

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“Glory be to God! This is the *binary branching algorithm* in its most complete form! It does not describe a single road, but a whole system of choices, each path unfolding into its destined result.”

Ya‘qūb the logician clapped his hands together softly, as though sealing a truth.

“True!” he exclaimed. “And what is even more wondrous is that the contrast here is not simply between two actions—*giving* and *miserliness*—but between two *outcomes*: (being eased towards ease) and (being eased towards hardship). It teaches us to judge our present actions not with the eyes of today, but with the eyes of the future!”

Isma‘īl the merchant, for his part, leaned forward, the verse striking him in the place he knew best—the marketplace.

“This verse,” he said, “is full of commercial wisdom! It teaches us that the real profit is not in what we clutch in our hands today, but in the final return of our investment. He who *gives* is investing in *ease* for tomorrow. And he who is *miserly* is purchasing *hardship* for himself in the future. It is a long-term deal, one that no wise merchant can afford to ignore!”

The circle murmured in awe. Each saw the verse from his own world, yet all saw its truth converge.

Then the Imām continued, his tone now solemn, his words heavy with the weight of destiny.

“This method of contrast by consequence reaches its peak in the Qur’an when it reduces all of human history, with its endless stories and

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deeds, into two final outcomes, uttered in the shortest, most decisive phrase.”

He recited with a voice that seemed to divide the heavens themselves:

﴿...فَرِيقٌ فِي الْجَنَّةِ وَفَرِيقٌ فِي السَّعِيرِ﴾ (سورة الشورى: ٧)

“...some will be in the Garden and some in the blazing Flame.” (Qur’an, al-Shūrā: 7)

The words reverberated in the chamber. Some of the students shivered, as though they could already feel the cool breeze of the Garden or the scorching heat of the Flame.

“There is no comparison more decisive than this,” said the Imām. “All the actions of mankind, all their choices, all their paths—summarized into two outcomes, with no third. The purpose of this tool is to show us the true value of our choices, so we realize that every step we take today is, in truth, a vote for our place tomorrow.”

He allowed the silence to thicken, then lifted his stylus once more.

“The third tool: Contrast by Striking Parables—to make meanings accessible.”

“We have seen,” the Imām explained, “how the Qur’an uses contrast by opposites for decisiveness, and contrast by consequence for guidance. But what if the idea itself is too abstract, too lofty, too deep—like the unseen effect of a *good word*? How can it be made

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tangible? Here arises the third tool: *contrast by striking parables*.”

His voice softened, yet carried the richness of a gardener planting seeds.

“It is not a mere simile. It is the crafting of a miniature model of the truth—something you can see with your imagination and touch with your heart.”

Then the Imām recited, his tone flowing like water nourishing an orchard:

﴿أَلَمْ تَرَ كَيْفَ صَرَبَ اللَّهُ مَثَلًا كَلِمَةً طَيِّبَةً كَشَجَرَةٍ طَيِّبَةٍ أَصْلُهَا ثَابِتٌ
وَفَرْعُهَا فِي السَّمَاءِ * ... وَمَثَلُ كَلِمَةٍ خَبِيثَةٍ كَشَجَرَةٍ خَبِيثَةٍ اجْتُثَّتْ مِنْ فَوْقِ
الْأَرْضِ مَا لَهَا مِنْ قَرَارٍ﴾ (سورة إبراهيم: ٢٤-٢٦)

“Have you not seen how God sets forth a parable? A good word is like a good tree whose root is firm and whose branches are high in the sky... and the parable of a bad word is like a bad tree, uprooted from the surface of the earth, with no power to endure.” (Qur’an, Ibrāhīm: 24–26)

The students closed their eyes as the verses washed over them. In their minds, they saw the mighty tree rising heavenward, its roots clinging to the soil of truth, its branches heavy with fruit. And beside it they saw the barren stump, ripped from the ground, with nothing to hold it firm.

Isma‘īl the merchant sighed deeply, his eyes moist as though he had seen a vision.

“O God! This is an image I shall never forget for as long as I live! I used to think a ‘good word’ was just a kind phrase we utter to please

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another. But this verse has made me see it as a living tree—its roots buried firm in the soil, its branches reaching the sky, its fruits nourishing, its shade comforting. And it has made me fear the ‘bad word’ as though it were a poisonous, uprooted weed, with no root and no origin. Ideas have become things—living, breathing things!”

The students felt the weight of his words. They, too, could almost see the orchard blooming before them.

“Well said, Isma‘īl!” replied Ya‘qūb the logician, his eyes shining. “This is the precise power of the parable. And the logic here is *proof by analogy*. It does not attempt to win you by debate. Instead, it presents a system you already know—the tree—and invites you to apply its laws to a new system—the word. By this bridge, the abstract is made concrete, and the unseen becomes visible.”

The Imām then lifted his hand, his voice rising with new strength.

“And sometimes, my sons, the Qur’ān combines these two methods—contrast by opposites and the striking of parables—within a single verse, so that the light of meaning shines at its brightest.”

He recited in a voice that carved images into the air:

﴿مَثَلُ الْفَرِيقَيْنِ كَالْأَعْمَى وَالْأَصْمَى وَالْبَصِيرِ وَالسَّمِيعِ هَلْ يَسْتَوِيَانِ مَثَلًا...﴾ (سورة هود: ٢٤)

“The parable of the two groups is that of the blind and the deaf, and the seeing and the hearing. Can they be compared?...” (Qur’an, Hūd: 24)

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The room was filled with the force of the verse. The blind and the deaf stood on one side, the seeing and the hearing on the other—and the mind itself declared, *They cannot be equal*.

At this moment Abū ‘Abdullāh al-Khwārizmī spoke, his face glowing with the joy of connection.

“Now I see clearly how this Qur’ānic method inspires us in our science! When we face an equation too tangled and abstract to grasp, the best way to understand it is to *strike a parable for it*. That is, to build a simpler, smaller problem that follows the same laws. If we can solve the small problem—the parable—we gain the method to solve the larger, original one. This is how the mind cuts through complexity: by turning it into a model it can hold in its hand.”

The Imām’s eyes softened, and his words flowed like a river carrying light.

“This is the summary, my sons: **the striking of parables is a great Qur’ānic tool that transforms abstractions into living images**. It teaches the seeker and the scientist alike that the shortest path to solving the complex may be to build a simple model for it. Thus the mind, guided by parables, can transcend from the seen to the unseen, from the near to the far, from the small to the great.”

The students sat in silence, their imaginations alive with trees, roads, markets, and equations. They began to see the Qur’ān not only as a book of faith, but as the grand school of thought from which even the laws of science could be born.

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The Imām then turned toward Abū ‘Abdullāh, his gaze steady, expectant.

“And now, my son—apply this very method. Contrast the similar terms in your equation, and let their balance guide you to simplicity.”

Abū ‘Abdullāh bent over his tablet, the wax glinting under the soft lamplight. His hand was steady, for his heart had grasped the principle.

“We have the equation,” he said, “**5sh + 10 = 2sh + 40**. I will first contrast the *things*, then the *numbers*.”

With deliberate strokes he wrote:

“On one side we have **5sh**, on the other side **2sh**. I will cancel the smaller common amount—**2sh**—from both sides, so that the scale remains in balance.”

The students leaned in, their eyes wide, as if they were not watching numbers, but the unveiling of a cosmic law.

$$5sh - 2sh + 10 = 2sh - 2sh + 40$$

He lifted his stylus. “And the equation becomes simpler”:

$$3sh + 10 = 40$$

The circle exhaled softly. It was as if a knot had loosened before their eyes.

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Abū ‘Abdullāh’s voice grew firmer, his strokes sharper, his stylus scratching across the tablet like a chisel carving order into stone.

“Now, we have **10** on one side, and **40** on the other. I will cancel the smaller common amount—**10**—from both sides.”

With swift lines he struck the numbers, as though wiping dust from a mirror. What remained gleamed with clarity:

$$3sh = 30$$

A collective gasp rose from the students, as if the equation itself had spoken, its secret finally revealed.

They looked upon Abū ‘Abdullāh with awe. In his hands, the tangled problem had dissolved into pure simplicity, just as the Qur’ān dissolves confusion into truth.

“Thus,” Abū ‘Abdullāh continued, lifting his head with quiet triumph, “the *thing* is equal to **10**. The hidden has been unveiled, the riddle untangled. By *al-muqābala*, the balance is restored.”

The Imām’s smile spread across his face, radiant like the breaking of dawn after a long night.

“Well done, my son,” he said. “You have not merely solved an equation—you have walked the very path of the Qur’ān. For the Qur’ān itself teaches us to weigh, to balance, to strip away excess until the truth stands alone, clear and undeniable.”

Then the Imām rose slightly, his voice steady yet glowing with

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the warmth of discovery.

“Thus, the three tools are now complete for you, Abū ‘Abdullāh. With the *Al-mu‘āḍala*, you portray the problem. With *al-jabr*, you mend its deficiency. And with *al-muqābala*, you simplify its complexity. With these three tools, there is no equation that cannot, by God’s permission, be solved.”

A deep silence fell over the circle, so profound it seemed even the walls of the mosque leaned inward to listen. The flickering lamplight danced upon the students’ faces, their eyes wide, their hearts heavy with reverence. In that stillness, each knew they had reached a summit.

Abū ‘Abdullāh now possessed the three great tools—arithmetic in its living form. He understood the **pillars of construction**: the algorithm as the very engine of reason. And he had realized the **principles of architecture**: the symmetry and structure that gave the system its enduring strength.

The science of *al-jabr wa-al-muqābala* was no longer numbers upon a tablet. It had become a mirror of divine wisdom, a path where reason bowed to revelation, and discovery turned into worship.

But just as the peak of a mountain reveals only one horizon while concealing others beyond, so too does science—even when its tools are mastered—veil truths greater than itself. For the world is not exhausted by calculation alone, nor is truth confined to the silent certainty of numbers.

“There is a greater secret,” the Imām said at last, his voice

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lowered to a whisper that seemed to expand into the silence. “It is the light that animates these tools, that breathes into them spirit, turning them from dry procedures into living guidance. Without this light, your equations are lifeless symbols. With it, they become *āyāt*—signs—that guide you to the unseen as surely as they solve the seen.”

In that moment, the circle felt as though the very air was trembling. The tablets, the numbers, the chalked-out symbols that had been their battlefield seemed suddenly to dissolve into something vaster, something radiant.

Here—where number falls silent and light begins to speak—Abū ‘Abdullāh crossed into the third axis: the *holy of holies* of the journey. And in this sacred realm, equations would no longer be mere solutions to problems. They would become unveilings of the secret of the Qur’ān, echoes of its *bayān logic*, reflections of a wisdom that bound the cosmos to revelation.

If Al-Khwarizmi Spoke to Us Today?

The Imām fell silent and closed the page of the lesson, like one who blows out a lamp once its duty is done. Abū ‘Abdullāh remained seated, staring at the tablet covered with numbers and equations. Then he closed his eyes, as if he were listening to a whisper carried from another age.

In his imagination, he saw that the paths opened today did not end in Baghdad, nor did they stop at the students’ tablets. They would cross seas and continents, awakening minds centuries later. He could almost hear the scratch of pens in old libraries, the tapping of keyboards in computer labs, and the beeping of satellites circling above our modern skies.

Then he turned—not to his students of long ago, but to us, the readers of today—and said:

“My sons and daughters, you have seen that science is not built on tools and algorithms alone. It lives through the light that guides them. The world before you is like a great equation, waiting for you to uncover its unknowns and to connect its numbers to meaning and truth. Do not be slaves to machines. Let light guide your vision and your steps.”

His voice seemed to pulse with both his time and ours:

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“Do not be deceived by the towers of technology. Without justice and clarity, they become empty towers that watch the world but never heal it. And do not stop at a silent calculation. If numbers are cut off from the call of the Qur’ān, they can turn into weapons that destroy instead of tools that build.”

Then he lifted his hand, as if addressing every young reader one by one:

“You are the generation of tomorrow. Your eyes rest on glowing screens, but it is your hearts that must ignite the true light. Revive the Logic of Bayān in your studies, your research, and your inventions. Do not let science become dry like cold numbers. Make it justice that gives life, wisdom that guides, and mercy that saves humanity and the earth.”

At last al-Khwārizmī fell silent. He closed his eyes, as if passing the banner into the hands of those yet to come.

And on the horizon, a verse echoed like an eternal lantern of guidance:

﴿اللَّهُ نُورُ السَّمَاوَاتِ وَالْأَرْضِ... نُورٌ عَلَى نُورٍ يَهْدِي اللَّهُ لِنُورِهِ مَنْ يَشَاءُ﴾ (سورة النور: ٣٥)

“God is the Light of the heavens and the earth... Light upon light. God guides whoever He wills to His Light.” (Qur’an, al-Nūr: 35)

And we knew then that the story had not ended—rather, it had only begun again, in our own time.

Appendices

The novel “Al-Khwarizmi, Son of the Qur’an” was not merely a story to be told, but a journey that opened the doors to a deeper world. The scenes and dialogues you have read are but keys to a wider horizon; the appendices here are the maps that complete this journey.

Perhaps the reader—especially from the younger generation—will ask after closing the pages of the novel:

How do we transform the principles that Abu Abdullah learned into practical tools?

What are the historical and scientific facts that lie behind the scenes and events?

How do we connect the Quranic logic with our needs in the digital age?

The appendices that follow these pages are not a literal interpretation of the novel. Rather, they are “side passages” through which the reader may enter another dimension, to see what lies behind the narrative, and to understand more about:

The origins of the Khwarizmian mind.

The meanings of the Scale, Al-Jabr, and Al-Muqabala.

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The historical extension of calculation and algorithms.

And the Quranic message that makes science a source of insight and guidance.

They are pathways of light that detail what was brought together, clarify what was mentioned in brief, and connect what appeared as literature and metaphor to principles and rules that can serve as references for researchers and students.

So read them as one who walks down a side corridor that leads to a courtyard deeper than the original conversation. And do not forget that the light of the Quranic logic remains the axis of the journey and is the key that joins all of these paths together.

Appendix 1: The Quranic Evidence for the Revolution of Calculation

1. Calculation as a Cosmic Law

The Almighty said:

﴿إِنَّ عِدَّةَ الشُّهُورِ عِنْدَ اللَّهِ اثْنَا عَشَرَ شَهْرًا فِي كِتَابِ اللَّهِ يَوْمَ خَلَقَ السَّمَاوَاتِ وَالْأَرْضَ...﴾ (سورة التوبة: ٣٦)

The number of months with God is twelve—in God’s book, the day He created the heavens and the earth...

(Qur’an, At-Tawbah: 36)

In this verse, the Qur’an links the creation of the heavens and the earth with a calculated system of time, thus making calculation an eternal principle connected to creation itself. This establishes in the Islamic mind the idea that every cosmic reality is calculated and ordained.

2. Calculation as a Scale of Justice

The Almighty said:

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﴿وَنَضَعُ الْمَوَازِينَ الْقِسْطَ لِيَوْمِ الْقِيَامَةِ فَلَا تُظْلَمُ نَفْسٌ شَيْئًا وَإِنْ كَانَ مِثْقَالَ حَبَّةٍ مِنْ خَرْدَلٍ أَتَيْنَا بِهَا وَكَفَى بِنَا حَاسِبِينَ﴾ (سورة الأنبياء: ٤٧)

We will set up the scales of justice for the Day of Resurrection and no soul will be wronged in the least. Even if it is the weight of a mustard seed, We will bring it to account. We are sufficient to keep account.

(Qur'an, Al-Anbiya: 47)

Calculation here is a tool of equity and a scale of justice that extends beyond this world into the Hereafter. This is a sign that human calculation in transactions is a miniature version of the greater, divine reckoning.

3. Calculation as a Methodology for Accountability

The Almighty said:

﴿فَمَنْ يَعْمَلْ مِثْقَالَ ذَرَّةٍ خَيْرًا يَرَهُ * وَمَنْ يَعْمَلْ مِثْقَالَ ذَرَّةٍ شَرًّا يَرَهُ﴾ (سورة الزلزلة: ٧-٨)

Whoever does an atom's weight of good will see it, and whoever does an atom's weight of evil will see it.

(Qur'an, Az-Zalzalah: 7-8)

The verse establishes the principle of absolute precision in calculation, down to the measure of an atom. Here, calculation moves from the domain of the cosmos and time into the domain of ethics and human behavior.

4. Calculation as a Horizon of Knowledge

The Almighty said:

﴿الشَّمْسُ وَالْقَمَرُ بِحُسْبَانٍ﴾ (سورة الرحمن: ٥)

The sun and the moon travel with precision.

(Qur'an, Ar-Rahman: 5)

The Qur'an makes the movement of the celestial bodies evidence of a precise, calculated system. This opens the door to reflection on astronomy and natural science on a computational basis.

5. Calculation as a Divine Book

The Almighty said:

﴿وَكُلَّ شَيْءٍ أَحْصَيْنَاهُ كِتَابًا﴾ (سورة النبا: ٢٩)

...We have recorded everything in a book.

(Qur'an, An-Naba: 29)

Calculation is transformed into a “book” written in the divine knowledge, from which nothing, small or great, is omitted. This makes enumeration a spark of knowledge and a key to scientific innovation.

Introductory Conclusion

From the sum of these verses, a new logic forms in the Islamic mind:

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- It makes calculation a principle in creation.
- And a scale in justice.
- And a methodology in accountability.
- And a door to science and discovery.

Thus, the “Revolution of Calculation” was, in reality, a Quranic revolution that changed the course of science and history. It is what inspired Al-Khwarizmi and gave birth to the sciences of algebra, algorithms, and the foundations of modern computational logic.

Appendix 2: Sequential Algorithms

The Holy Qur'an, though not a book of science, is a book that establishes a logical and organized “way of thinking.” One of its most important features is its description of significant processes in existence as sequential chains of events.

Below is a table that gathers the most prominent sequential operations (algorithms) mentioned in the Holy Qur'an, divided by domain:

Table of Sequential Algorithms in the Quranic Expression

Domain	The Sequential Algorithm	The Sequential Stages (in simplified form)	The Reference Verse or Surah
Creation of the Cosmos and Nature	Algorithm of Human Creation	1. Drop of fluid $\Rightarrow$ 2. Clinging form $\Rightarrow$ 3. Lump of flesh $\Rightarrow$ 4. Bones $\Rightarrow$ 5. Clothing the bones with flesh.	Surah Al-Mu'minu n: 12-14

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	Algorithm of the Rain and Life Cycle	1. Sending the winds ⇨ 2. Carrying the clouds ⇨ 3. Sending down the water ⇨ 4. Bringing forth the fruits.	Surah Al-A'raf: 57
	Algorithm of Crop Growth	1. Sending down water ⇨ 2. The earth stirs and swells ⇨ 3. The sprouting of crops.	Surah Al-Hajj: 5
Acts of Worship and Legislation	The Algorithm of Ablution (Wudu)	1. Washing the face ⇨ 2. Washing the hands ⇨ 3. Wiping the head ⇨ 4. Washing the feet.	Surah Al-Ma'idah: 6
	The Algorithm of the Hajj Pilgrimage	1. Entering Ihram ⇨ 2. Tawaf ⇨ 3. Sa'i ⇨ 4. Standing at Arafat... (and so on).	Surah Al-Baqarah & Al-Hajj (in summary)
	The Algorithm of Dividing Inheritance	1. Preparing the deceased ⇨ 2. Settling the debts ⇨ 3. Executing the will ⇨ 4. Distributing the remainder.	Surah An-Nisa (in summary)
History and Stories	The Algorithm of Moses's Mission	1. Sending Moses ⇨ 2. Going to Pharaoh ⇨ 3. Presenting the signs ⇨	Multiple Surahs (Ta-Ha, Al-A'raf...)

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		4. Challenging the sorcerers...	
	The Algorithm of the Destruction of Unjust Nations	1. Sending the messenger $\Rightarrow$ 2. The people's denial $\Rightarrow$ 3. The falling of punishment.	Multiple Surahs (Hud, Ash-Shams ...)
Events of the Hereafter	The Algorithm of the Day of Judgment	1. The blowing of the Trumpet $\Rightarrow$ 2. The Resurrection $\Rightarrow$ 3. The Gathering $\Rightarrow$ 4. The Reckoning $\Rightarrow$ 5. The Scale...	Multiple Surahs (Az-Zumar, Al-Qari'ah ...)

Summary and Analysis:

The Imam says after presenting this table:

“Look with your own eyes, my sons! The logic of sequence is not merely a rule in calculation, but a divine law that governs everything. It governs:

- The world of living beings: in the creation of humans and plants.
- The world of legislation: in the ordering of acts of worship and rights.
- The world of history: in the rise and fall of nations.

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- The world of the unseen: in the events of the Day of Judgment.

“So when you, Abu Abdullah, design a sequential algorithm to solve a problem, you are in reality reflecting a shadow of this great divine system.”

Research and reflection on the verses that point to these algorithms show that they are not usually mentioned in a single, contiguous verse. Rather, their stages are built across multiple verses and contexts in the Qur’an to form an integrated system.

Below is a detailed breakdown of three such algorithms, with the reference verses for each stage:

1. The Algorithm of the Completion of Faith

This algorithm describes the journey of guidance from its beginning until it is firmly established.

Stage	Description	The Reference Verse
1. Hearing	This is the starting point, where the ear receives the message and the door to guidance is opened.	﴿ وَقَالُوا لَوْ كُنَّا نَسْمَعُ أَوْ نَعْقِلُ مَا كُنَّا فِي أَصْحَابِ السَّعِيرِ ﴾ (سورة الملك: ١٠) They will say, ‘If only we had listened and understood, we would not be among the inhabitants of the blazing fire.’ (Al-Mulk: 10)

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2. Contemplation	After hearing comes the role of the mind in pondering the signs that are heard and seen.	﴿ إِنَّ فِي خَلْقِ السَّمَاوَاتِ وَالْأَرْضِ ... وَبَيِّنَاتٍ فِي خَلْقِ السَّمَاوَاتِ وَالْأَرْضِ... ﴾ (آل عمران: ١٩٠-١٩١) In the creation of the heavens and earth... They reflect on the creation of the heavens and the earth... (Aal-Imran: 190-191)
3. Affirmation (Faith)	After contemplation and conviction comes the moment of affirmation of the heart and submission.	﴿ آمَنَ الرَّسُولُ بِمَا أُنْزِلَ إِلَيْهِ مِنْ رَبِّهِ وَالْمُؤْمِنُونَ... ﴾ (سورة البقرة: ٢٨٥) The Messenger has believed in what was revealed to him from his Lord, and so have the believers... (Al-Baqarah: 285)
4. Action	True faith does not remain in the heart; it must be translated into righteous action.	﴿...إِلَّا الَّذِينَ آمَنُوا وَعَمِلُوا الصَّالِحَاتِ فَلَهُمْ أَجْرٌ غَيْرُ مَمْنُونٍ ﴾ (سورة التين: ٦) ...except for those who believe and do good deeds: they will have a reward that is never ending. (At-Tin: 6)

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5. Increase	Faith is not a static state, but a living entity that increases and grows with obedience and reflection.	﴿ إِنَّمَا الْمُؤْمِنُونَ الَّذِينَ إِذَا ذُكِرَ اللَّهُ وَجِلَتْ قُلُوبُهُمْ وَإِذَا تُلِيَتْ عَلَيْهِمْ آيَاتُهُ زَادَتْهُمْ إِيمَانًا... ﴾ (سورة الأنفال: ٢) The true believers are those whose hearts tremble with awe when God is mentioned, whose faith increases when His revelations are recited to them... (Al-Anfal: 2)

2. The Algorithm of Forming a Family

This algorithm describes the logical and legal stages for building the most important institution in society.

Stage	Description	The Reference Verse
1. Engagement and Mutual Consent	The stage of getting to know one another and the initial agreement, which is a preamble to the contract.	﴿...وَلَا جُنَاحَ عَلَيْكُمْ فِيمَا عَرَّضْتُمْ بِهِ مِنْ خِطْبَةِ النِّسَاءِ...﴾ (سورة البقرة: ٢٣٥) You will not be blamed for any indirect proposal of marriage you make to women... (Al-Baqarah: 235) (And mutual consent as in ﴿...إِلَّا أَنْ تَكُونَ...﴾ (An-Nisa: 29), and marriage is the greatest of trades).

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2. The Contract and Covenant	This is the transformation of mutual consent into a binding legal contract and a solemn covenant.	﴿...وَأَخَذَ مِنْكُمْ مِيثَاقًا غَلِيظًا﴾ (سورة النساء: ٢١) ...and they have taken a solemn pledge from you. (An-Nisa: 21)
3. The Union and Tranquility	After the contract comes the first purpose of marriage, which is psychological and physical tranquility.	﴿وَمِنْ آيَاتِهِ أَنْ خَلَقَ لَكُمْ مِنْ أَنْفُسِكُمْ أَزْوَاجًا لِتَسْكُنُوا إِلَيْهَا وَجَعَلَ بَيْنَكُمْ مَوَدَّةً وَرَحْمَةً...﴾ (سورة الروم: ٢١) And one of His signs is that He created for you spouses from among yourselves so that you might find tranquility in them; and He placed between you affection and mercy... (Ar-Rum: 21)
4. Procreation (Offspring)	This is the natural fruit of the family and the continuation of the human species.	﴿الْمَالُ وَالْبَنُونَ زِينَةُ الْحَيَاةِ الدُّنْيَا...﴾ (سورة الكهف: ٤٦) - ﴿وَاللَّهُ جَعَلَ لَكُمْ مِنْ أَنْفُسِكُمْ أَزْوَاجًا وَجَعَلَ لَكُمْ مِنْ أَزْوَاجِكُمْ بَيِّنٌ وَحَقْدَةً...﴾ (سورة النحل: ٧٢) Wealth and children are the adornment of the worldly life... (Al-Kahf: 46) - And God has given you spouses from among yourselves and given you children and grandchildren from your spouses... (An-Nahl: 72)

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5. Upbringing and Guardianship	The greatest responsibility after procreation, which is to raise and protect the children.	﴿ يَا أَيُّهَا الَّذِينَ آمَنُوا قُوا أَنْفُسَكُمْ وَأَهْلِيكُمْ نَارًا... ﴾ (سورة التحريم: ٦) - ﴿ الرِّجَالُ قَوَّامُونَ عَلَى النِّسَاءِ... ﴾ (سورة النساء: ٣٤) You who believe, protect yourselves and your families from a Fire... (At-Tahrim: 6) - Men are the protectors and maintainers of women... (An-Nisa: 34) (And guardianship includes care and upbringing).

3. The Algorithm of Victory

This algorithm describes the divine patterns for achieving victory and empowerment. It is not a magic formula, but a methodology of action.

Stage	Description	The Reference Verse
1. Faith	This is the starting point and the essential condition without which true victory is not achieved.	﴿...وَكَانَ حَقًّا عَلَيْنَا نَصْرُ الْمُؤْمِنِينَ ﴾ (سورة الروم: ٤٧) ...and it was Our duty to help the believers. (Ar-Rum: 47)

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2. Preparation	Faith alone is not enough. It must be paired with taking the material means and preparing all possible strength.	﴿وَأَعِدُّوا لَهُمْ مَا اسْتَطَعْتُمْ مِنْ قُوَّةٍ وَمِنْ رِبَاطِ الْخَيْلِ...﴾ (سورة الأنفال: ٦٠) Prepare against them whatever forces you can muster, including warhorses... (Al-Anfal: 60)
3. Patience and Steadfastness	When encountering challenges, comes the stage of patience and not retreating, for it is the key to relief.	﴿يَا أَيُّهَا الَّذِينَ آمَنُوا إِذَا لَقِيتُمْ فِئَةً فَأَبْتُتُوا...﴾ (سورة الأنفال: ٤٥) - ﴿...كَمْ مِنْ فِئَةٍ قَلِيلَةٍ غَلَبَتْ فِئَةً كَثِيرَةً يَأْذِنُ اللَّهُ وَاللَّهُ مَعَ الصَّابِرِينَ﴾ (سورة البقرة: ٢٤٩) You who believe, when you meet a force in battle, stand firm... (Al-Anfal: 45) - ...How many a small company has overcome a large company by God's permission. And God is with the patient. (Al-Baqarah: 249)
4. Trust in God	After preparing everything, comes the most important step of the heart: entrusting the entire affair to God and relying on Him alone.	﴿...فَإِذَا عَزَمْتَ فَتَوَكَّلْ عَلَى اللَّهِ إِنَّ اللَّهَ يُحِبُّ الْمُتَوَكِّلِينَ﴾ (سورة آل عمران: ١٥٩) ...And when you have decided, then rely upon God. Indeed, God loves those who rely [upon Him]. (Aal-Imran: 159)

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5. Victory	When the preceding conditions are met, victory comes as a logical result and a divine pattern.	﴿...إِنْ تَنْصُرُوا اللَّهَ يَنْصُرْكُمْ وَيُثَبِّتْ أَقْدَامَكُمْ﴾ (سورة محمد: ٧) ...If you help God, He will help you and make your feet firm. (Muhammad: 7)

Appendix 3: The Algorithms of Condition and Branching

The tools of condition and branching (such as: in, law, idhā, man, mahmā, fa-ammā...) are among the pillars of the Arabic language and the style of the Quranic expression, and they appear in the Qur'an hundreds of times in various forms. To create a "complete" table of them could take volumes.

However, as the Imam taught Abu Abdullah, "The lesson is not in enumerating the particulars, but in understanding the universal rules."

Therefore, I will present to you a table that contains the most prominent and clearest examples for each type of conditional and branching algorithm in the Qur'an. This table serves as a set of "master keys." If you understand them, you will be able to extract dozens of other examples on your own during your reading.

Table of the Main Types of Conditional and Branching Algorithms in the Qur'an

Conditional Tool	The Noble Verse (Example)	The Condition	The Response	The Algorithmic Type

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		(The Action)	(The Result)	
In (إن) (Indicates possibility)	﴿ إِن تَنْصُرُوا اللَّهَ يَنْصُرْكُمْ وَيُثَبِّتْ أَقْدَامَكُمْ ﴾ (محمد: ٧) ...If you help God, He will help you and make your feet firm. (Muhammad: 7)	Helping God	God's help and the firming of one's feet	Direct Condition and Recompense (If... Then...)
Idhā (إذا) (Indicates a certain event)	﴿ إِذَا جَاءَ نَصْرُ اللَّهِ وَالْفَتْحُ * وَرَأَيْتَ النَّاسَ يَدْخُلُونَ فِي دِينِ اللَّهِ أَفْوَاجًا * فَسَبِّحْ بِحَمْدِ رَبِّكَ وَاسْتَغْفِرْهُ... ﴾ (النصر: ١-٣) When God's help comes and the victory, and you see people entering God's religion in	The coming of victory and the people entering the religion	The command to glorify and seek forgiveness	Condition and Executive Command (When... Do...)

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	droves, then glorify your Lord with praise and seek His forgiveness... (An-Nasr: 1-3)			
Law (لو) (Indicates impossibility)	لَوْ كَانَ فِيهِمَا آلِهَةٌ إِلَّا اللَّهُ لَفَسَدَتَا... (الأنبياء: ٢٢) If there had been in the heavens or earth other gods besides God, both heavens and earth would have been in ruins... (Al-Anbiya: 22)	The existence of other gods with God	The ruin of the heavens and the earth	Conditional Proof by Assuming the Impossible (Proof by Contradiction)

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Man (مَنْ) (Links an actor to a result)	﴿ فَمَنْ يَعْمَلْ مِثْقَالَ ذَرَّةٍ خَيْرًا يَرَهُ * وَمَنْ يَعْمَلْ مِثْقَالَ ذَرَّةٍ شَرًّا يَرَهُ ﴾ (الزلزلة: ٧-٨) Whoever does an atom's weight of good will see it, and whoever does an atom's weight of evil will see it. (Az-Zalzalah: 7-8)	Performing an action (good or evil)	Seeing the recompense for that action	The Precise Algorithm of Recompense (Whoever does... gets...)
Fa-ammā... wa-ammā (فَأَمَّا ... وَأَمَّا) (Divides people into two paths)	﴿ فَأَمَّا مَنْ ثَقُلَتْ مَوَازِينُهُ * فَهُوَ فِي عَيْشَةٍ رَاضِيَةٍ * وَأَمَّا مَنْ خَفَّتْ مَوَازِينُهُ * فَأَمَّهُ هَآوِيَةٌ ﴾ Then he whose scales are heavy will have a pleasant life, but he whose scales are light will have	The scales being heavy or light	Entering the path of bliss or the path of hell	The Complete Binary Branching Algorithm (If... Then... Else...)

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	the Abyss as his mother. (Al-Qari’ah: 6-9)			

Summary and Analysis:

The Imam says to his students, looking at them with a scrutinizing eye:

“This table, my sons, is but a key to inexhaustible treasures. The explicit conditional tools—like ‘if,’ ‘were it,’ and ‘whoever’—appear in the book of God hundreds of times. But the matter is far deeper than that. If you contemplate with your hearts and minds, you will find that ‘conditional logic’ itself—the law of cause and effect, of action and recompense—is the hidden fabric with which countless verses are woven. It is the spirit that flows through the description of the cosmic patterns, the stories of previous nations, and the states of the Day of Judgment.”

“With these eloquent tools, the Holy Qur’an built its great logical system, which trains the mind to understand the inevitable relationship between premises and results, and between actions and their recompense. The lesson is not only in the number of tools, but in realizing that the Qur’an establishes a mind that lives and thinks with the logic of ‘condition and consequence’ in all of its affairs.”

“And for this reason,” the Imam said, turning directly to Abu Abdullah, “when you place a ‘condition’ in your calculation process (your algorithm), you are not merely quoting a linguistic tool. You are

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reflecting a shadow of the great divine logic that has assigned a consequence for every action, and a destiny for every choice.”

Appendix 4: The Algorithms of Repetition and Looping

“Repetition” is one of the deepest and most apparent systems in the Quranic and cosmic structure.

As we did with “Condition,” listing every verse that contains the logic of repetition is a very difficult task, because repetition is not just a linguistic tool, but a law that flows through the stories of the prophets, the patterns of nations, and the cycles of nature.

However, we can create a table that gathers the most prominent types and examples of “Repetition and Looping” algorithms, to provide you with the key to understanding this great principle:

Table of Types of “Repetition and Looping” Algorithms in the Qur’an

Domain	The Repetitive Algorithm	Description of the Repetition and Its Condition	The Reference Verse

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Cosmic Cycles	Algorithm of Night and Day	Repeated Action: The alternation and succession of night and day. Stopping Condition: Until the establishment of the Hour.	﴿يُقَلِّبُ اللَّهُ اللَّيْلَ وَالنَّهَارَ إِنَّ فِي ذَلِكَ لَعِبْرَةً لِّأُولِي الْأَبْصَارِ﴾ (سورة النور: ٤٤) God alternates night and day: truly there is a lesson in this for those who have eyes to see. (An-Nur: 44)
	Algorithm of the Celestial Bodies	Repeated Action: The swimming of the sun, moon, and planets in their orbits. Stopping Condition: Until the appointed term.	﴿...وَكُلٌّ فِي فَلَكٍ يَسْبَحُونَ﴾ (سورة يس: ٤٠) ...each swims in its own orbit. (Ya-Sin: 40)
	Algorithm of Reviving the Earth	Repeated Action: Sending down rain and sprouting vegetation after the earth was dead. Stopping Condition: Continues every year by God's command.	﴿...وَوَرَّى الْأَرْضَ حَامِدَةً فَإِذَا أَنْزَلْنَا عَلَيْهَا الْمَاءَ اهْتَزَّتْ وَرَبَتْ...﴾ (سورة الحج: ٥) ...you see the earth dead and barren, but when We send down water upon it, it stirs and swells... (Al-Hajj: 5)

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Rites and Worship	Algorithm of the Five Prayers	Repeated Action: Performing the prayer. Stopping Condition: The cycle repeats every day until death.	﴿...إِنَّ الصَّلَاةَ كَانَتْ عَلَى الْمُؤْمِنِينَ كِتَابًا مَوْقُوتًا﴾ (سورة النساء: ١٠٣) ...for prayer is obligatory for the believers at prescribed times. (An-Nisa: 103)
	The Algorithm of Circumambulation (Tawaf)	Repeated Action: Completing one circuit around the Kaaba. Stopping Condition: When the number of circuits reaches seven.	﴿...وَلْيَطَّوَّفُوا بِالْبَيْتِ الْعَتِيقِ﴾ (سورة الحج: ٢٩) ...and let them walk around the Ancient House. (Al-Hajj: 29) - (The number was detailed by the Sunnah).
Ethical and Historical Patterns	Algorithm of Gratitude and Increase	Repeated Action: Whenever the condition of gratitude is met, the result of increase follows. Stopping Condition: A continuous divine pattern.	﴿...لَئِنْ شَكَرْتُمْ لَأَزِيدَنَّكُمْ﴾ (سورة إبراهيم: ٧) ‘If you are grateful, I will certainly give you more...’ (Ibrahim: 7)

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	Algorithm of Sending Messengers	Repeated Action: Whenever a nation came and deviated, a messenger was sent to it. Stopping Condition: Ended with the Seal of the Prophets (peace be upon him).	﴿ثُمَّ أَرْسَلْنَا رُسُلَنَا تَتْرَىٰ كُلًّا مَا جَاءَ أُمَّةً رَسُولُهَا كَذَّبُوهُ...﴾ (سورة المؤمنون: ٤٤) Then We sent Our messengers in succession. Every time its messenger came to a community, they called him a liar... (Al-Mu'minun: 44)
States of the Day of Judgment	Algorithm of the Punishment of the People of Hell	Repeated Action: The changing of skins so they may taste the punishment continuously. Condition: "Every time" their skins are roasted through.	﴿...كُلَّمَا نَضِجَتْ جُلُودُهُمْ بَدَّلْنَاهُمْ جُلُودًا غَيْرَهَا لِيَذُوقُوا الْعَذَابَ...﴾ (سورة النساء: ٥٦) ...every time their skins are roasted through, We will replace them with other skins so they may taste the punishment. (An-Nisa: 56)

Summary and Analysis:

The Imam says to his students:

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“Have you seen, my sons? The logic of repetition and looping is not merely a computational tool, but a divine law that governs everything:

- It is the system of stability in the cosmos (night and day, the celestial bodies).
- It is the system of nurturing and purification in acts of worship (the prayer, circumambulation).
- It is the system of justice and recompense in ethics and history (gratitude, the patterns of nations).
- And it is the system of fulfillment of the promise and the threat in the Hereafter.

“So when you place a ‘repetitive loop’ (Loop) in your algorithm, Abu Abdullah, you are reflecting a shadow of this great divine pattern (sunnah) that creates immense power from a simple, repeated action, capable of building a stable system.”

Appendix 5: Types of Structural Symmetry and the Tools of Comparison and Contrast

Below are the most prominent and important types of structural symmetry and the tools of comparison and contrast in the Holy Qur'an, presented in a comprehensive table, with an explanation of the purpose of each style and its link to the logical or algorithmic application it reflects.

“And this principle is in the Qur'an to establish the entire value system,” said the Imam, as he drew a table on the sand:

Table of the Great Symmetries in the Qur'an

The Symmetrical Pair	The Symbolic Meaning	The Reference Verse (Example)
The Blind ↔ The Seeing	Ignorance & Error ↔ Knowledge & Insight	﴿ وَمَا يَسْتَوِي الْأَعْمَىٰ وَالْبَصِيرُ ﴾ (سورة فاطر: ١٩) The blind and the sighted are not equal (Fatir: 19)
The Darkness ↔ The Light	Disbelief & Polytheism ↔ Faith & Monotheism	﴿ وَلَا الظُّلُمَاتُ وَلَا النُّورُ ﴾ (سورة فاطر: ٢٠)

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		nor are the depths of darkness and the light (Fatir: 20)
The Living ↔ The Dead	Those with hearts alive with faith ↔ Those with hearts dead from heedlessness	﴿ وَمَا يَسْتَوِي الْأَعْيَاءُ وَلَا الْأَمْوَاتُ... ﴾ (سورة فاطر: ٢٢) The living and the dead are not equal... (Fatir: 22)
The Impure ↔ The Pure	The Unlawful & Corrupt ↔ The Lawful & Sound	﴿ ...قُلْ لَا يَسْتَوِي الْخَبِيثُ وَالطَّيِّبُ وَلَوْ أَعْجَبَكَ كَثْرَةُ الْخَبِيثِ ... ﴾ (سورة المائدة: ١٠٠) ...Say, 'The bad and the good are not equal, even though the abundance of the bad may please you...' (Al-Ma'idah: 100)
The Inhabitants of the Fire ↔ The Inhabitants of the Garden	The People of Misery ↔ The People of Bliss	﴿ لَا يَسْتَوِي أَصْحَابُ النَّارِ وَأَصْحَابُ الْجَنَّةِ ... ﴾ (سورة الحشر: ٢٠) The inhabitants of the Fire and the inhabitants of the Garden are not equal... (Al-Hashr: 20)

A Comprehensive Table of the Most Prominent Tools and Types of Structural Symmetry in the Holy Qur'an

The Eloquent Style	Its Description and Purpose	A Clear Quranic Example	The Logical/ Algorithmic Application
1. Contrast by Opposites	Placing two completely contradictory concepts side by side to highlight the vast difference between them. Its purpose: Absolute clarity and decisiveness.	...قُلْ هَلْ يَسْتَوِي الْأَعْمَى وَالْبَصِيرُ أَمْ هَلْ تَسْتَوِي الظُّلُمَاتُ وَالنُّورُ... ﴿ (سورة الرعد: ١٦) ...Say, 'Are the blind and the seeing equal? Are darkness and light equal?'... (Ar-Ra'd: 16)	Represents the fundamental principle of Binary Logic (e.g., 1/0, True/False, Yes/No).
2. Comparison by Striking Parables	Transforming an abstract idea (like faith or charity) into a tangible, sensory image to facilitate its understanding. Its purpose: To make deep meanings accessible.	﴿ مَثَلُ الَّذِينَ يُنْفِقُونَ أَمْوَالَهُمْ فِي سَبِيلِ اللَّهِ كَمَثَلِ حَبَّةٍ أَنْبَتَتْ سَبْعَ سَنَابِلٍ... ﴾ (سورة البقرة: ٢٦١) Those who spend their wealth in God's cause are like grains of corn that produce seven ears...	Resembles the processes of Modeling & Simulation, where a simplified model is built to understand a more complex system.

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		(Al-Baqarah: 261)	
3. Contrast by Consequence and Recompense	Judging two different paths not by describing them, but by describing their final results. Its purpose: To show the true value of choices.	﴿ فَأَمَّا مَنْ أَعْطَى وَاتَّقَى... فَسَيُسِّرُهُ لِلْيُسْرَى * وَأَمَّا مَنْ بَخِلَ... فَسَيُسِّرُهُ لِلْعُسْرَى ﴾ (الليل: ١٠-٥) For the one who gives... We shall smooth his way towards ease. For the one who is miserly... We shall smooth his way towards hardship. (Al-Layl: 5-10)	Represents the complete binary branching algorithm (If... Then... Else...) where each condition leads to a completely different path and result.
4. Comparison by Denying Interrogative	Posing a question not to request an answer, but to deny the possibility of the two sides being equal and to force the mind to acknowledge	﴿ أَفَمَنْ يَمْشِي مُكِبًّا عَلَى وَجْهِهِ أَهْدَى أَمْ مَنْ يَمْشِي سَوِيًّا عَلَى صِرَاطٍ مُسْتَقِيمٍ ﴾ (سورة الملك: ٢٢) Who is better guided: someone who walks with his head bent down, or	Resembles processes of Logical Validation that test the validity of a hypothesis by demonstrating the absurdity of its opposite.

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	the difference. Its purpose: Mental provocation.	someone who walks upright on a straight path? (Al-Mulk: 22)	
5. Comparative Preference	Does not place two things as black and white, but places them on a scale and clarifies which is better or of a higher degree. Its purpose: To order values and determine priorities.	﴿ أَصْحَابُ الْجَنَّةِ يَوْمَئِذٍ خَيْرٌ مُّسْتَقَرًّا وَأَحْسَنُ مَقِيلًا ﴾ (سورة الفرقان: ٢٤) The people of Paradise on that Day will be in a better dwelling and a fairer resting place. (Al-Furqan: 24) (Uses the comparative form: khayr [better], ahsan [fairer/better]).	Represents the comparison operators (>, <) and Sorting in algorithms, as well as the search for the optimal solution (Optimization).
6. Contrast by Inversion	Mentioning two things that are sequential and opposite in action to show complete power and comprehensive scope. Its	﴿ وَأَنَّهُ هُوَ أَضْحَكٌ وَأَبْكِي * وَأَنَّهُ هُوَ أَمَاتٌ وَأَحْيَا ﴾ (النجم: ٤٣-٤٤) And that it is He who makes [one] laugh and weep. And that it is He who	Resembles the concept of a “Full Range” in a data set, where the minimum and maximum values are dealt with.

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	purpose: To show dominance and totality.	gives death and gives life. (An-Najm: 43-44)	

Conclusion:

The Imam concluded this lesson by saying: “Have you seen, my sons? The Qur’an does not simply cast information upon us. It uses miraculous structural engineering to make our minds partners in discovering the truth. These eloquent tools are, in their essence, logical tools, which can inspire the scientist and the mathematician to build their systems on a foundation of clarity, power, and beauty.”

They had completed the “Revolution of Calculation,” and the time had come to plunge into a deeper, more abstract revolution: the “Revolution of Algebra.”

And then, isma‘īl entered the circle with a troubled expression, carrying in his hands a problem unlike any before. It was not a matter of simple reckoning or direct calculation, but a riddle that seemed to flow from the chest of history itself, pulsing with urgency. In it lay a question that demanded more than numbers—it cried out for a new science. The circle stirred as the weight of his problem settled upon them, like a spark igniting dry tinder.

After Abū ‘Abdullāh al-Khwarizmi had unveiled his new method of calculation and proven it to be the swiftest and simplest, Isma‘īl thought all riddles had been answered. But one day, Ya‘qūb the logician broke the stillness of the gathering. His tone carried both challenge and respect as he turned to the Imam and said,

“Master, our friend Abū ‘Abdullāh has excelled in the art of calculation, and this is of great value to merchants and common folk. Yet a greater question remains: is this truly a science? The Greeks teach us that the highest science lies in abstract proof, not in the handling of tangible numbers. So tell us—how shall we rise from mere calculation to the rank of rigorous logical proof?”

The question struck at the root of their work. The Imam smiled gently, as though welcoming the challenge. “Your question, Ya‘qūb, is

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the door through which we will enter a new world. You have touched upon the essential difference between two ways of looking at reality: the logic of Aristotle, which you revere, and the Logic of Bayān, which we draw from the Book of God. Let us compare them, and see which can better serve a science such as calculation.”

He lifted his hand, as though weighing two worlds upon an invisible scale. “The logic of Aristotle is a great but aloof logic. It resembles a prince gazing at the world from his ivory tower. Its goal is the pursuit of abstract, formal truth, distant from the chaos of daily life. Its tool is the syllogism—moving from universal premises to particular conclusions with unyielding rigor. But its flaw lies in disdain: it despises numbers because they are tied to tangible things—apples, dirhams, and plots of land. It prefers to ponder the ideal triangle rather than measure a triangular field. For this reason, the science of calculation was stunted among the Greeks, for their philosophy held it in contempt.”

Then his voice softened, yet grew more luminous. “But the Logic of Bayān is different. It is humble, for it does not shy away from descending into the dust of reality, to wrestle with daily problems, and then ascend with them toward universal truths. If Aristotle’s logic is a tower, Bayān is an eye that first descends to the river, touches the flowing water, and then lifts itself toward the sky. It joins lived experience with cosmic vision, binding the earth to the heavens in a harmonious bond.”

He turned the Qur’an toward them, reciting with solemnity:

﴿الشَّمْسُ وَالْقَمَرُ بِحُسْبَانٍ﴾ (الرحمن: 5)

“The sun and the moon travel with precision.” (al-Raḥmān: 5)

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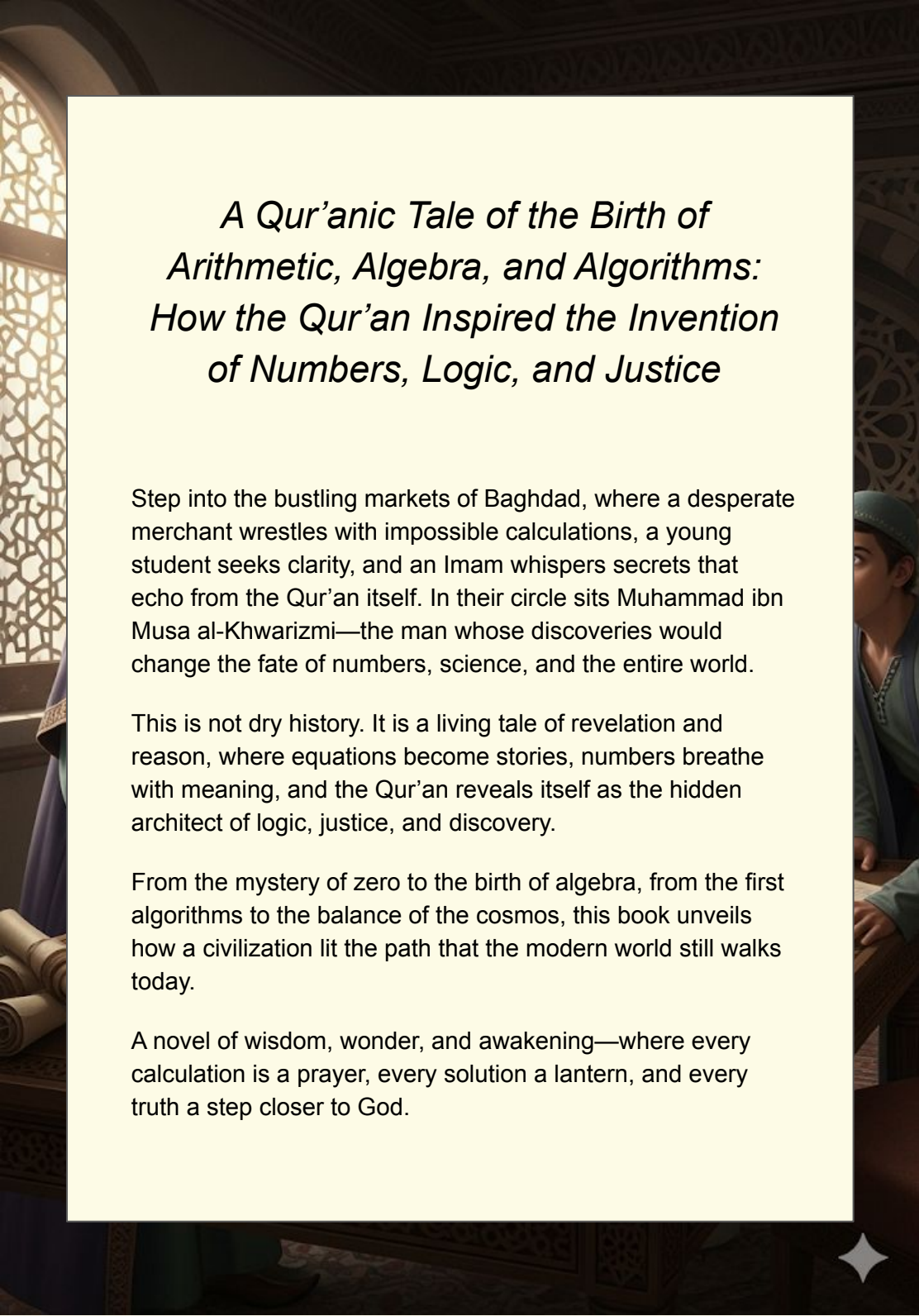
﴿وَكُلُّ شَيْءٍ عِنْدَهُ بِمِقْدَارٍ﴾ (الرعد: 8)

“...everything has its measure with Him.” (al-Ra‘d: 8)

“Here lies the truth of Bayān,” the Imam said. “Its goal is to make truth manifest, to establish justice, and to bring ease to the people. Its tools are not only rational proof, but also inference from witnessed signs, the striking of parables, and the connection of all knowledge to a higher moral purpose. It does not see numbers as base or lowly. It sees them as signs and words in the language of creation itself. Calculation is not merely a matter of trade—it is a path to understanding the order that flows through the cosmos.”

His eyes glistened as he turned to Abū ‘Abdullāh. “And this is why you will succeed where others failed. You do not begin from a logic that despises reality, but from the Logic of Bayān, which sees in the simplest riddle of the market a reflection of divine wisdom. Know then, my sons, that a new world begins with a single word: a thing. If we understand it, one of the greatest secrets of the mind will be unveiled to us.”

He closed the Qur’an with reverence, and his voice dropped to a whisper that seemed to ripple through their hearts. “Let us now apply the Logic of Bayān to the greatest challenge that faces the mind: the riddle of the unknown thing.”



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