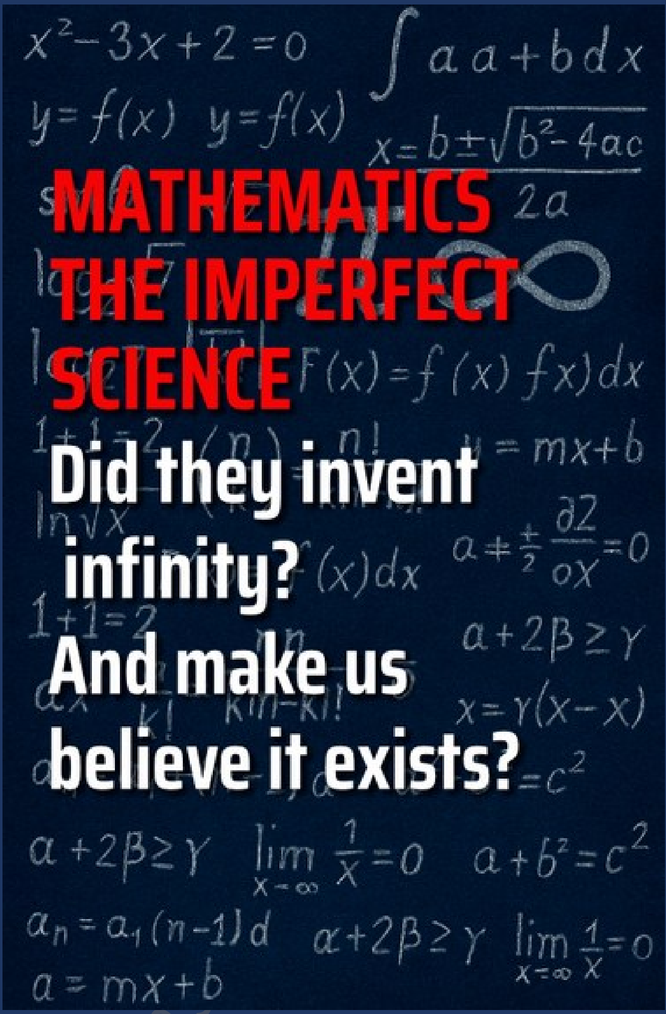
MATHEMATICS
THE IMPERFECT
SCIENCE
Did they invent
infinity?
And make us
believe it exists?

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The NeoCosmos way of thinking is born from logic, reason, and common sense, starting from what we can observe and reflect upon. Free from inherited ideologies and narratives, each book offers a direct and easy-to-read vision. It does not seek to convince, only to provide clarity so the reader can think for themselves.

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THE INVENTION OF MATHEMATICS

Mathematics is commonly treated as the intrinsic language of the universe—a Platonic truth awaiting discovery.

This book challenges that ontological status.It argues that mathematics is not discovered but constructed: a heuristic tool designed for survival, trade, and architecture, not for revealing cosmic truths.

Through paradoxes like infinity, Pi's irrationality, and Gödel's incompleteness theorems, the book exposes the structural fragility of the system.

Our formulas do not describe ultimate reality—they outline the limits of our abstraction.

Sample – Chapter 1: MATHEMATICS: TOOL, NOT TRUTH

Mathematics was not invented at a specific moment, nor was it a discovery, as if it were a hidden truth waiting to be revealed. Mathematics was progressively built by different cultures, not as a pure science, but as a tool to solve urgent and practical problems. Its origin is not in the search for universal truth, but in the need to survive, to negotiate, to record the passage of time, and to organize communal life.

More than twenty thousand years ago, in the Paleolithic era, there were already signs of primitive mathematics. Marks carved on bones or stones were not an attempt to theorize about numbers, but a rudimentary way of counting. They served to keep a basic record of quantities that mattered: the animals hunted, the members of the clan, or the lunar cycles. It was a system of direct, one-to-one correspondence. One mark for each object. There was no abstraction—only a functional record.

Thousands of years later, in the civilizations of ancient Mesopotamia and Egypt, the tool became more sophisticated because needs became more complex. Agriculture required measuring land for planting and calculating the volume of harvests.

Trade required a system to record debts and profits. The construction of large structures, such as the pyramids, demanded formulas to calculate areas and volumes with functional precision. The Egyptians, for example, used empirical procedures to determine the area of a circle that worked well enough for their purposes. However, there was no theory behind those formulas; they were recipes—instructions followed because they produced a useful result.

The great turning point came in ancient Greece, around the 6th century BC. Thinkers such as Pythagoras and, later, Euclid began to transform the nature of this tool. It ceased to be exclusively an instrument for measuring and counting, and became a system for reasoning. This is where the idea of mathematics disconnected from immediate necessity was born.

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ZERO: THE FUNCTIONAL FICTION

The invention that breaks the system.

THE ARCHITECTURE OF ERROR

Why technology inherits mathematical flaws.

THE HIDDEN ERROR IN THE RATIONAL

Even “exact” fractions hide approximation.

THE INCOMPLETE RULEBOOK

Gödel proved no system is ever complete.

THE DOUBLE STANDARD OF THE MIND

Why we accept some infinities and reject others.

THE FIRST CRACK: DIVISION AND THE LOSS OF REALITY

Concept	Description	Implication
Division's Practical Origin	Created to share quantities.	Simple in whole numbers, problematic in indivisible entities.
Non-exact Division	Example: $1 \div 3 = 0.333\ldots$ infinite decimal.	Produces results with no physical equivalent, revealing a gap between model and reality.
Fraction as Patch	1/3 created as symbolic placeholder for infinite decimal.	Maintains internal coherence at the cost of correspondence to reality.
Quantum Division Analogy	Wave function "splits" in double-slit experiment.	Reinforces that division can be a functional fiction in physics, not a literal event.

ARCHITECTURE OF ERROR IN TECHNOLOGY

Domain	Error Source	Empirical Case
Hardware	Overflow error when number exceeds representable limit.	CPU register overflow in computing.
Software	Rounding errors in floating-point representation.	0.2999999999999999 output in spreadsheets.
Aerospace	Data type mismatch leading to catastrophic failure.	Ariane 5 rocket self-destruction in 1996 due to 64-bit to 16-bit conversion overflow.
Artificial Intelligence	Misclassification due to dataset bias or floating-point imprecision.	AI misidentifying wolf as dog due to snow in image.