# Mathematics in philosophy

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Throughout human history people believed in the existence of the Ideal World beyond the boundaries of Space and the limits of Time. The Ideal World had been understood as Great Real Existence of Ideal Beings who were to continue to be omnipresent without the beginning and the end in Time.

These beliefs were pronounced by Pythagoras (572 -397, BC) at the Pythagorean School of Crotona, southern Italy, and by Plato (429 - 348, BC) at the Plato's Academy of Philosophy and Science in Athens. In both schools great attention was paid to Mathematics. This prominence was expressed by the following inscription over the door of Plato's Academy: "Let no one unversed of geometry enter here".

In the cultures of ancient Egypt and Greece, numbers were considered as living godly beings, which have great influence on earthly life. Every natural number 1, 2, 3, ... was considered a unique Ideal Being in the Ideal World and different by their nature.

Specifically, number One was considered as a unique being different by its nature from other numbers such as Two, Three, ... The importance of number One was pronounced by the truth, which says, "without One existing in the Ideal World, nobody could exist as one on Earth".

Carl F. Gauss (1777 - 1855), universally regarded as one of the three greatest mathematicians of all time along with Archimedes (287 -190, BC) and Newton (1642 - 1727,) expressed his opinion on Natural Numbers saying that "Natural Numbers have been created by God, and other numbers, such as rational or irrational were developed by people".

Numbers have been used in daily life everywhere and by everybody - by adult and children, rich and poor alike - and have never been exhausted or destroyed, because of their external nature.

Numbers and relations between them can only be seen in the Ideal World in a rational way. The Greek word Mathematics was probably used for the first time by Pythagoras in the sixth century, BC. Mathematics means knowledge, which is learned and understood. The other sciences - such as Astronomy, Physics, Chemistry and Biology - are learned by experience. However, these sciences use Mathematics extensively as the most accurate way of describing the material world. The objective truth about the Ideal Beings, including numbers and geometric figures, may be learned only via Mathematics.

For example, the objective truth $x2 + y2 = z2$, the Pythagorean relation between sides of a right ideal triangle, is known in Mathematics. On the other hand, the fact that after sunrise there will be sunset constitutes the truth in Astronomy. This truth is known via experience and great confidence in nature. It is also described by the Kepler's mathematical model of the Solar System.

The great richness of nature of numbers far exceeds the human ability to complete knowledge about numbers and their applications, if only to mention the Fermat's conjecture "There do not exist positive integers x, y, z, n such that $xn + yn = zn$, when $n ( 3)$. Many prominent mathematicians and people of different professions, such as Engineers, Lawyers and Priests, tried to solve the Fermat's conjecture, but the conjecture still remains open. Mr Friday Bonang from Maun, Staff of the Department of Mathematics, University of Botswana has done a lot of advanced mathematics to obtain the solution to the Fermat problem.

He could have probably achieved interesting partial results, unfortunately, Mr Friday Bonang passed away over five years ago. Let his soul rest in peace.

In 1908, the German mathematician, Poul Wolfshehl, bequeathed 100,000 marks to the Academy of Science at Göttingen as a prize for the first complete proof of the Fermat's thesis. To win this long awaiting prize, a great number of incorrect proofs have been published.

In our daily life and scientific activities, we use a small subset of all existing numbers. Even the most developed techniques of computer calculations today use a small subset of numbers with a finite number of digits, so that, this small subset of computer numbers does not even create a number field and it is much smaller than the smallest existing field of rational numbers.

Within applications, operations on numbers are performed with some degree of accuracy as a result of implementation of the Ideal Numbers in the restricted Material World. The probability of an exact value of any measurement is equal to zero. Therefore, almost every measurement is biased by an error. This is also due to the fact that in a measurement, irrational numbers cannot be read on a scale and have to be rounded-off.

Presently, university programmes use "Pure Mathematics" and "Applied Mathematics" in their terminology. In fact, this traditional partition of Mathematics is not clear-cut. For example, a course on Differential Equations could be classified under Pure Mathematics as well as Applied Mathematics.

However, from the ancient understanding of Mathematics, it becomes clear that Pure Mathematics exists in the Ideal World, and Applied Mathematics is its implementation in the Material World.

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