

GENERAL KNOWLEDGE



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Greatest Mathematicians

Mathematics has witnessed some of the most genius brains pondering over complex problems and solving them to unravel mysteries of Universe, science and life. The world salutes the great mathematicians and their contributions. Mathematics knows no culture, color, creed or gender. There have been famous black mathematicians and at the same time, female mathematicians and their contributions, that have shaped the mathematical world, all across the globe.

Archimedes

The greatest mathematicians of ancient era, Archimedes made phenomenal contribution in the field of mathematics. His works include integral calculus studies and finding various computation techniques to determine volume and area of several shapes including the conic section.

Euclid

Euclid, the 'father of Geometry', wrote the book ,"Euclid's Elements", that is considered to be the greatest piece of historical works in mathematics. The book is divided into 13 parts and in it, Euclid has discussed in details about geometry (what is now called Euclidean geometry). His contributions are also famous in the fields of spherical geometry, conic sections and number theory.

Aryabhatta

Aryabhatta, the greatest Indian mathematician of ancient era, has been famous for his mathematical works and theorems on astronomical bodies that have been found to be very accurate in terms of modern calculations. "Aryabhatiya", his only work to have survived has given the world innumerable theorems and research subjects. His two other major contributions are the, introduction of zero to the world and calculating the approximate



value of pie. His works are also spread in fields like include algebra, arithmetic, trigonometry, quadratic equations and the sine table.

Ramanujam

Srinivasa Ramanujan Iyengar, the greatest Indian mathematician of 20th century, contributed immensely in fields like number theory, mathematical analysis, string theory and crystallography. His genius has been admired by some greatest contemporary mathematicians of his time. He is hailed to be one of the most famous mathematicians in the field of number theory. Although he lived for a short span of 32 years, he compiled nearly 3900 phenomenal results that leave even the best mathematical brains of today in sheer awe and wonder!

René Descartes

The French philosopher and mathematician, Rene Descartes was famous for his method of expressing geometric shapes in the form of algebraic equation. It was because of Rene Descartes that we got introduced to the beautiful branch of co-ordinate geometry. The Cartesian coordinates, in fact, refer to his name. Besides this Rene made valuable contributions in the field of optics and energy conservation.

Leonhard Euler

Euler, a Swiss mathematician and physicists is widely acclaimed for his contributions in the field of function notation. His mathematical genius has been proved by his contribution in the fields of infinitesimal calculus and graph theory. His mathematical works and research in optics, mechanics, fluid dynamics have been hailed to be very influential.

Fibonacci

Leonardo of Pisa, the greatest European Italian mathematician, popularly known as Fibonacci, was the first mathematician to introduce Hindu – Arabic system in Europe, that is the positional system of using ten digits with a decimal point and zero. He is popular for using Fibonacci number sequence, that is, 1, 1, 2, 3, 5, 11....in the book authored by him, known as Book of Calculation, the *Liber Abaci*.

Carl F. Gauss M

Carl F. Gauss, a German mathematician, known as *Princeps mathematicorum* meaning, "the Prince of Mathematicians" or "the foremost of mathematicians" was a child prodigy and a genius. Even as a teenager, he is believed to have made remarkable mathematical contributions. Carl F. Gauss made path breaking contributions in fields like set theory, statistics, differential analysis, geophysics, electrostatics, number theory and astronomy. He proved the fundamental theorem of Algebra and made various contribution in number theory.

Sir Isaac Newton

Sir Isaac Newton was one of the greatest mathematician and physicist, the world has ever produced. His contributions in mathematics are spread in almost every field. However, he developed Calculus, both differential and integral, that are, still the most important aspects of higher mathematics. Using Calculus, he made it easier to find the area bounded by closed curves. In physics, his most famous and world changing contribution was the discovery of existence of gravitation force in our surrounding.

Blaise Pascal

Blaise Pascal, French philosopher, mathematician, and physicist, contributed in several areas of mathematics, but he is widely known for Pascal's triangle. He invented the first mechanical adding machine in the year 1642. The unit of atmospheric pressure, Pascal (Pa) has been named in his honor. He also made contributions in the field of computer and the programming language pascal was named after him, in 1972.

Pythagoras

The Greek mathematician and philosopher, known as the 'father of numbers', is famous for the discovery of Pythagorean theorem formula, which states that in a right angled triangle, the square of the hypotenuse (z), is equal to the sum of the squares of the other two sides, x and y – that is, $x^2 + y^2 = z^2$.



Benjamin Banneker

A child prodigy, a watch designer and a mathematician, Bannerker discovered many puzzles in fields of trigonometry. He was a genius in logarithms and used them extensively in trigonometry. He is still regarded as the most popular black mathematician.

John Von Neumann

The Hungarian-American mathematician, physicist, John made valuable contribution in several fields like set theory, functional analysis, quantum mechanics, ergodic theory, continuous geometry and statistics. His operator theory in mechanics is still regarded as one of his most pioneering works. He was also a key figure in the development of game theory.

Joseph Fo<mark>urier</mark>

The Fourier's law and Fourier transform are named after him. He is also accredited with the discovery of the green house effect. He is popular for discovering Fourier series and its uses in determining its application of real life examples in heat transfer and vibrations.

Sophie Germain

Especially known for her work on 'Fermat's Last Theorem', Sophie was one of the initiators of the elasticity theory and also contributed to number theory and philosophy. She was regarded as the 'the revolutionary mathematician' of her times.

Amalie Emmy Noether

She gave path breaking theorems in algebra field. The most popular, "Noether's Theorem" connects symmetry and conservation laws in Physics. She also made valuable contributions to the theories of algebraic invariants and number fields.

Albert Einstein

The scientific world was amused by the Einstein's theory of relativity. Although Albert Einstein was physicist, his applied mathematical theorems to reach to apt conclusions. Known as "father of Physics", he can be best described as a mathematical physicist. He also



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won the Nobel Prize in 1921 for his contributions to physics and the discovery of law of photoelectric effect.

Certainly, talking in detail about contribution of each of these geniuses is not possible right here as a book can be compiled about contributions made by each of these mathematicians. The mathematical world has immensely benefited from the works of these geniuses!

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