Aryabhatta’s Contribution

He was a great mathematician,astronomer,astrologer,physicist of 5th century

1. Calculated the value of pi. According to him the approximate value of pi was 3.1416 . This can be used to effectively calculate the area, circumference of circles in maths.
2. In the 5th century AD, at the age of 23 aryabhatta authored a book named “ARYABHATTIYA”.

It had a collection of various mathematical concepts. It was a complete summary of mathematics.

Topics: a)Decimal System

b)Number theory

c) Geometry: Provide formulas of area of triangle and volume of spheres.

d) Trigonometry: Defined SINE and COSINE functions and created trigonometric tables.

e) Algebra : Introduced methods to solve linear equations and quadratic eqns and indeterminate eqns.

f) Astronomy

in easy and simple explanation

1. He invented the number ZERO by which led him calculate the distance between Moon and Sun. He used zero as a placeholder in place value notation — a major step in the evolution of the decimal system
2. In space science, He gave important hypothesis and theories which were later proved as correct. According to astronomical observations, he said that EARTH was not immovable but it rotates about its AXIS and is a SPHERICAL body.

He gave the concept of HELIOCENTRISM which states that all the planets revolve around the sun. **Geocentric vs Heliocentric**:

Aryabhatta’s model was **geocentric with rotating Earth**, but he **did hint** at the sun being the center for planetary orbits, which is a step toward **heliocentrism**. So it’s more accurate to say:

1. Accurately calculated the time taken by Earth to orbit the Sun (~365.3586 days).
2. He gave the scientific explanation of SOLAR ECLIPSE and LUNAR ECLIPSE(based on shadows). This broke the myth of the early men that eclipse was caused by a demon named Rahu and Ketu. He explained that **lunar eclipses occur when the Earth comes between the Moon and the Sun**, and **solar eclipses** happen when the **Moon blocks the Sun’s light** — a very advanced idea at the time.
3. Because of his contributions. The first indian SATELLITE launched in 1975 was named “ARyabhatta”