



**Developments in the field of Mathematics:** In the field of mathematics the ancient Indians made three distinct contributions- **the notation system, the decimal system and the use of zero.**

- **Decimal System:** The earliest epigraphic evidence for the use of the decimal system is in the beginning of the fifth century A.D. The Indians were the first to use the decimal system. The famous mathematician Aryabhata was acquainted with it. The Chinese learnt this system from the Buddhist missionaries, and the Western world borrowed it from the Arabs when they came in contact with India.
- **Notational System:** The use of Indian notational system can be found in **Ashokan edicts**. It was later adopted by the Arabs who spread it in the Western world.
- **Use of Zero:** Zero was discovered by the Indians in about the second century B.C. Indians used Zero as a separate numeral. The Arabs learnt the use of Zero from Indians and spread it in Europe.
- **Algebra and Geometry:** Both the Indians and the Greeks contributed to development of algebra. The standardised bricks of Harappan civilization shows the knowledge of geometry and measurement of Harappans and it is believed that Vedic people may have learnt them from the Harappans itself.
- **Trigonometry:** Aryabhata calculated the area of the triangle which led to the development in the field of Trigonometry.

**Developments in the field of Science:** The works of Aryabhata, Brahmaghira, Charak, Sushruta and others throw light on the development in the field of science in ancient India.

- **Astronomy:** Aryabhata and Brahmaghira are two prominent scientists who worked in this field. In his book 'Aryabhatiya' Aryabhata discussed the causes of lunar and solar eclipses, calculated the position of the planets, wrote the circumference of earth, and pointed out that the sun is stationary and the earth rotates.

Varahamihira in his book '**Brihatsamhita**' stated that the moon rotates around the earth and the earth rotates around the sun. He utilized several Greek works to explain the movement of the planets and some other astronomical problems.

Although Greek knowledge influenced Indian astronomy, there is no doubt that the Indians pursued the subject further and made use of it in their observations of the planets.

- **Medicine:** The ancient Indian physicians studied anatomy. They devised methods to diagnose diseases and prescribed medicines for their cure. The earliest mention of medicines is in the Atharva Veda. In the Post-Mauryan times, India produced two famous scholars of the Ayurveda-Sushruta and Charaka.