THE HISTORY OF BHASKARA II AND HIS CONTRIBUTION TO MATHEMATICS

Bhaskara II gives his date of birth and date of composition his major work, in a verse in the Arya metre. Which reveals that he was born in Born 1036 AD of the Shaka era (1114 CE), and that he composed the Siddhanta-Siroman when he was 36 years old. He also wrote another work called the Karana-Kutuhala when he was 69 years old. His work shows the influence of Brahmagupta and other predecessors. He was born in Deshastha Brahmin family of scholars, mathematicians and astronomers, Bhaskara was a leader of cosmic observatory at Ujjain, the main mathematical Centre of ancient.

His contribution to the mathematics include the following:

A proof of the Pythagorean theorem by calculating the same area in two different ways and then cancelling out terms to get a2 + b2 = c2

Solutions of indeterminate quadratic equations (of the type ax2 + b = y2) and a cyclic Chakravala method for solving indeterminate equations of the form ax2 + bx + c = y

Solutions of Diophantine equations of the second order, such as 61x2 + 1 = y2 and the first general method of finding the solutions of the problem x2 – ny2 = 1 was given by Bhaskara II.

Bhaskara’s arithmetic text, which covers the topics of definitions, arithmetic terms, interest computation, arithmetical and geometrical progressions, plane geometry, solid geometry, the shadow of the gnomn, methods to solve indeterminate equation and combinations.

Bhaskara’s algebra text, which was the first to recognize that a positive number has two square roots (a positive and a negative square root). The text contains the following; positive and negative numbers, the unknown, determining the unknown quantities, surds, Kuttaka for solving indeterminate and Diophantine equations, simple and quadratic equations.

Finally, Bhaskara and his works represent a significant contribution to the mathematical knowledge in 12th century. He has been called the greatest mathematian of medieval India.

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