

How the Ancient Indians Get the Measurements to Build Their Sacrificial Altars

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The lives of ancient Indians were strictly bound to the religion. Sacrifices (*yajña*) were the main custom of them. To perform the sacrifices they wanted to make altars which were built with appropriate measurements. Therefore, Brahmins have developed some Mathematical rules and techniques which are in manuals called *śulba sūtras* and they have used a few equipments for it.

Here, our attention is paid to examine how the Brahmins measured the width, length, area etc. of the altars accurately and what equipments were used by them for it.

The main methodology is studying literary sources collecting the facts and verifying them in accordance with the theoretical knowledge of modern Mathematics.

The ancient Indians have used only five measuring equipments to get measurements. They are a stake (*śaṅku*), cord (*rajju*), angular rod (*sphya*) and a peg (*khīla*) but, additionally, a special measuring rod which has been made according to the physical measurements of the patron of the sacrifice for the particular sacrifice, too, is used. They have used them to find directions as well. In *śulba sūtras*, three main altars and other various altars have been recommended. First, it guides us to form a right angle triangle. Based on it, there is much guidance in the *śulba sūtras* to form squares, rectangles, circles, trapeziums etc. In addition, including the Pythagorean Theorem, the mathematical rules used to form a square or a rectangle or a circle etc. which is similar in area to two identical squares or two unequal squares, a rectangle, a circle etc. and vice versa, can be seen there. The Brahmins, indeed, have used the cord to bisect an angle and to divide a figure into equal shares. Comparing these methods with modern mathematical theories, it is worth to say that the ancient Indians were capable to measure accurately using a few equipments.

Key words: *Śulba sūtra, Vedic Mathematics, Altar, Sacrifice*