

Value of pi (π) as per Ancient Mathematics

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Abstract: The aim of this article is to derive the value of, and analyze π using only the ancient mathematics and astrology. The explanations are given after studying and observing astronomical constructions. Several cases studied have been checked to verify this derivation.

Keywords: Indian Knowledge System, Ancient Mathematics, pi

Introduction: From Last 2000 year, the official π value 3.14159265358...which is regarding in Vedas and that's the true. The value of has played a significant role in mathematics. The value of π is defined to be the ratio between the circumference and the diameter of a circle.

The formula can be written as
 $\pi = \text{Circumference of Circle} / \text{Diameter}$

Until nobody can proof exact π value. The most famous first of the great Indian Mathematician and astronomers "Aryabhata". He was discovered the value of π without any geometrical construction, it means that he was discovered based on The Universe. How he was been used our logic to find exact value of π .

Proposed Explanation:

चतुरधिकं शतमष्टगुणं द्वापष्टिस्तथा सहस्राणां ।
अयुतद्वयं विष्कम्भस्यासन्नो वृत्तपरिणाहः ॥ Sloka 10.

Aryabhata discovered $((4+100) \times 8 + 62000) / 20000$
 $= 62832 / 20000 = 3.1416$, which is approximately equal to exact value of π .

Explanation:

We know that, Universe have local and global geometry. That global geometry of a Universe is as a whole. Aryabhata had known, Universe is a sphere in shape. We think, Aryabhata is find out π by considering on the basis of whole Universe. In the Universe, there are sun, moon, stars, galaxy, planets and many other elements is present.

And in the universe, there are 8 planets in the solar system. And our solar system was 4- 4.2 billions year old, so we assume 4 and minimum limit of age of any species, human, or any others are 100. So, we used 100 as age. Thus there is $(4+100)$ as given in mention proposal.

As like for 8 planets. so therefore, $(4+100) \times 8$ is as above mention. And 1 days = 1000 year is consider, according to Indian ancient history which is refers in the Vedas and Purans for “Eshwar”.

From ancient time, circumference of earth which is about 24860 miles (which is compared to modern day calculation is 24900 miles). If circumference of earth is divided by 365 days and then subtracted by 6 (Earth completes one revolution around the sun in 365 days and 6 hours.

That extra 6 hr get subtracted in every year so it does not make a leap year) which you give the 62.109589041095. But it is considered only 62. And 1 day=1000 year as mentioned above. so, 62000 is mention.

According to, age of Universe is 10-20 billion years ago (but it physical Cosmology says 13.82 billion years). So, therefore we assume 20 billion years for Universe. Also, again 1 days =1000 year. So, 20,000 is mention. So, therefore,

$$(4+100) \times 8 + 62000 / 20000 = 62832 / 20000 = 3.1416.$$

Aryabhat discover 5-digit π value which is 3.1416.\

Conclusion: Observing astronomical construction, we notice that, the closer we come to approximating π . above verification conclude that our assumption accurate and has been correctly verified.

Reference:

[1].History of Pi (π) in Literature.

[2]. Literature Available on Aryabhataiya on Internet.