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The History and Significance of Pi (π) and Pi (π) Day

Pi (π)

Pi (π) is a mathematical constant used to find the area and circumference of a circle. Mathematical constants are numbers whose values remain the same in different mathematical equations. Pi is considered one of the most used and well known mathematical constants.

Pi describes the relationship between a circle's circumference and diameter. In circles, Pi is the constant ratio of a circle's circumference to its diameter. Pi's value of 3.14 stays the same if the size of a circle changes.

Pi is unique as it is impossible to find its exact value and it keeps on going forever. Pi is called an "infinite decimal" by mathematicians as after the decimal point, its digits go on forever and ever

So far mathematicians have calculated Pi to more than 1 trillion decimal places and they plan to keep on going with their calculations.

History of Pi (π)

Pi is around for about 4,000 years and is believed to have originated in ancient civilizations such as the Egyptians and the Babylonians.

The first known calculation of Pi was done by the ancient Greek mathematician Archimedes of Syracuse (287-212 BC). Archimedes was one of the greatest mathematicians of his time who accurately calculated the estimated value of Pi. Archimedes in his calculations showed that the value of Pi is between 3 1/7 (about 3.14285) and 3 10/71 (about 3.14084).

Chinese mathematician and astronomer Zu Chongzhi (429-501 BC) is believed to have calculated the value of Pi before Archimedes. Zu Chongzhi found the value to be 355/113 but unfortunately his book of writing has been lost, hence not much is known about his work or methods.

William Jones, a British mathematician was the first person to begin using the symbol π to represent Pi, in the year 1706.

Significance of Pi (π)

Pi holds a crucial place in mathematics due to its relation with all circles. All equations involving circles can't be completed and solved without using Pi.

Pi is very much needed and is used extensively in various fields such as trigonometry, geometry, statistics, and physics.

Pi is crucial and indispensable to engineering and has made modern constructions possible as Pi is used extensively in most calculations done for building and construction.

Pi (π) Day

The first three significant figures which make up Pi are 3, 1, and 4 which are written as 3.14 so each year on March 14th (14th day of the 3rd month) Pi Day is celebrated worldwide.

Pi Day or 3.14 is of great significance as 3.14 is one of the best known numbers in Mathematics. Pi is an irrational and transcendental number and it keeps on going on to infinity, but its first three digits 3.14 and its fractional value 22/7 are considered accurate enough to be used in mathematical calculations.

Pi Day was invented by a physicist named Larry Shaw in 1988. He held the first Pi Day celebration at his place of work named the Exploratorium (a science museum in San Francisco). Celebration included circular parades and eating fruit pies.

In 2009, a legislation was passed by the United States House of Representatives to make Pi Day an official national holiday and to make 3/14 National Pi Day.

Pi Day held special significance in 2015 as 3/14/15 or 3.1415 represented the first five digits of Pi. Special celebrations were held on 3/14/15 at 9:26:53 a.m. This special time combined with the numerical date represented the first 10 digits of Pi: 3.141592653.

Making Pi (π) Day a national holiday and celebrating it across educational institutions, museums and nationwide helps with increasing students and people's interest in math and science.

Sources Used:

A Brief History of Pi (π) | Exploratorium, www.exploratorium.edu/pi/history-of-pi.

https://www.exploratorium.edu/pi/history-of-pi#:~:text=Here%27s%20a%20brief%20history%20of,which%20is%20a%20closer%20approximation.

"Chain of Pi." *Science World*, 13 June 2022,

www.scienceworld.ca/resource/chain-of-pi/#:~:text=Pi%20is%20an%20important%20number,flight%2C%20to%20name%20a%20few.

Hom, Elaine J., et al. "What Is Pi?" *LiveScience*, Purch, 8 Mar. 2022,

www.livescience.com/29197-what-is-pi.html#:~:text=Pi%20is%20an%20irrational%20number,go%20on%20forever%20and%20ever.

Moody, Jennifer. "Origin of Pi: The Fascinating Story behind the World's Most Popular

Mathematical Constant." *Post University*, 2 May 2023,

post.edu/blog/origin-of-pi/#:~:text=The%20earliest%20known%20reference%20to,Subtract%20the%20circle%27s%20ninth%20part.

"What Is Pi Day?" *History.Com*, A&E Television Networks,

www.history.com/news/where-did-pi-day-come-from.