

The Greek letter Pi(π)

History

The Latin name of the Greek letter π is pi. This constant was named pi because it is the first letter of the Greek word that means "periphery" or "perimeter". Pi was first used as π by William Jones in 1706 and was later popularized by Leonhard Euler in 1737.

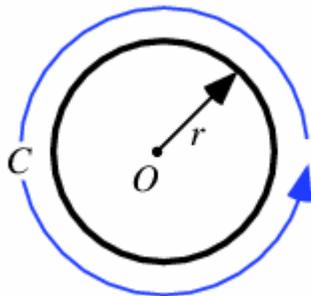
The earliest known textually evidenced approximations of pi date from around 19 BC. They are found in the Egyptian Rhind Papyrus $256/81 \approx 3.160$. A Babylonian tablet referred to $25/8 \approx 3.125$. Both scripts are within 1% of the true value. In the Indian text, Shatapatha Brahmana π is represented as $339/108 \approx 3.139$.

The first person whom estimated π rigorously was Archimedes (287 - 212 BC) He was able to prove that $3\frac{10}{71} < \pi < 3\frac{10}{70}$. The average of these values is 3.14185. Archimedes's results rested upon approximating the area of a circle based on the area of a regular polygon inscribed within the circle and the area of a regular polygon within which the circle was circumscribed. Beginning with a hexagon, he worked all the way up to a polygon with 96 sides.

Various people tried to work out the value for π but it was a Chinese mathematician, around 480, that demonstrated that $\pi \approx 355/113 \approx 3.1415929$.

Geometric definition

Pi represents a mathematical constant whose value is the ratio of any circle's circumference to its diameter. This is also the same constant value as the ratio of a circle's area to the square of its radius. Pi is sometimes referred to as Archimedes' constant or Ludolph's constant.



$$\pi = \frac{C}{d} = \frac{C}{2r} \approx 3.14159\dots$$

Pi also appears in formulas for volumes and areas of many geometrical shapes based on circles, such as ellipses, spheres and cones.

Irrationality

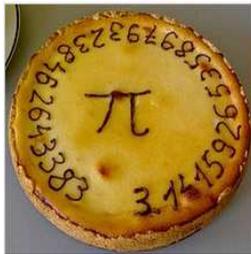
π is an irrational number, meaning that it cannot be written as the ratio of two integers ($\pi = 3.14159265358\dots$). The decimal representation of π has been computed to more than a trillion. In elementary applications only a dozen decimals will be required. For many purposes 3.14 or $\frac{22}{7}$ is close enough for calculations.

Poem about π

An excerpt from the poem written by the Nobel Prize winner, Wislawa Szymborska:

The caravan of digits that is pi
does not stop at the edge of the page,
but runs off the table and into the air,
over the wall, a leaf, a bird's nest, the clouds, straight into the sky,
through all the bloatedness and bottomlessness.
Oh how short, all but mouse-like is the comet's tail!

National Pi day 14 March



Pi day celebrations are mostly for fun, but given Pi a holiday of its own is a great way to make maths fun for kids. Now if that seems irrational, that's totally fitting, because Pi is an irrational number.

References

1. <http://en.wikipedia.org/wiki/Pi>
2. <http://www.roma.unisa.edu.au/07305/symbols.htm#Pi>
3. <http://ualr.edu/lasmoller/pi.html>
4. <http://mathworld.wolfram.com/Pi.html>
5. <http://www.squidoo.com/pi-day-math-geeks-holiday>

