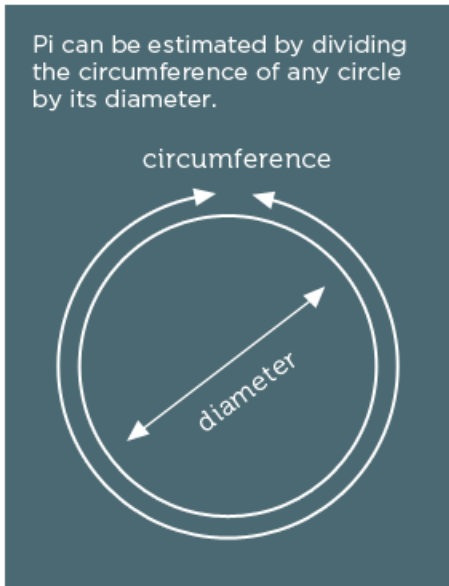


Visualizing Pi

The decimal representation of Pi has been computed to more than a trillion digits (10^{12}).

3.14



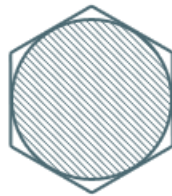
6.4 billion digits

3.1415926535897932384626433832
79502884197169399375105820974
9445923078164062862089986280
Pi has about 6.4 billion known digits which would take a person roughly 133 years to recite without stopping. The world record holder for the most memorized digits of Pi took nine hours to recite over 44,000 digits of Pi.

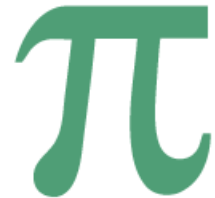
Ancient Egyptian, Babylonian, Indian, and Greek mathematicians all knew the ratio of circumference to diameter of a circle was slightly more than 3.



The earliest known reference to Pi occurs in an Egyptian papyrus scroll, written around 1650 BC by a scribe named Ahmes.



Pi (which is a letter in the Greek alphabet) was discovered by a Greek mathematician named Archimedes. He stated the Pi is a number between $3 \frac{10}{71}$ and $3 \frac{1}{7}$. He found it by taking a polygon with 96 sides and inscribing a circle inside the polygon. That was Archimedes' concept of pi.



All the digits of Pi can never be fully known.



It took Yasumasa Kanada, a professor at the University of Tokyo, approximately 116 hours to compute **6,442,450,000** decimal places of Pi on a computer.



The decimal rep of Pi truncated to 11 digits is accurate enough to estimate the circumference of any circle that fits inside the earth within an error of less than one millimeter.

There is no zero in the first 31 digits of Pi.

At 39 digits Pi can estimate the circumference of any circle within the observable universe with precision comparable to the radius of a hydrogen atom.

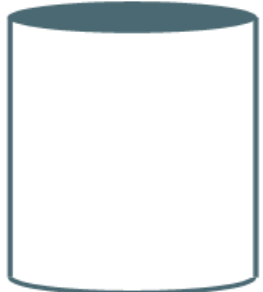
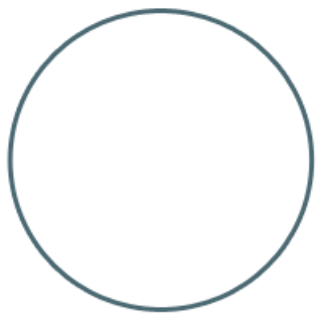
3.1415926535 8 9793238462643383279 5 0288419 7 16939937510582097494459230781
 64062862089986280348253421170679821480865132823066470938446095505822317
 2535940812848111745028410270193852110555964462294895493038196442881097566
 593344612847564823378678316527120190914564856692346034861045432664821339
 360726024914127372458700660631558817488152092096282925409171536436789259
 03600113305305488204665213841469519415116094330572703657595919530921861173
 819326117931051185480744623799627495673518857527248912279381830119491298336
 733624406566430860213949463952247371907021798609437027705392171762931767
 5238467481846766940513200056812714526356082778577134275778960917363717872
 1468440901224953430146549585371050792279689258923542019956112129021960864
 03441815981362977477130996051870721134 9 9999983729780499510597317328160963
 1859502445945534690830264252230825334468503526193118817101000313783875288

At position 763 there are six nines in a row. This is known as the Feynman Point.

No simple base-10 pattern in the digits of Pi has ever been found.

3/14

Pi day is celebrated on March 14 at the Exploratorium in San Francisco.



Circumference Area

Surface Area

$$\pi d$$

or

$$2\pi r$$

$$\pi r^2$$

$$2\pi r h + 2\pi r^2$$

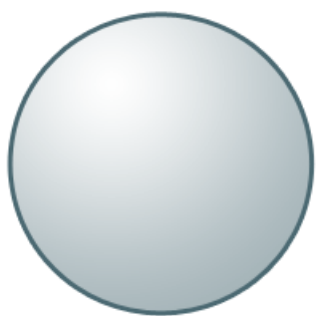
Volume

$$\pi r^2 h$$

The first to use Pi definitely to stand for the ratio of circumference to diameter was an English writer William Jones. He used it to symbolize the word "periphery." Euler adopted the symbol in 1737, and since that time it has been in general use.

2 Pi in radians form is 360 degrees.

Therefore Pi radians is 180 degrees and 1/2 Pi radians is 90 degrees.



Surface Area

Surface Area

$$4\pi r^2$$

$$\pi r \sqrt{r^2 + h^2} + \pi r^2$$

Volume

Volume

$$(4/3)\pi r^3$$

$$(1/3)\pi r^2 h$$



Sources:
http://facts.randomhistory.com/2009/07/03_pi.html
<http://ualr.edu/lasmoller/pi.html>
<http://www.roma.unisa.edu.au/07305/symbols.htm#Pi>
<http://mathforum.org/library/drmath/view/57543.html>