Circle: The History of π

The ratio of the circumference to the diameter of the circle (C : D or C D or C/D) has fascinated humans for ages The accuracy and imagination of calculating the value of π has taken some interesting twists and turns:

1. The **Old Testament** (1 Kings 7.23) contains a passage which suggests that the value for π was _____.

2. Other literature says that at about 2000 B.C., the **Babylonians** used $\frac{256}{81}$ as the value for π _____

3. Ancient **Egyptians** used $\left(\frac{4}{3}\right)^4$ as the value for π _____

4. **Archimedes** (287 - 212 B.C.) showed that the value of π was to be found between two

    numbers $3\frac{1}{7}$ and $3\frac{10}{71}$ _____

5. An ancient **Chinese** document from A.D. 450 showed the value of π to be $\frac{355}{113}$ _____

6. In **India**, around 1150, the value of π used was $\frac{3927}{1250}$ _____

7. The famous Italian mathematician, Leonardo Pisano (better known by his nickname **Fibonacci**) in 1220 showed the value of π to be $\frac{864}{274}$ _____

8. In Holland, **Ludoph van Ceulen** used a polygon with 2^{62} sides. He calculated π to thirty-five decimal places in the early 17th century. His result appears on his tombstone. 3.14159265

9. In England, **John Wallis** (1165) said the value was:

$$2 \times \frac{2}{1} \times \frac{2}{3} \times \frac{4}{3} \times \frac{4}{5} \times \frac{6}{5} \times \frac{6}{7} \times \frac{8}{7} \times \frac{8}{9}$$

$$\times \frac{10}{9} \times \frac{10}{11} \times \frac{12}{11} \times \frac{12}{13} \times \frac{14}{13} \times \ldots$$

10. In Germany, **Gottfried Wilhelm von Leibniz** (1673) said that the value of π was

$$4 \times \left(1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15} + \frac{1}{17} - \frac{1}{19} + \frac{1}{21} \cdots\right)$$

11. In 1973, two French mathematicians **Guilloud** and **Bouyer** calculated π to one million decimal places using a computer.

$$\pi = 3.141\ 592\ 653\ 589\ 793\ \ldots\ \ldots\ 779\ 458\ 151\ \ldots\ \ldots$$

999 976 digits
have been omitted

This number goes
on without repetition
nor end

12. In 2002, **Yasumasa Kanada** of Japan calculated π on a computer to 1.24 trillion decimal places.

π is used by - biologists for investigating laws of bacteria growth;
- insurance companies for actuary computing probabilities;
- compute companies for checking the accuracy of their computers.

Check out these websites!

http://www.exploratorium.edu/pi
To celebrate Pi Day March 14 @ 1:59 pm (3.1415)

http://www.facade.com/legacy/amiinpi/
Where is your birthday in Pi?

http://oldweb.cecm.sfu.ca/pi/pi.html
The Pi pages and everything you wanted to know about pi