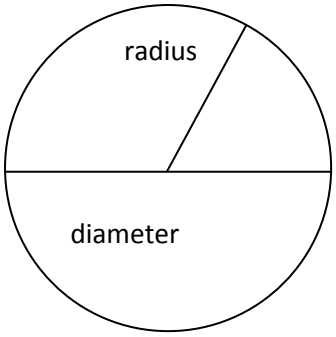
Calculating Pi (π)

Name: _____Form: _____



The Circumference of a circle, C, can be calculated according to the formula, **C = 2πr**, where **C = circumference and r = radius**. We can also write the formula **C = πd,** where d = diameter.

Pi (π) appears on your calculator as 3.141592654, so it is easy to calculate a circle's circumference if you know its radius or diameter.

BUT, what if you didn't know the value of π?

Pi (π) is the ratio of a circle's circumference to its diameter. $\boldsymbol{\pi = \frac{C}{d}}$

You task is to calculate π given the circumference and the diameter of 6 circles.

Instructions:

Work in pairs and use a trundle wheel to measure the circumference and diameter of the 2 circles located on the basketball courts. Also select 4 other circular objects as supplied by your teacher.

Circular Object	Circumference (C)	Diameter (d)	$\boldsymbol{\pi = \frac{C}{d}}$
1.			
2.			
3.			
4.			
5.			
6.			

Average ($\boldsymbol{\pi}$)**:** _____

Questions?

1. How does your value of π compare to the value shown on your calculator?

_____

_____

_____

2. What were some of the problems with taking your measurements?

_____

_____

_____

3. Archimedes in the 3rd century BC used geometry to calculate π, and found that $3\frac{10}{71} < \pi < 3\frac{10}{70}$.
   Re-write $3\frac{10}{71}$ and $3\frac{10}{70}$ as decimals. _____

4. How accurate was Archimedes compared to your results and compared to π on the calculator?

_____

_____

_____

_____

5. Does π change if the size of the circle changes?

_____

_____