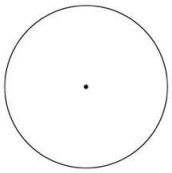
Name: ____KEY_____ Date: _____

One of your peers missed class where we learned about the geometry of circles. Create a page of notes below to help them understand what they missed.

A circle is the set of all points in a plane that are the same distance from a point called the __center_____.

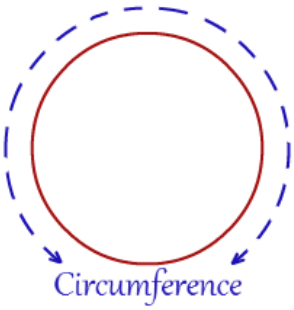


All circles have a radius and a diameter. The diameter is the distance ___across the circle_____ through the center. The radius is the distance from the center to any point on the circle. It is ____half_____ of the diameter.

Example: If the diameter = 4 cm, the radius = ___2_____ cm

Example: If the radius = 9 inches, the diameter = __ 18_____ inches

For a polygon (a 2-D shape with straight lines), the distance around the figure is called the _perimeter___. For a circle, the distance around the figure is called the ____circumference____ of the circle. We use the letter 'C' to represent this. The ratio of the circumference to the diameter, circumference/diameter, is the same for every circle and is represented by the Greek letter, _π_, read as _pi___.



Another way to write the Circumference formula is C = π * d

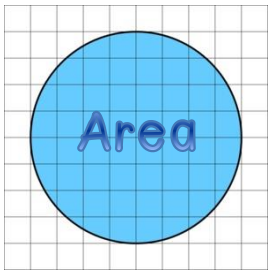
(It is helpful to remember that pi is approximately equal to __3.14__ or 22/7)

If you're asked to find how much <u>area</u> is covered by a circle (think grass seed covering a lawn, fertilizer on a field, paint on a wall) use the formula,

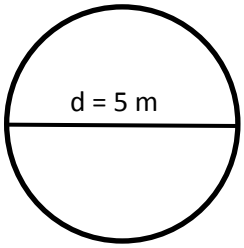
A = π * r^2

In the picture on the right, the shaded region inside the circle is the area.

Don't forget the units are squared for area!



Here's an example of finding circumference and area.



Circumference = πd

Circumference = ___(3.14)(5)_____

Circumference = ___15.7 m_____

Area = πr^2

Area = _(3.14)(2.5^2)_____

Area = ___19.6 m^2_____

If you're dealing with a semicircle (we learned this means an __arc_____ that is ____half_____ of a circle), don't forget to multiply by __ 1/2_____. This is the same as dividing by __2__.

If you have a quarter circle, then you would multiply by __ 1/4_____ or divide by ___4____.

We also learned about shapes that are made up of two or more other shapes. These are called ___composite____ shapes. Here's an example of a square and a semicircle.

Composite Shape

In order to find the perimeter of this shape, we have to pick a corner point to start at and travel ALL THE WAY __around___ the object until we get back to where we started. The measure of each side length or arc around the outside must be added together to find the TOTAL perimeter.

- Here is the formula for the perimeter of this shape: __3s_____ + __ 1/2π d_____
  (Each side of the square has a length of "s". Since only 3 of the 4 sides are on the <u>OUTSIDE</u> of the shape, we only add 3 of them in the perimeter)

In order to find the area of a shape like this, we have to __add___ the area of the square to the area of the circle.

- Here is the formula for the total area of this shape: __s^2____ + ___ 1/2 π r^2_____