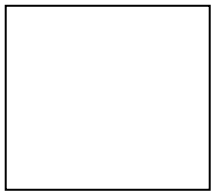
Name: _____ Date: _____

7R Classwork 11.7

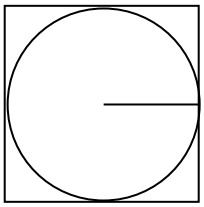
Area of Shaded Regions

RECALL:

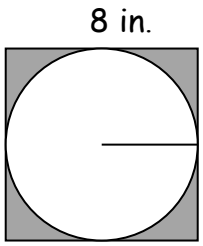
a. The square shown has a side of 8 in.
We know the formula for the area of a square: $\mathbf{A = s^2}$, where s is the side of the square. So, the area of the square shown is ……



b. The circle shown has a radius of 4 in.
We know the formula for the area of a circle: $\mathbf{A = \pi r^2}$, substitute 3.14 for π. So, the area of the circle shown is ……

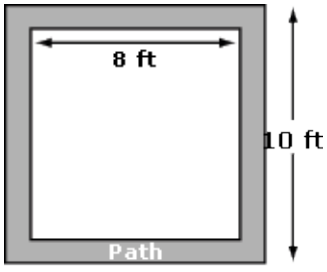


THINK: If the circle above is ***inscribed*** in the square above, can you think of how we could calculate just the shaded region of the figure below?



Shaded→**S**ubtract

Example #1: A square garden measuring 8 feet on a side is surrounded by a 1-foot-wide path. What is the area of the path? Round to the nearest whole number.

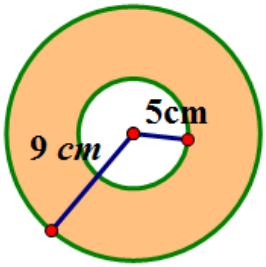


a. Area of the large square:

b. Area of the small square:

c. Area of the shaded region:

Example #2: Two *concentric circles* have radii of 5 and 9 inches respectively. Find the area of the shaded region between the circles as shown in the diagram. **Leave in terms of pi.**

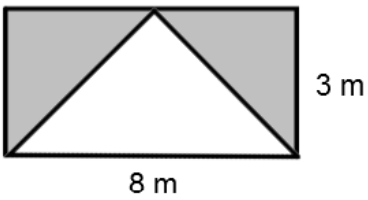


a. Area of the large circle:

b. Area of the small circle:

c. Area of the shaded region:

Example #3: Find the area of the **shaded region**.



a. Area of the rectangle:

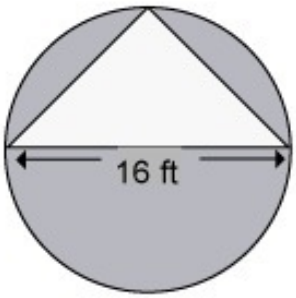
b. Area of the triangle:

c. Area of the shaded region:

You Try:

1. Find the area of the shaded region. **Round to nearest whole number. → remember that this means you will have to use the pi button.**

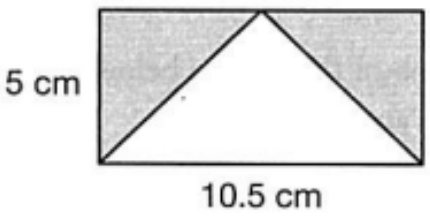
   a. Area of the circle: $A = \pi r^2$
   Hint: diameter is 16 ft.



   b. Area of the triangle: $A = \frac{1}{2}(bh)$
   Hint: height is equal to the radius.

   c. Area of the shaded region:

2. Find the area of the shaded region in the diagram below.



3. Find the area of the shaded region in the diagram below. Substitute 3.14 for pi when finding the area of the circle.