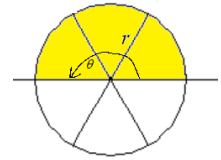


## Using Proportional Reasoning (aka Multiplicative Reasoning) to Find the Area of a Sector of a Circle

1. Insert a fraction in the blanks: The shaded area  $A$  is \_\_\_\_\_ of the total area  $\pi r^2$ .

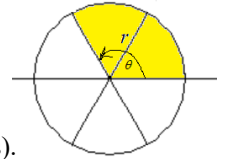
The angle  $\theta$  is \_\_\_\_\_ way around the entire circle.



Insert exact values in the blanks: The shaded area  $A =$  \_\_\_\_\_ and the angle  $\theta =$  \_\_\_\_\_ (radians).

2. Insert a fraction in the blanks: The shaded area  $A$  is \_\_\_\_\_ of the total area.

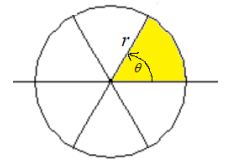
The angle  $\theta$  is \_\_\_\_\_ way around the entire circle.



Insert exact values in the blanks: The shaded area  $A =$  \_\_\_\_\_ and the angle  $\theta =$  \_\_\_\_\_ (radians).

3. Insert a fraction in the blanks: The shaded area  $A$  is \_\_\_\_\_ of the total area.

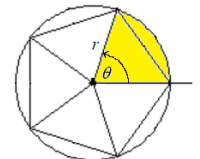
The angle  $\theta$  is \_\_\_\_\_ way around the entire circle.



Insert exact values in the blanks: The shaded area  $A =$  \_\_\_\_\_ and the angle  $\theta =$  \_\_\_\_\_ (radians).

4. Insert a fraction in the blanks: The shaded area  $A$  is \_\_\_\_\_ of the total area.

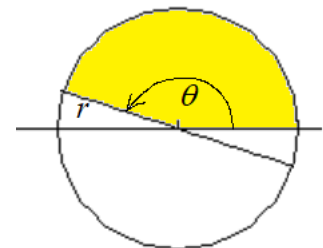
The angle  $\theta$  is \_\_\_\_\_ way around the entire circle.



Insert exact values in the blanks: The shaded area  $A =$  \_\_\_\_\_ and the angle  $\theta =$  \_\_\_\_\_ (radians).

5. The fraction of the shaded area  $A$  to the total area is  $\frac{A}{\pi r^2}$ .

The fraction of the angle  $\theta$  to the total angle  $2\pi$  around the entire circle is  $\frac{\theta}{2\pi}$ .



Write the area  $A$  of the sector shown in terms of  $\theta$  and  $r$ .  
Check that your expression works for the previous examples.