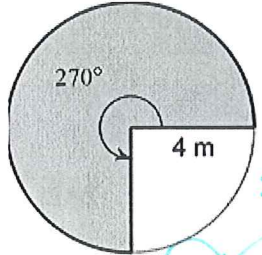
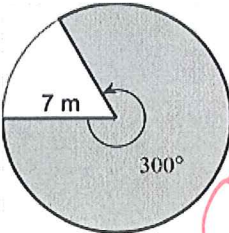


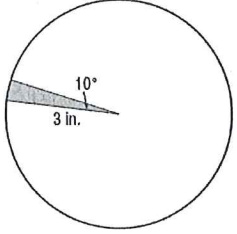
Name: Key

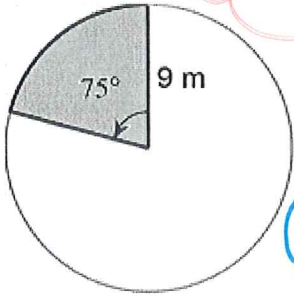
# Area of Sectors HW

Find the area of the shaded region. Show in terms of pi and round to the nearest hundredth.

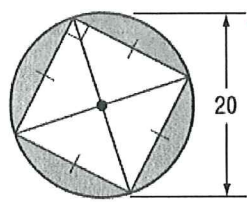
1.   $\frac{270}{360} \pi 4^2 = 12\pi \text{ m}^2$  exact value  
 $A_s = 12\pi \text{ m}^2$   
 $A_s \approx 37.70 \text{ m}^2$  rounded

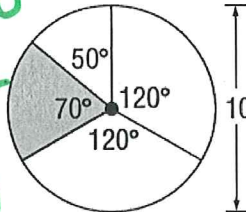
2.   $\frac{300}{360} \pi 7^2$   
 $A_s = \frac{245\pi}{6} \text{ m}^2$   
 $A_s \approx 128.28 \text{ m}^2$  rounded

3. A grocery store is slicing a wheel of cheese into slivers for free samples.  
  $A_s = \frac{10}{360} \pi 3^2$   
 $A_s = \frac{\pi}{4} \text{ in}^2$   
 $A_s = 0.79 \text{ in}^2$

4.   $A_s = \frac{75}{360} \pi 9^2$   
 $A_s = \frac{135\pi}{8} \text{ m}^2$   
 $A_s = 53.01 \text{ m}^2$

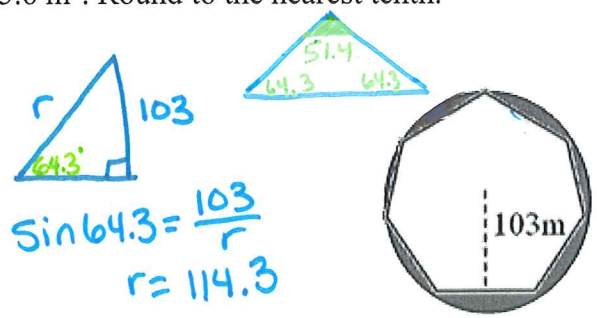
What is the area, in square inches, of one sliver?

5.   $A_s = \pi 10^2 - 4 \cdot \frac{1}{2} 10 \cdot 10 \sin 90$   
 $A_s = (100\pi - 200) \text{ units}^2$   
 $A_s = 114.16 \text{ units}^2$

6.   $A_s = \frac{70}{360} \pi 5^2$   
 $A_s = \frac{175\pi}{36} \text{ cm}^2$   
 $A_s \approx 15.27 \text{ cm}^2$

7. The area of the regular polygon is approximately 35735.6 m<sup>2</sup>. Round to the nearest tenth.

A. Find the radius of the circle,  $r$ .  
 radius of circle: 114.3m



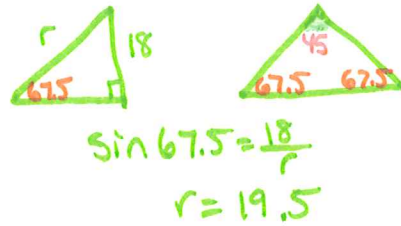
B. Find the area of the shaded region.  
 $A =$  5323.1 m<sup>2</sup>

$114.3^2 \pi - 35735.6$   
 $41058.65 - 35735.6$

8. The area of the regular polygon is  $1075.5 \text{ m}^2$ . Round to the nearest tenth.

A. Find the radius of the circle,  $r$ .

radius of circle: 19.5m

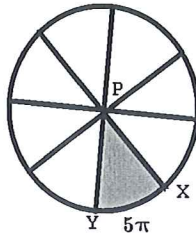


B. Find the area of the shaded region.

A = 117.02 m<sup>2</sup>

$19.5^2 \pi - 1075.5$   
 $1192.52 - 1075.5$

9. The length of arc  $XY$  of a circle is equal to  $\frac{1}{8}$  of the circumference of the circle. The length of the arc is  $5\pi$  inches. Find the central angle of the circle, in degrees. Find the radius, in inches, and then use that radius to find the area of the shaded sector, in square inches. If needed, round any answer to the nearest tenth. sure?



$\frac{360}{8}$

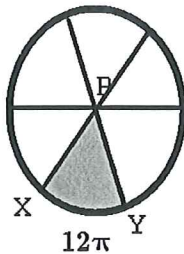
Central Angle  $\angle XPY =$  45°

$5\pi \times 8 = C$   
 $40\pi = C \therefore R = 20$

Radius = 20in

$A_s = \frac{45}{360} 20^2 \pi \rightarrow$  Sector Area =  $\frac{50\pi \text{ in}^2}{157.1 \text{ in}^2}$

10. The length of arc  $XY$  of a circle is equal to  $\frac{1}{6}$  of the circumference of the circle. The length of the arc is  $12\pi$  inches. Find the central angle of the circle, in degrees. Find the radius, in inches, and then use that radius to find the area of the shaded sector, in square inches. If needed, round any answer to the nearest tenth.



$\frac{360}{6} = 60^\circ$

Central Angle  $\angle XPY =$  60°

$12\pi \times 6 = C$

$72\pi = C$

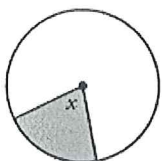
$\therefore r = 36$

Radius = 36

$A_s = \frac{60}{360} 36^2 \pi$

Sector Area =  $\frac{216\pi \text{ in}^2}{678.6 \text{ in}^2}$

11. The shaded area is  $120\pi \text{ cm}^2$  and the radius is 24cm. Find  $x$ .



$120\pi = \frac{x}{360} \pi 24^2$

$120 = \frac{576x}{360}$

$x = 75^\circ$