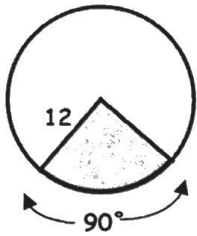


Area of a Sector

Find the area of the sectors:

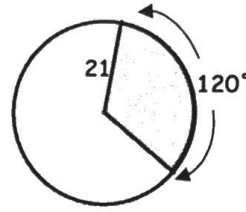
1. Express answer exactly.



$$A_s = \pi(12)^2 \left(\frac{90}{360} \right)$$

$$A_s = 36\pi$$

2. Express answer approximately.



$$A_s = \pi(21)^2 \left(\frac{120}{360} \right)$$

$$147\pi \approx$$

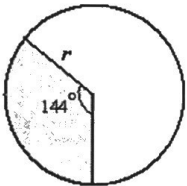
$$461.81$$

3. A circle has a radius of 12. Find the area of the sector whose central angle is 120° .

$$A_s = \pi(12)^2 \left(\frac{120}{360} \right) = 48\pi$$

Find the radius of each circle. ~~Round answers to the nearest whole number.~~

4.



Area of Shaded Region = 40π

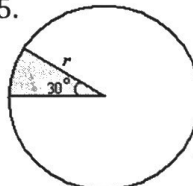
radius = _____

$$40\pi = \pi r^2 \left(\frac{144}{360} \right)$$

$$100 = r^2$$

$$10 = r$$

5.



Area of Shaded Region = 84.8

radius = _____

$$84.8 = \pi r^2 \left(\frac{30}{360} \right)$$

$$12 = r^2$$

$$3.46 \approx r$$

6. The central angle of a sector is 72° and the sector has an area of 5π . Find the radius.

$$5\pi = \pi r^2 \left(\frac{72}{360} \right)$$

$$25 = r^2$$

$$5 = r$$

7. Find the measure of the central angle of a sector if its area is 5π and the radius is 6.

$$\theta$$

$$A_s = \pi r^2 \frac{\theta}{360}$$

$$5\pi = \pi (6)^2 \cdot \frac{\theta}{360}$$

$$\boxed{50^\circ = \theta}$$

8. The diameter of a pizza is 25 centimeters. Each slice of pizza has a central angle of 36 degrees. If you eat 3 slices how many square centimeters of pizza have you eaten?

$$\text{radius} = 12.5$$

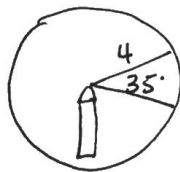
$$\theta = 36^\circ$$

$$3 \cdot 36 = 108^\circ$$

$$A_s = \pi (12.5)^2 \left(\frac{108}{360} \right)$$

$$\boxed{\frac{375}{8} \pi \text{ cm}^2}$$

9. A lighthouse projects a beam of light that can be seen from up to 4 miles away and covers an angle of 35° . What is the area of the region which a ship can see the light from the lighthouse?



$$A_s = \pi (4)^2 \left(\frac{35}{360} \right)$$

$$\boxed{\frac{14}{9} \pi \text{ miles}^2 \text{ or } 4.89 \text{ miles}^2}$$