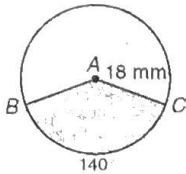


WS 7.10 Mixed Review: Area of Sector and Arc Length

Key

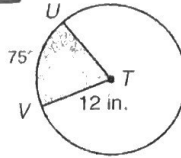
Find the area of each sector. Give your answer in terms of π and rounded to the nearest hundredth.

1.



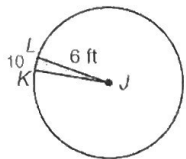
$$\frac{126\pi}{360} \approx 395.84 \text{ mm}^2$$

$$\frac{\pi(r^2)\theta}{360}$$



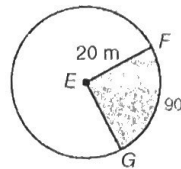
$$30\pi \approx 94.25 \text{ in}^2$$

3.



$$\pi \approx 3.14 \text{ ft}^2$$

4.



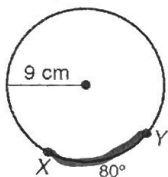
$$100\pi \approx 314.16 \text{ m}^2$$

5. The speedometer needle in Ignacio's car is 2 inches long. The needle sweeps out a 130° sector during acceleration from 0 to 60 mi/h. Find the area of this sector. Round to the nearest hundredth.

$$\frac{13\pi}{9} \approx 4.54 \text{ cm}^2$$

Find each arc length. Give your answer in terms of π and rounded to the nearest hundredth.

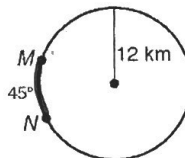
6.



$$\frac{2\pi r \theta}{360}$$

$$4\pi \approx 15.57 \text{ cm}$$

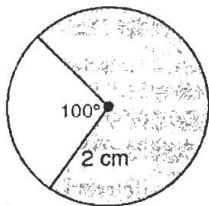
7.



$$3\pi \approx 9.42 \text{ cm}$$

Find the shaded area of each figure. Give your answer in terms of π and round to the nearest hundredth.

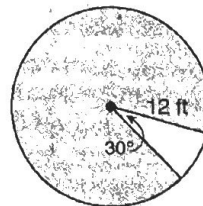
8.



$$\frac{\pi(r^2)\theta}{360}$$

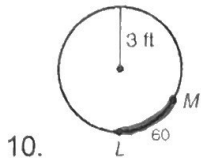
$$\frac{26\pi}{9} \approx 9.08 \text{ cm}^2$$

9.



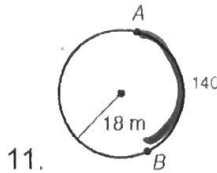
$$132\pi \approx 414.69 \text{ cm}^2$$

Find each arc length. Give your answer in terms of π and rounded to the nearest hundredth.



$$\frac{2\pi r \theta}{360}$$

$$\pi \approx 3.14 \text{ ft}$$



$$14\pi \approx 43.98 \text{ m}$$

12. Find the length of an arc with measure of 45° in a circle with radius 2 mi.

$$\frac{\pi}{2} = 1.57 \text{ mi}$$

13. Given a circle with an arc length of 15 mm that corresponds to a central angle of 120° . Find the circumference

$$45 \text{ mm}$$

14. A windshield wiper blade is 18 inches long. To the nearest square inch, what is the area covered by the blade as it rotates through an angle of 122° ?

$$\frac{549\pi}{5} \approx 344.95 \text{ in}^2 \approx \boxed{345 \text{ in}^2}$$

15. You are working at a pizza delivery store and someone calls in a special order. They want a large pizza (15 inches in diameter) but only want pepperoni on $\frac{1}{5}$ of the pizza. What is the area of the slice of pizza that will have pepperoni?

$$\frac{45\pi}{4} \approx 35.34 \text{ in}^2$$

16. If the area of a sector is 24π cm and its central angle measure is 150° , what is the area of the entire circle?

$$\frac{288\pi}{5} \approx 180.96 \text{ cm}^2$$

17. The area of a sector of a circle with a radius of 6 cm is 15 cm^2 . Find the measure of the central angle rounded to the nearest degree.

$$\approx 47.75 \approx \boxed{48^\circ}$$

18. A Central angle in a circle with a radius of 4 cm is 75° . What is the length of the intercepted arc rounded to the nearest hundredth?

$$\frac{5\pi}{3} \approx 5.24 \text{ cm}$$