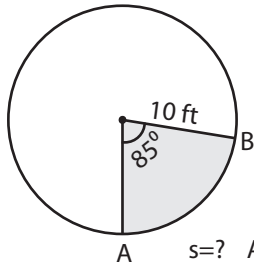


Arc Length and Area of a Sector

Example:

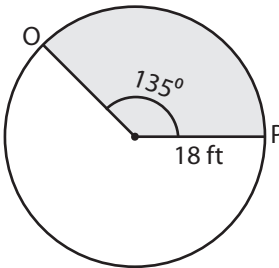


$$\begin{aligned} \text{Arc length of a sector (s)} &= \frac{\theta \times \pi \times r}{180^\circ} \\ &= \frac{85^\circ \times 3.14 \times 10}{180^\circ} \\ &= \mathbf{14.83 \text{ ft}} \end{aligned}$$

$$\begin{aligned} \text{Area} &= \frac{s \times r}{2} \\ &= \frac{14.83 \times 10}{2} \\ &= \mathbf{74.15 \text{ ft}^2} \end{aligned}$$

Find the length of the arc and area of the shaded region. Round the answer to two decimal places. (use $\pi = 3.14$)

1)



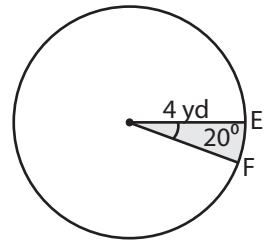
Length of the arc OP = _____

Area of a sector = _____

2)



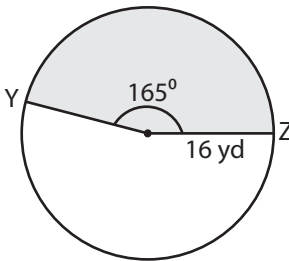
3)



Length of the arc EF = _____

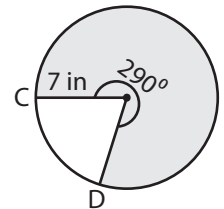
Area of a sector = _____

4)



Length of the arc YZ = _____

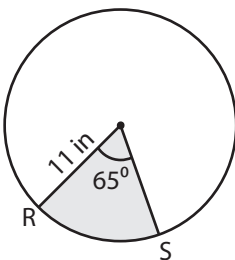
Area of a sector = _____



Length of the arc CD = _____

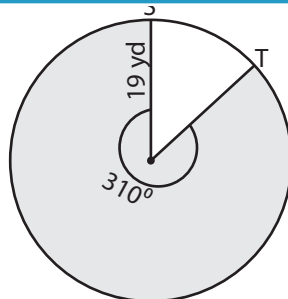
Area of a sector = _____

7)



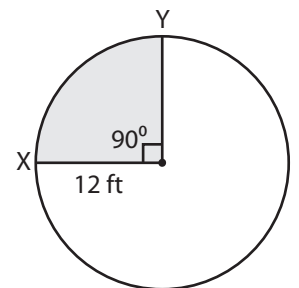
Length of the arc RS = _____

Area of a sector = _____



Length of the arc ST = _____

Area of a sector = _____



Length of the arc XY = _____

Area of a sector = _____

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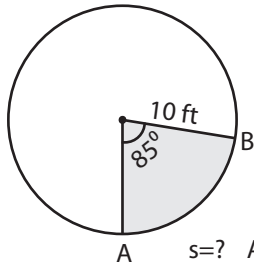
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Arc Length and Area of a Sector

Example:

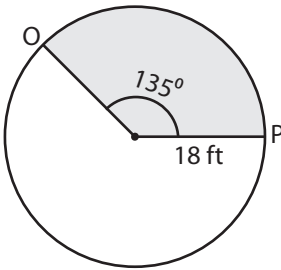


$$\begin{aligned} \text{Arc length of a sector (s)} &= \frac{\theta \times \pi \times r}{180^\circ} \\ &= \frac{85^\circ \times 3.14 \times 10}{180^\circ} \\ &= \mathbf{14.83 \text{ ft}} \end{aligned}$$

$$\begin{aligned} \text{Area} &= \frac{s \times r}{2} \\ &= \frac{14.83 \times 10}{2} \\ &= \mathbf{74.15 \text{ ft}^2} \end{aligned}$$

Find the length of the arc and area of the shaded region. Round the answer to two decimal places. (use $\pi = 3.14$)

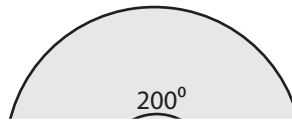
1)



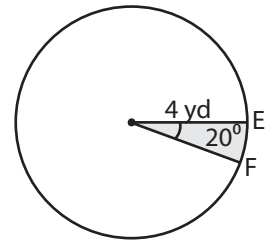
Length of the arc OP = **42.39**

Area of a sector = **381.53**

2)



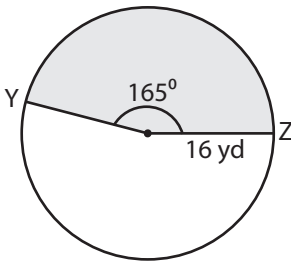
3)



Length of the arc EF = **1.40 yd**

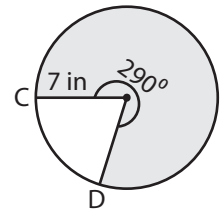
Area of a sector = **2.79 yd²**

4)



Length of the arc YZ = **46.05**

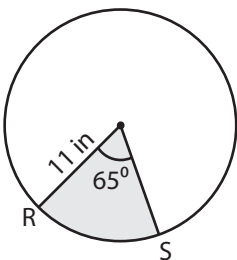
Area of a sector = **368.43**



Length of the arc CD = **35.41 in**

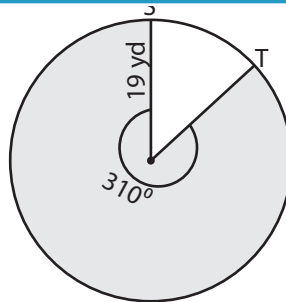
Area of a sector = **123.94 in²**

7)



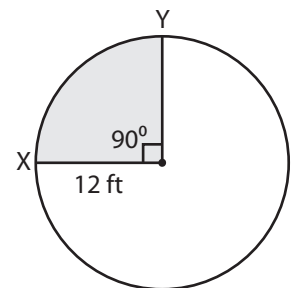
Length of the arc RS = **12.47 in**

Area of a sector = **68.60 in²**



Length of the arc ST = **102.75 yd**

Area of a sector = **976.10 yd²**



Length of the arc XY = **18.84 ft**

Area of a sector = **113.04 ft²**

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