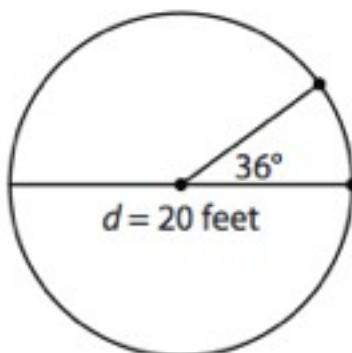


EXAMPLE:

A circle has a diameter of 20 feet. Find the length of an arc intercepted by a central angle measuring 36° .



1. Find the circumference of the circle.

$$\text{circumference} = \pi \cdot \text{diameter}$$

$$C = \pi d = 20\pi \text{ feet}$$

2. Set up a proportion.

$$\frac{\text{arc length}}{\text{circumference}} = \frac{\text{degree measure}}{360^\circ}$$

$$\frac{s}{C} = \frac{\text{degree measure}}{360^\circ}$$

$$\frac{s}{20\pi} = \frac{36}{360}$$

3. Multiply both sides by 20π to find the arc length.

$$s = \frac{36}{360} \cdot 20\pi = \frac{1}{10} \cdot 20\pi = 2\pi \text{ feet} \approx 6.28 \text{ feet}$$

The length of the arc is approximately 6.28 feet.



