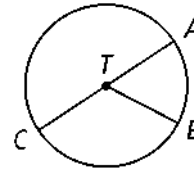


# 10-6 Reteaching

## Circles and Arcs

The circumference is the measure of the outside edge of a circle. Sections of the circumference are called arcs. There are three types of arcs.



	Minor arcs	Semicircles	Major arcs
degrees	less than $180^\circ$	exactly $180^\circ$	more than $180^\circ$
name	named by two endpoints:	named by three endpoints:	named by three endpoints:
example	$\widehat{AB}$ and $\widehat{CB}$ are minor arcs.	$\widehat{ABC}$ is a semicircle.	$\widehat{CAB}$ is a major arc.
measure	measure = measure of corresponding central angle	measure = 180	measure = $360 - \text{measure of related minor arc}$

The circumference of a circle is  $C = 2\pi r$ , or  $C = \pi d$ .

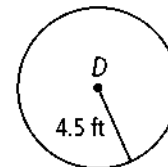
### Problem

A circle has a 4.5-ft radius. What is the circumference of the circle?

$$C = 2\pi r$$

$$C = 2(3.14)(4.5) \quad \text{Substitute 3.14 for } \pi \text{ and 4.5 for } r.$$

$$C = 28.26 \text{ ft} \quad \text{Simplify.}$$



The measure of an arc is in degrees. The arc's length depends on the size of the circle because it represents a fraction of the circumference.

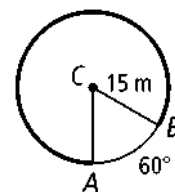
$$\text{Length of } \overset{a}{\widehat{AB}} = \frac{m\overset{a}{\widehat{AB}}}{360} \cdot 2\pi r$$

### Problem

What is the length of the darkened arc? Leave your answer in terms of  $\pi$ .

$$\begin{aligned} \text{Length of } \overset{a}{\widehat{AB}} &= \frac{m\overset{a}{\widehat{AB}}}{360} \cdot 2\pi r \\ &= \frac{300}{360} \cdot 2\pi(15) \\ &= 25\pi \text{ m} \end{aligned}$$

$$\begin{aligned} &\text{Substitute 300 for } m\overset{a}{\widehat{AB}} \text{ and 15 for } r. \\ &\text{Simplify.} \end{aligned}$$



The length of the darkened arc is  $25\pi$  m.

