

# 10-2 Lesson Reading Guide

## Measuring Angles and Arcs

### Get Ready for the Lesson

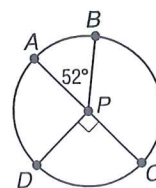
Read the introduction to Lesson 10-2 in your textbook.

- What is the measure of the angle formed by the hour hand and the minute hand of the clock at 5:00?  $150^\circ$
- What is the measure of the angle formed by the hour hand and the minute hand at 10:30? (Hint: How has each hand moved since 10:00?)  $135^\circ$

### Read the Lesson

1. Refer to  $\odot P$ .  $\overline{AC}$  is a diameter. Indicate whether each statement is *true* or *false*.

- $\overline{DAB}$  is a major arc. *False*
- $\overline{ADC}$  is a semicircle. *True*
- $\overline{AD} \cong \overline{CD}$  *True*
- $\overline{DA}$  and  $\overline{AB}$  are adjacent arcs. *True*
- $\angle BPC$  is an acute central angle. *False*
- $\angle DPA$  and  $\angle BPA$  are supplementary central angles. *False*



2. Refer to the figure in Exercise 1. Give each of the following arc measures.

- $m\overline{AB}$   $52^\circ$
- $m\overline{CD}$   $90^\circ$
- $m\overline{BC}$   $128^\circ$
- $m\overline{ADC}$   $180^\circ$
- $m\overline{DAB}$   $142^\circ$
- $m\overline{DCB}$   $218^\circ$
- $m\overline{DAC}$   $270^\circ$
- $m\overline{BDA}$   $308^\circ$

3. Underline the correct word or number to form a true statement.

- The arc measure of a semicircle is (90/180/360).
- Arcs of a circle that have exactly one point in common are (congruent/opposite/adjacent) arcs.
- The measure of a major arc is greater than (0/90/180) and less than (90/180/360).
- Suppose a set of central angles of a circle have interiors that do not overlap. If the angles and their interiors contain all points of the circle, then the sum of the measures of the central angles is (90/270/360).
- The measure of an arc formed by two adjacent arcs is the (sum/difference/product) of the measures of the two arcs.
- The measure of a minor arc is greater than (0/90/180) and less than (90/180/360).

### Remember What You Learned

4. A good way to remember something is to explain it to someone else. Suppose your classmate Luis does not like to work with proportions. What is a way that he can find the length of a minor arc of a circle without solving a proportion?

Sample:  $\div$  the measure of the central  $\angle$  by 360 to form a fraction. Multiply the fraction by the circumference of the circle to find the arc length.

# 10-1 Lesson Reading Guide

## Circles and Circumference

### Get Ready for the Lesson

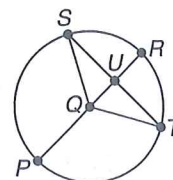
Read the introduction to Lesson 10-1 in your textbook.

How could you measure the approximate distance around the circular carousel using everyday measuring devices?

### Read the Lesson

1. Refer to the figure.

- Name the circle.  $\odot Q$
- Name four radii of the circle.  $QP, QR, QS, QT$
- Name a diameter of the circle.  $PR$
- Name two chords of the circle.  $PR$  and  $ST$



2. Match each description from the first column with the best term from the second column. (Some terms in the second column may be used more than once or not at all.)

- a segment other than the diameter endpoints on a circle **iii**
- the set of all points in a plane that are the same distance from a given point **iv**
- the distance between the center of a circle and any point on the circle **i**
- a chord that passes through the center of a circle **ii**
- a segment whose endpoints are the center and any point on a circle **i**
- a chord made up of two collinear radii **ii**
- the distance around a circle **v**

- radius
- diameter
- chord
- circle
- circumference

3. Which equations correctly express a relationship in a circle?

**A.**  $d = 2r$

**B.**  $C = \pi r$

**C.**  $C = 2d$

**E.**  $r = \frac{d}{\pi}$

**F.**  $C = r^2$

**G.**  $C = 2\pi r$

**D.**  $d = \frac{C}{\pi}$

**H.**  $d = \frac{1}{2}r$

$C = d\pi \rightarrow \div \text{by } \pi$

### Remember What You Learned

- A good way to remember a new geometric term is to relate the word or its parts to geometric terms you already know. Look up the origins of the two parts of the word *diameter* in your dictionary. Explain the meaning of each part and give a term you already know that shares the origin of that part.

*dia* → means across  
*meter* → means measure