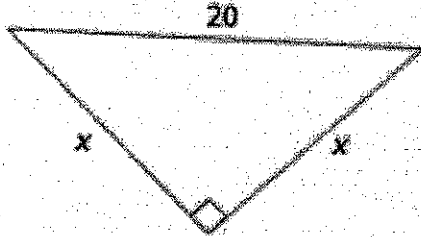


Monday March 17, 2014

## 10.1 Warm-Up

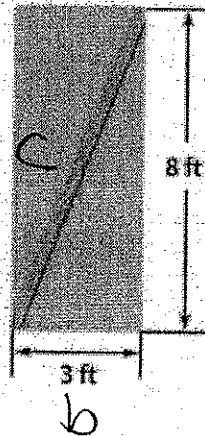
1.

Find  $x$ . Round to the nearest tenth.



2.

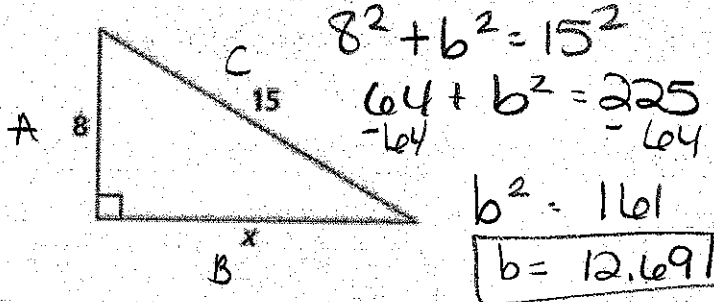
**CONSTRUCTION** Jennifer is putting a brace in a board, as shown at the right. Find the length of the board used for a brace.



$$\begin{aligned}8^2 + 3^2 &= C^2 \\64 + 9 &= C^2 \\73 &= C^2 \\C &= 8.541\end{aligned}$$

3.

Find  $x$ . Round to the nearest tenth.



$$\begin{aligned}8^2 + b^2 &= 15^2 \\64 + b^2 &= 225 \\-64 & \quad -64 \\b^2 &= 161 \\b &= 12.691\end{aligned}$$

## 10.1 Circles and Circumference

Target: Use properties of circles to name  
and identify particular parts

**1 Segments in Circles** A circle is the locus or set of all points in a plane equidistant from a given point called the center of the circle.



Segments that intersect a circle have special names.

**KeyConcept Special Segments in a Circle**

A **radius** (plural radii) is a segment with endpoints at the center and on the circle.

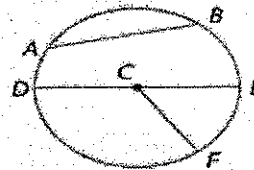
Examples  $\overline{CD}$ ,  $\overline{CE}$ , and  $\overline{CF}$  are radii of  $\odot C$ .

A **chord** is a segment with endpoints on the circle.

Examples  $\overline{AB}$  and  $\overline{DE}$  are chords of  $\odot C$ .

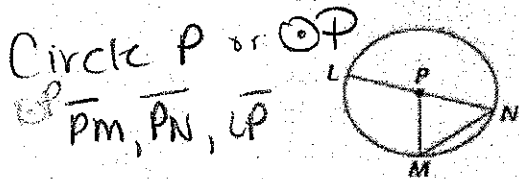
A **diameter** of a circle is a chord that passes through the center and is made up of collinear radii.

Example  $\overline{DE}$  is a diameter of  $\odot C$ . Diameter  $\overline{DE}$  is made up of collinear radii  $\overline{CD}$  and  $\overline{CE}$ .

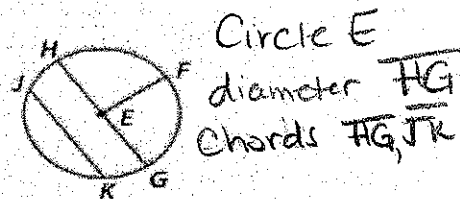


**Example 1 Identify Segments in a Circle**

a. Name the circle and identify a radius.



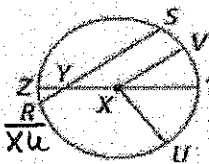
b. Identify a chord and a diameter of the circle.



**Guided Practice**

1. Name the circle, a radius, a chord, and a diameter of the circle.

① Circle X  
 ② radius  $\rightarrow \overline{ZX}$ ,  $\overline{XT}$ ,  $\overline{XV}$ ,  $\overline{Xu}$   
 ③ Chords  $\rightarrow \overline{ZT}$ ,  $\overline{RS}$  ④ diameter  $\overline{ZT}$



**KeyConcept Radius and Diameter Relationships**

If a circle has radius  $r$  and diameter  $d$ , the following relationships are true.

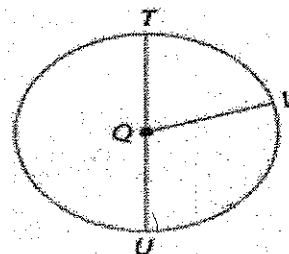
Radius Formula  $r = \frac{d}{2}$  or  $r = \frac{1}{2}d$

Diameter Formula  $d = 2r$

**Example 2 Find Radius and Diameter**

If  $QV = 8$  inches, what is the diameter of  $\odot Q$ ?

$d = 2(8)$   
 $d = 16 \text{ in}$



**Guided Practice**

2A. If  $TU = 14$  feet, what is the radius of  $\odot Q$ ?

$r = \frac{14}{2} = 7 \text{ feet}$

2B. If  $QT = 11$  meters, what is  $QU$ ?

11 meters