

Name: \_\_\_\_\_

# Geometry 10.1-10.2 HW

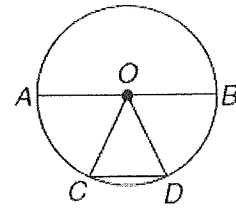
## 1. Identification

a. Name the circle.

b. Name the radii of the circle.

c. Name the chords of a circle.

d. Name the diameter of the circle.

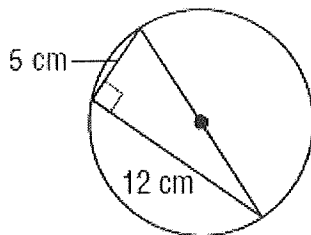


2. Find the circumference of a circle with the radius of  $r=3\sqrt{2}$ . Round to the nearest hundredth.

3. If the radius of a circle is 4 what is the diameter and what is the circumference?

4. If the diameter of a circle is 6, find the radius and circumference.

5. Find the circumference and area of the circle.



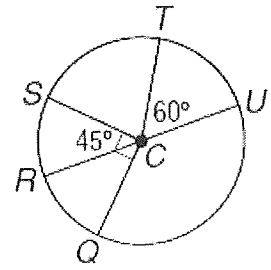
Find each measure.

1.  $m\angle SCT$

2.  $m\angle SCU$

3.  $m\angle SCQ$

4.  $m\angle QCT$



In  $\odot O$ ,  $m\angle BOA = 44$ . Find each measure.

5.  $m\widehat{BA}$

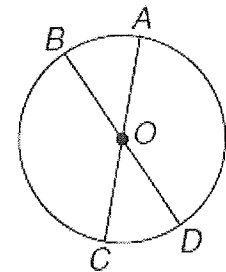
6.  $m\widehat{BC}$

7.  $m\widehat{CD}$

8.  $m\widehat{ACB}$

9.  $m\widehat{BCD}$

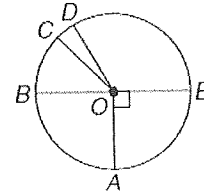
10.  $m\widehat{AD}$



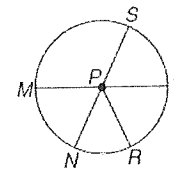
Arc Length:  $l = \frac{A}{360} \cdot C$

The diameter of  $\odot O$  is 24 units long. Find the length of each arc for the given angle measure. Round to the nearest tenth.

1.  $\widehat{DE}$  if  $m\angle DOE = 120$



The diameter of  $\odot P$  is 15 units long and  $\angle SPT \cong \angle RPT$ . Find the length of each arc for the given angle measure. Round to the nearest tenth.



2.  $\widehat{RT}$  if  $m\angle SPT = 70$

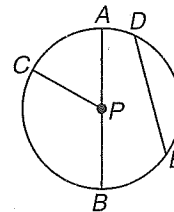
3.  $\widehat{NR}$  if  $m\angle RPT = 50$

4. Explain the difference between arc Length and arc measure.

# 10-1 Skills Practice

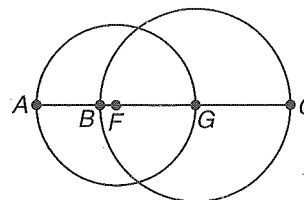
## Circles and Circumference

For Exercises 1–5, refer to the circle at the right.



1. Name the circle.
2. Name a radius.
3. Name a chord.
4. Name a diameter.
5. Name a radius not drawn as part of a diameter.
6. Suppose the diameter of the circle is 16 centimeters. Find the radius.
7. If  $PC = 11$  inches, find  $AB$ .

The diameters of  $\odot F$  and  $\odot G$  are 5 and 6 units, respectively. Find each measure.

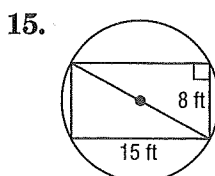
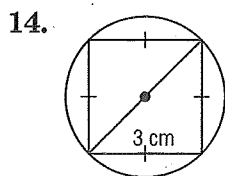


8.  $BF$
9.  $AB$

The radius, diameter, or circumference of a circle is given. Find the missing measures to the nearest hundredth.

- |  |  |
|--|--|
| 10. $r = 8$ cm<br>$d =$ _____, $C \approx$ _____ | 11. $r = 13$ ft<br>$d =$ _____, $C \approx$ _____          |
| 12. $d = 9$ m<br>$r =$ _____, $C \approx$ _____  | 13. $C = 35.7$ in.<br>$d \approx$ _____, $r \approx$ _____ |

Find the exact circumference of each circle.



# 10-2 Study Guide and Intervention *(continued)*

## Measuring Angles and Arcs

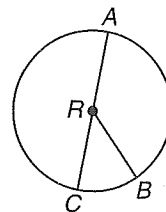
**Arc Length** An arc is part of a circle and its length is a part of the circumference of the circle.

**Example** In  $\odot R$ ,  $m\angle ARB = 135$ ,  $RB = 8$ , and  $AC$  is a diameter. Find the length of  $\widehat{AB}$ .

$m\angle ARB = 135$ , so  $m\widehat{AB} = 135$ . Using the formula  $C = 2\pi r$ , the circumference is  $2\pi(8)$  or  $16\pi$ . To find the length of  $\widehat{AB}$ , write a proportion to compare each part to its whole.

$\frac{\text{length of } \widehat{AB}}{\text{circumference}} = \frac{\text{degree measure of arc}}{\text{degree measure of circle}}$	Proportion
$\frac{\ell}{16\pi} = \frac{135}{360}$	Substitution
$\ell = \frac{(16\pi)(135)}{360}$	Multiply each side by $16\pi$ .
$= 6\pi$	Simplify.

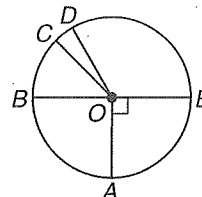
The length of  $\widehat{AB}$  is  $6\pi$  or about 18.85 units.



### Exercises

The diameter of  $\odot O$  is 24 units long. Find the length of each arc for the given angle measure. Round to the nearest tenth.

- $\widehat{DE}$  if  $m\angle DOE = 120$
- $\widehat{DEA}$  if  $m\angle DOE = 120$
- $\widehat{BC}$  if  $m\angle COB = 45$
- $\widehat{CBA}$  if  $m\angle COB = 45$



The diameter of  $\odot P$  is 15 units long and  $\angle SPT \cong \angle RPT$ . Find the length of each arc for the given angle measure. Round to the nearest tenth.

- $\widehat{RT}$  if  $m\angle SPT = 70$
- $\widehat{NR}$  if  $m\angle RPT = 50$
- $\widehat{MST}$
- $\widehat{MRS}$  if  $m\angle MPS = 140$

