

NAME: _____

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CIRCLES & AREA

PERIOD: _____

What Are the Different Parts of a Circle?

(Topic #1)

A **circle** is the set of all points in a plane that are the same distance from a given point, called the **center**.

A circle is named by its center. *For example*, if point A is the center of the circle, then the name of the circle is circle A. There are special names for the different parts of a circle.

The **diameter** is a line segment that passes through the center of the circle and whose endpoints lie on the circle.

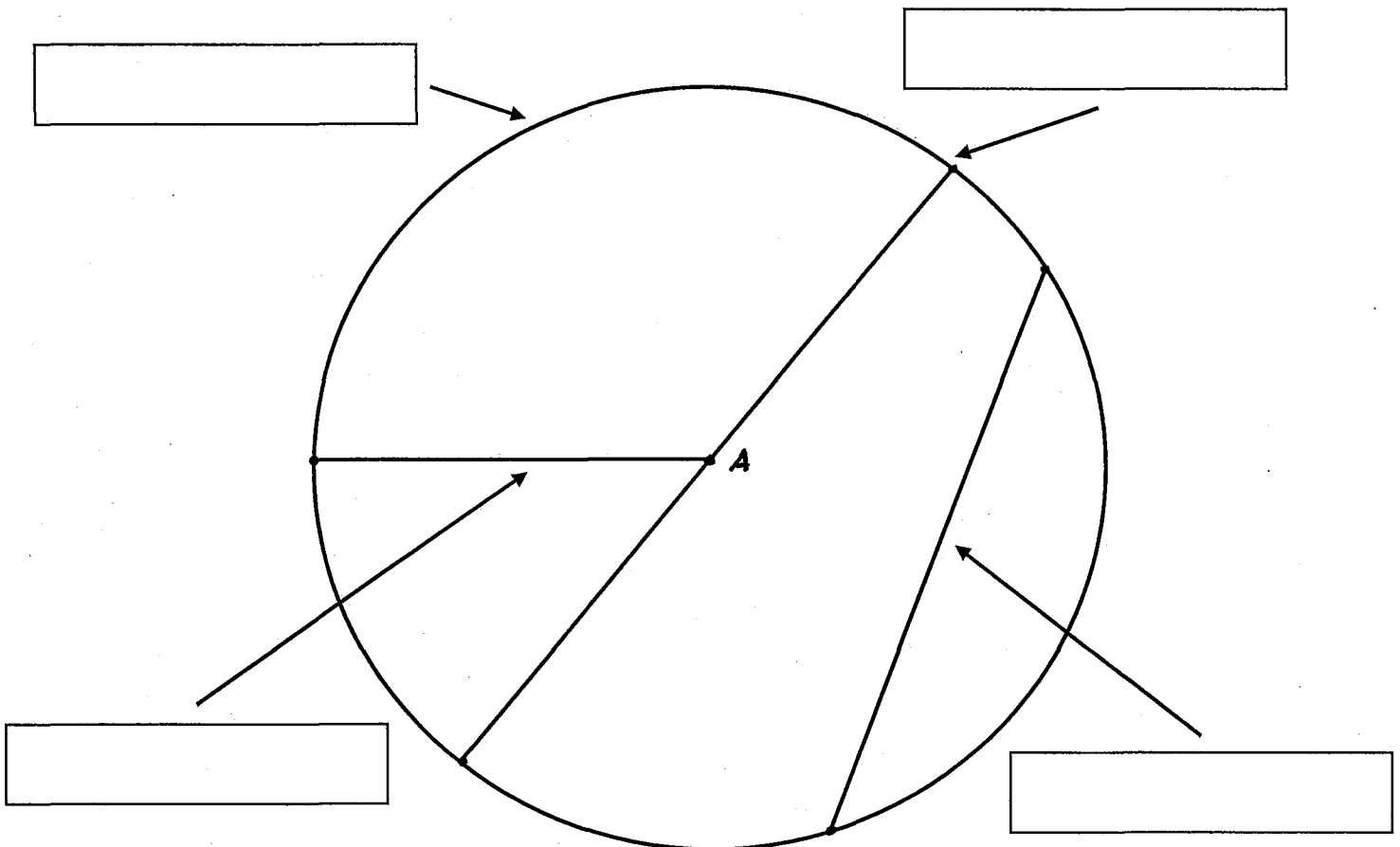
The **radius** is a line segment whose endpoints are the center of the circle and any point on the circle.

A **chord** is a line segment whose endpoints are any two points on a circle.

An **arc** is a part of a circle named by its endpoints.

The **circumference** is the distance around a circle.

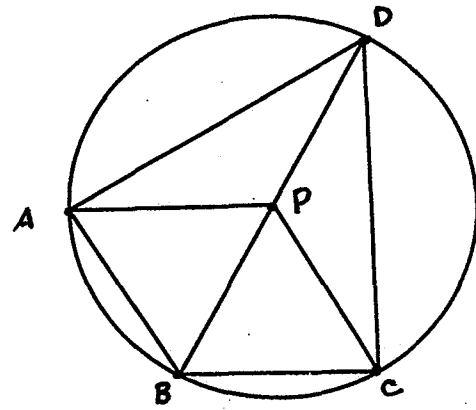
Fill in each box with one of the following terms: *diameter, radius, chord, and arc*



EXAMPLE 1: Identifying Parts of Circles

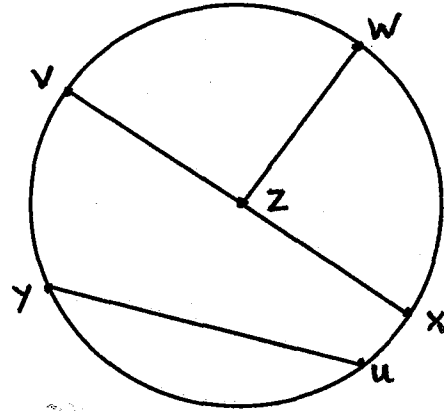
Name the parts of circle P.

- a) radii: _____
- b) diameter: _____
- c) chords: _____



PRACTICE: Use circle Z for Question #1.

- 1. Name 3 radii of circle Z.
- 2. Name 2 chords of circle Z.
- 3. Name the diameter of circle Z.



The table shows the approximate measurements of two sizes of hula hoops.

Size	Radius (inches)	Diameter (inches)
child	14	28
adult	20	40

Describe the relationship between the diameter and the radius of each hula hoop.

Radius and Diameter
The diameter, d , of a circle is twice its radius, r .
The radius, r , of a circle is half of its diameter, d .
$d = 2r \qquad r = \frac{d}{2}$

EXAMPLE 2: Finding a Radius and a Diameter

a) The diameter of a circle is 14 inches.
Find the radius.

b) The radius of a circle is 8 feet. Find the
diameter.

PRACTICE: Find the radius or diameter of each circle with the given measurements.

2. The diameter of a circle is 23 centimeters.
Find the radius.

3. The radius of a circle is 3 inches. Find
the diameter.

4. The diameter of a circle is 16 yards. Find
the radius.

5. The radius of a circle is 5.2 meters. Find
the diameter.

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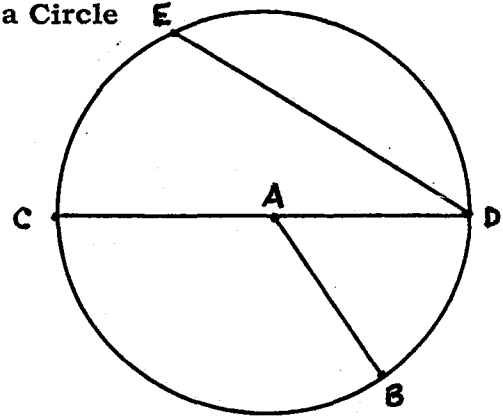
PERIOD: _____

HOMEWORK - (Topic #1)

Identifying Different Parts of a Circle

Use circle A to answer the questions below.

1. \overline{AB} is a _____.
2. \overline{CD} is a _____.
3. \overline{DE} is a _____.
4. \overline{CA} is a _____.



Find the radius or diameter of each circle with the given measurements. *Show all work.*

<p>5. The diameter of a circle is 5 millimeters. Find the radius.</p>	<p>6. The radius of a circle is 17 feet. Find the diameter.</p>
<p>7. The diameter of a circle is 24 inches. Find the radius.</p>	<p>8. The radius of a circle is 22.8 meters. Find the diameter.</p>

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What Are the Different Parts of a Circle? (Topic #1)

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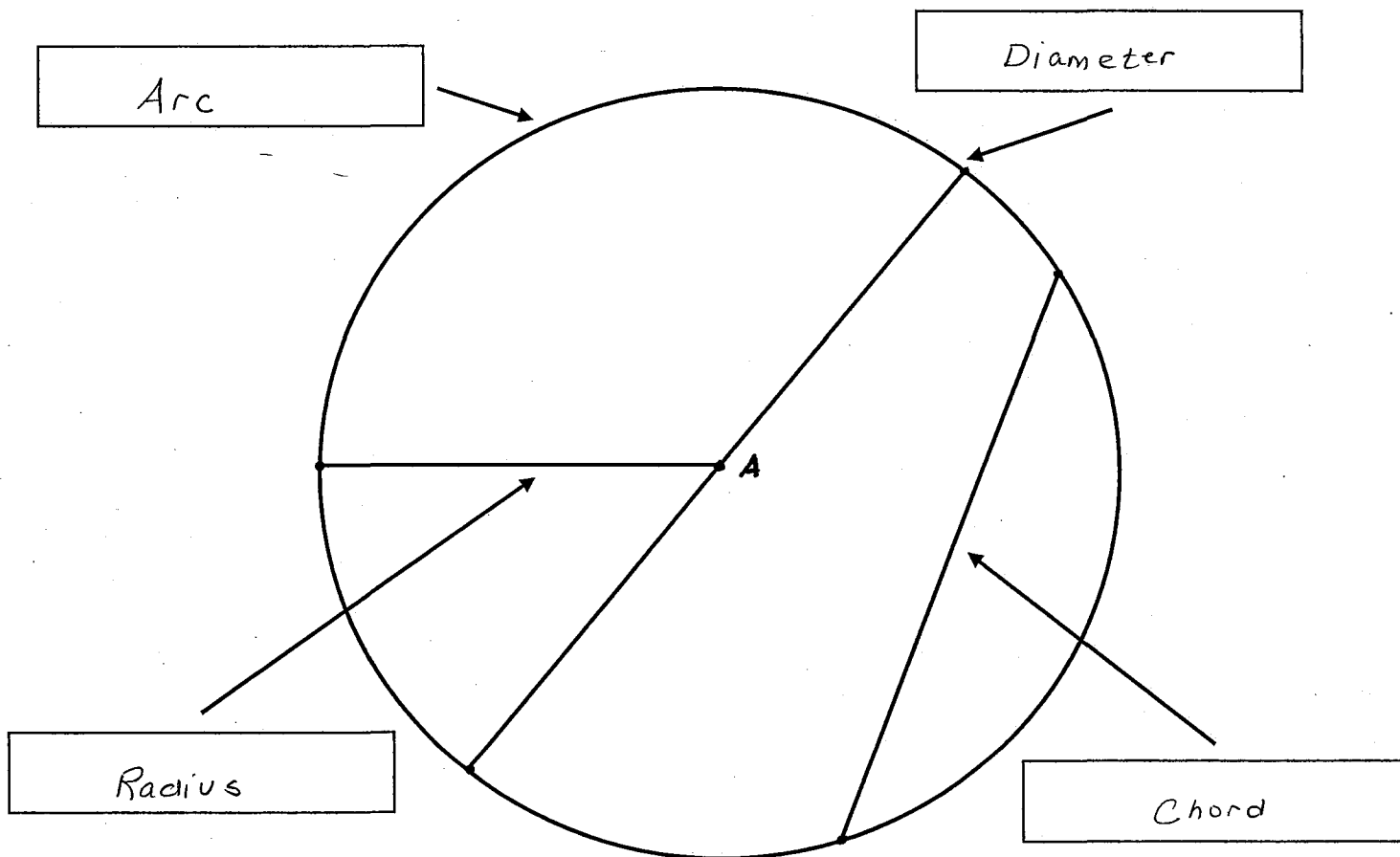
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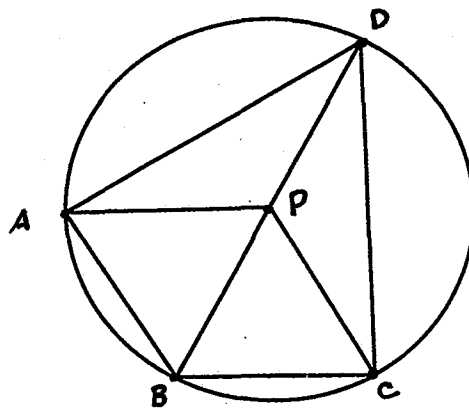
Fill in each box with one of the following terms: *diameter, radius, chord, and arc*



EXAMPLE 1: Identifying Parts of Circles

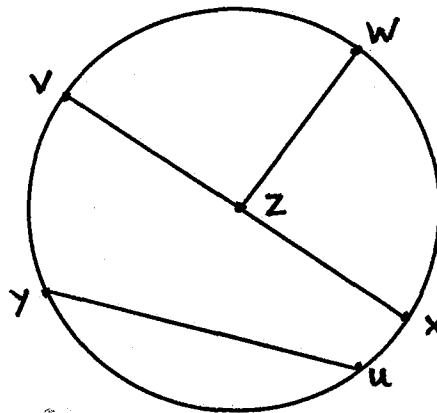
Name the parts of circle P.

- a) radii: $\overline{AP}, \overline{BP}, \overline{CP}, \overline{DP}$
 b) diameter: \overline{BD}
 c) chords: $\overline{AD}, \overline{AB}, \overline{BC}, \overline{CD}, \overline{BD}$



PRACTICE: Use circle Z for Question #1.

1. Name 3 radii of circle Z.
 $\overline{ZV}, \overline{ZX}, \overline{ZW}$
2. Name 2 chords of circle Z.
 $\overline{YU}, \overline{VX}$
3. Name the diameter of circle Z.
 \overline{VX}



The table shows the approximate measurements of two sizes of hula hoops.

Size	Radius (inches)	Diameter (inches)
child	14	28
adult	20	40

Describe the relationship between the diameter and the radius of each hula hoop.

The diameter is 2 times the radius. $d = 2r$
 The radius is half the diameter. $r = \frac{d}{2}$

Radius and Diameter	
The diameter, d , of a circle is twice its radius, r .	
The radius, r , of a circle is half of its diameter, d .	
$d = 2r$	$r = \frac{d}{2}$

EXAMPLE 2: Finding a Radius and a Diameter

- a) The diameter of a circle is 14 inches.
Find the radius.

$$r = \frac{d}{2}$$

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

- b) The radius of a circle is 8 feet. Find the diameter.

$$d = 2r$$

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

PRACTICE: Find the radius or diameter of each circle with the given measurements.

2. The diameter of a circle is 23 centimeters.
Find the radius.

$$d = 23 \text{ cm}$$

$$r = \underline{\hspace{2cm}}$$

$$r = \frac{d}{2}$$

$$r = \frac{23}{2}$$

$$r = 11.5 \text{ cm}$$

3. The radius of a circle is 3 inches. Find the diameter.

$$r = 3 \text{ in}$$

$$d = \underline{\hspace{2cm}}$$

$$d = 2r$$

$$d = 2(3)$$

$$d = 6 \text{ in}$$

4. The diameter of a circle is 16 yards. Find the radius.

$$d = 16 \text{ yds}$$

$$r = \underline{\hspace{2cm}}$$

$$r = \frac{d}{2}$$

$$r = \frac{16}{2}$$

$$r = 8 \text{ yds}$$

5. The radius of a circle is 5.2 meters. Find the diameter.

$$r = 5.2 \text{ m}$$

$$d = \underline{\hspace{2cm}}$$

$$d = 2r$$

$$d = 2(5.2)$$

$$d = 10.4 \text{ m}$$

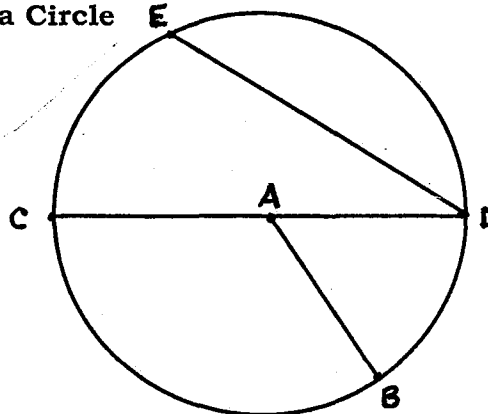
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HOMEWORK - (Topic #1)
Identifying Different Parts of a Circle

Use circle A to answer the questions below.

- \overline{AB} is a radius.
- \overline{CD} is a diameter.
- \overline{DE} is a chord.
- \overline{CA} is a radius.



Find the radius or diameter of each circle with the given measurements. Show all work.

<p>5. The diameter of a circle is 5 millimeters. Find the radius.</p> $d = 5 \text{ mm}$ $r = \underline{\quad}$ $r = \frac{d}{2}$ $r = \frac{5}{2}$ $r = 2.5 \text{ mm}$	<p>6. The radius of a circle is 17 feet. Find the diameter.</p> $r = 17 \text{ ft}$ $d = \underline{\quad}$ $d = 2r$ $d = 2(17)$ $d = 34 \text{ ft}$
<p>7. The diameter of a circle is 24 inches. Find the radius.</p> $d = 24 \text{ in}$ $r = \underline{\quad}$ $r = \frac{d}{2}$ $r = \frac{24}{2}$ $r = 12 \text{ in}$	<p>8. The radius of a circle is 22.8 meters. Find the diameter.</p> $r = 22.8 \text{ m}$ $d = \underline{\quad}$ $d = 2r$ $d = 2(22.8)$ $d = 45.6 \text{ m}$