

9.0 Circle Definitions and Arcs Homework Day 1
 Geometry 3313

Name Key
 Date _____ Period _____

Identify each of the following for circle P.

1. Name 3 chords.

$\overline{EF}, \overline{AB}, \overline{BD}$

2. Name 1 diameter.

\overline{EC}

3. Name 5 radii.

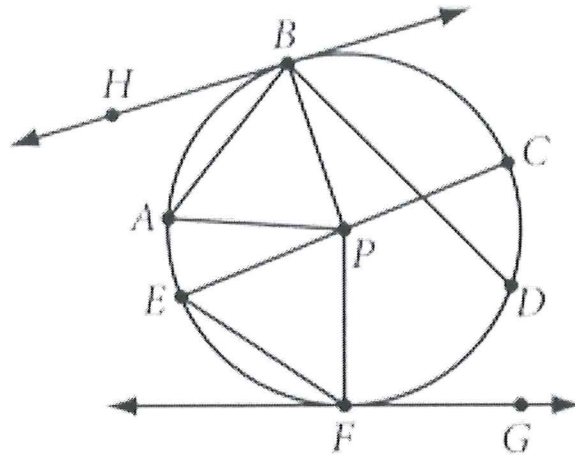
$\overline{PB}, \overline{PA}, \overline{PE}, \overline{PF}, \overline{PC}$

4. Name 1 inscribed angle.

$\angle ABD$

6. Name 2 points of tangencies.

$\bullet F, \bullet B$



5. Name 2 tangents.

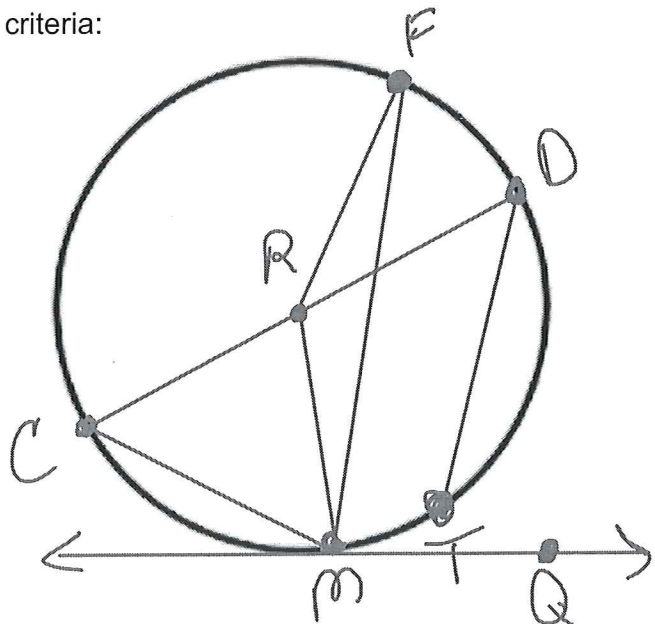
$\overrightarrow{HB}, \overrightarrow{FG}$

7. Name 2 central angles.

$\angle APB, \angle EPF$

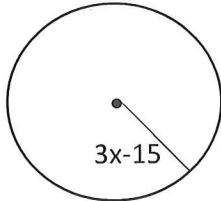
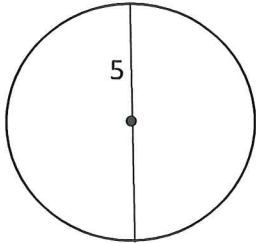
8. Draw and label a circle with the following criteria:

- Center is point R
- Diameter is \overline{CD}
- Two radii \overline{RF} and \overline{RM}
- Chords \overline{FM} and \overline{CM}
- Inscribed angle $\angle CDT$
- Tangent line \overline{MQ}



Determine if each of the following sets of circles are congruent. The circles may not be drawn to scale.

9. Diameter = $2x - 4$

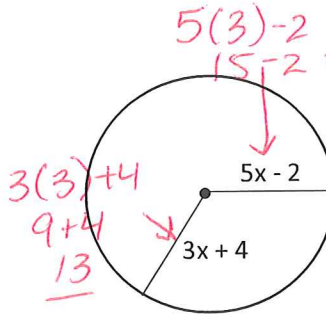


$$2x - 4 = 10 \quad r = 3(7) - 15$$

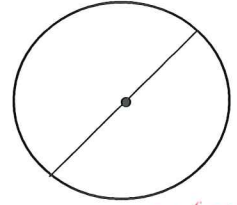
$$2x = 14 \quad r = 6$$

$x = 7$ Circles not \cong

10.



Diameter = $4x + 1$



$$5x - 2 = 3x + 4$$

$$2x - 2 = 4$$

$$\frac{2x}{2} = \frac{6}{2}$$

$$x = 3$$

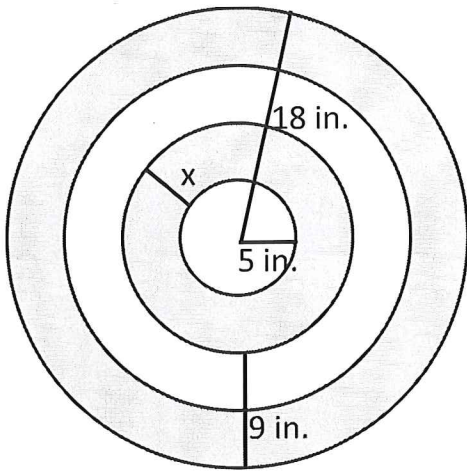
$$4(3) + 1$$

$$12 + 1$$

Diameter = 13

NOT \cong

11. A dartboard is composed of concentric circles. Use the information provided to find the length of the inner grey ring of the dartboard.



$$x = 18 - 5 - 9$$

$$x = 4 \text{ in}$$

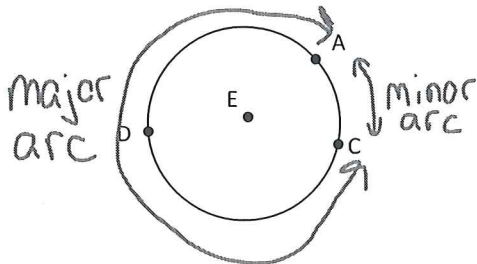
12. Give 3 more examples of things in the real world which are composed of concentric circles.

Ripples in a pond, a CD, Rings in a tree

9.0 Circle Definitions and Arcs Homework Day 2
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Name Key
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1. What is the difference between a major and minor arc? Explain using the picture and a few sentences.



The minor arc is less than 180° and is \widehat{AC} in the picture
 The major arc is greater than 180° and is \widehat{ADC} in the picture.

Given circle A, find the measures of the arcs. Are the arcs congruent?

2. $m\widehat{BC}$ and $m\widehat{EF}$

$m\widehat{BC} = 58^\circ$
 $m\widehat{EF} = 58^\circ$

Congruent

4. $m\widehat{BCD}$ and $m\widehat{DEF}$

$m\widehat{BCD} = 130^\circ$
 $m\widehat{DEF} = 130^\circ$
 Congruent

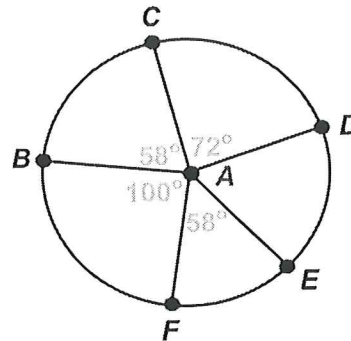
3. $m\widehat{CD}$ and $m\widehat{DE}$

$m\widehat{CD} = 72^\circ$
 $m\widehat{DE} = 72^\circ$

Congruent

5. $m\widehat{BFE}$ and $m\widehat{CBF}$

$m\widehat{BFE} = 158^\circ$
 $m\widehat{CBF} = 158^\circ$
 Congruent



Find the measure of each arc in circle O. $m\angle BOA = 44^\circ$

6. $m\widehat{BA}$

44°

7. $m\widehat{BC}$

136°

8. $m\widehat{CD}$

44°

9. $m\widehat{ACB}$

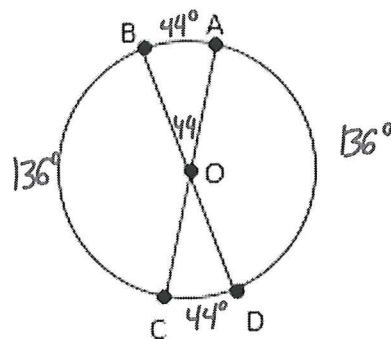
$360 - 44$
 316°

10. $m\widehat{BCD}$

$136 + 44$
 180°

11. $m\widehat{AD}$

136°



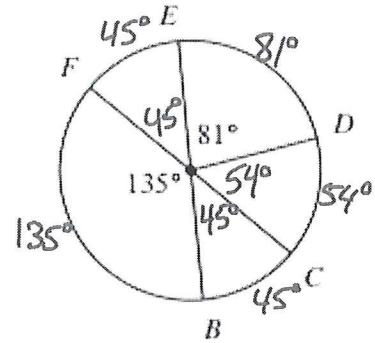
Find the measure of each of the following in the circle to the right.

12. $m\widehat{FD}$
 126°

13. $m\widehat{FCD}$
 234°

14. $m\widehat{FBC}$
 180°

15. $m\widehat{BFC}$
 315°



Use the figure at the right to answer 16 and 17.

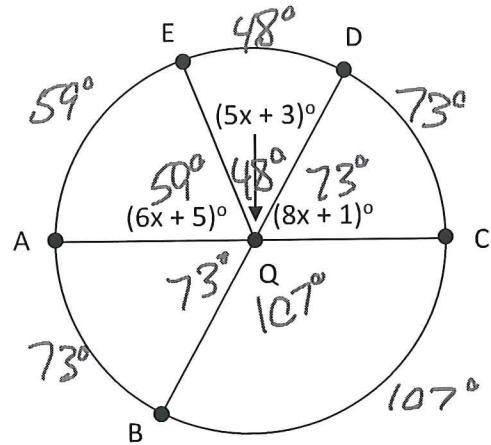
16. Find the value of x.

$$6x + 5 + 5x + 3 + 8x + 1 = 180$$

$$19x + 9 = 180$$

$$19x = 171$$

$$\boxed{x = 9}$$



17. a. Find the $m\widehat{DE}$

48°

b. Find the $m\widehat{AB}$

73°

c. Find the $m\widehat{DCB}$

180°

d. Find the $m\widehat{BDC}$

73°