Geometry B **Name _____**
9.1 Circles and Circumference **Hour _____ Date _____**

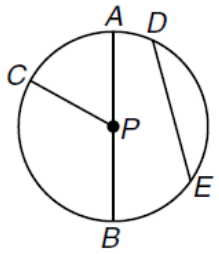
ASSIGNMENT

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).

1. A segment whose endpoints are on the circle
2. The set of all points in a plane that are the same distance from a given point.
3. The distance between the center of a circle and any point on the circle.
4. A chord that passes through the center of a circle
5. A segment whose endpoints are on the center and any point on the circle.
6. A chord made up of two collinear radii.
7. The distance around the circle.

a. radius
b. diameter
c. chord
d. circle
e. circumference

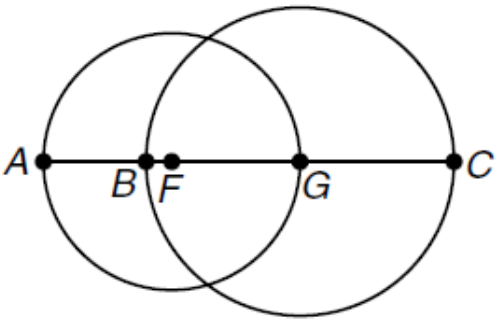
For #8-12, use the figure at the right.



8. Name the circle.
9. Name a diameter.
10. Name a chord.
11. Name a radius that is ***not*** part of the diameter.
12. Suppose $CP = 6$ cm. Find AB.

The diameter of circle F is 5 inches and the diameter of circle G is 6 inches.

13. Find BF.
14. Find AB.

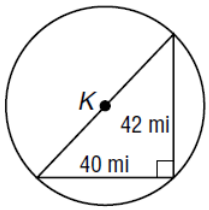


15. A circle has a radius of 20 inches. Find the circumference of the circle.

16. A circle has a circumference of 120 mm. Find the diameter of the circle.

17. A circle has a circumference of 45 ft. Find the radius of the circle.

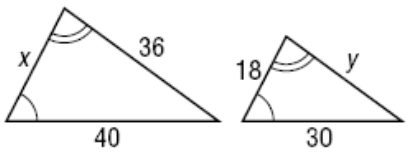
18. Find the exact circumference of the circle below.



Review

19. Edward Hopper's oil on canvas painting *Nighthawks* has a length of 60 inches and a width of 30 inches. A print of the original has a length of 2.5 inches. What is the width of the print?

20. The triangles below are similar. Find the values of x and y.



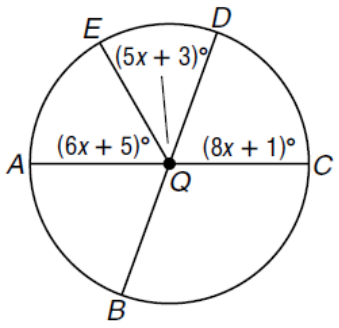
x = _____ y = _____

Geometry B **Name** _____
9.2 Angles and Arcs **Hour** _____ **Date** _____

ASSIGNMENT

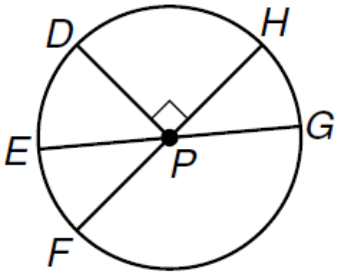
In circle Q, *AC* and *DB* are diameters. Find each measure.

1. $m\angle AQE$
2. $m\angle DQE$
3. $m\angle CQD$
4. $m\angle BQC$
5. $m\angle CQE$
6. $m\angle AQD$



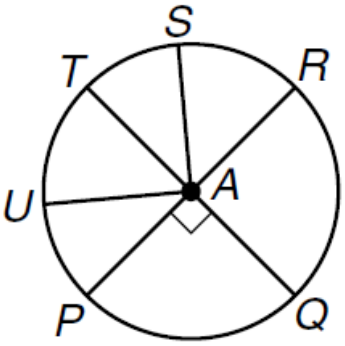
In circle P, $m\angle GPH$ = 38°. Find each measure.

7. $m\overset{\frown}{EF}$
8. $m\overset{\frown}{DE}$
9. $m\overset{\frown}{FG}$
10. $m\overset{\frown}{DG}$
11. $m\overset{\frown}{DFG}$
12. $m\overset{\frown}{DGE}$
13. $m\overset{\frown}{EHG}$
14. $m\overset{\frown}{EFH}$



In circle A, $m\angle PAU$ = 40° and $m\angle TAS$ = 35°. *PR* and *TQ* are diameters. Find the length of each arc if the diameter of the circle is 20 cm.

15. $\overset{\frown}{UP}$
16. $\overset{\frown}{UT}$
17. $\overset{\frown}{TR}$
18. $\overset{\frown}{PQR}$
19. $\overset{\frown}{PRS}$
20. $\overset{\frown}{TQU}$

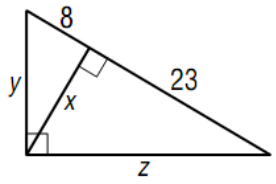


Review

21. The ratio of the angle measures in a triangle is 7:13:16. What are the measures of each angle?

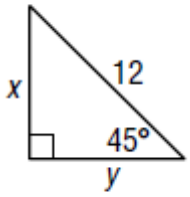
22. A lighthouse casts a 130-foot shadow. A nearby lamppost that measures 5.75 feet casts an 7.5-foot shadow. **Make a sketch of the situation.** Write a proportion that could be used to determine the height of the lighthouse. Then solve the proportion.

23. Find the values of *x*, *y* and *z*.

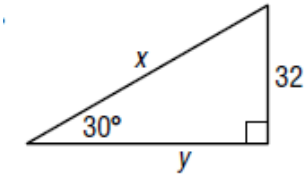


Find the values of *x* and *y*. Write your answer in simplest radical (square root) form.

24.



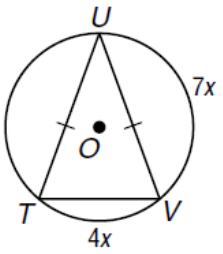
25.



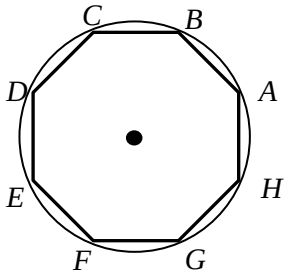
Geometry B **Name** _____
9.3 Arcs and Chords **Hour** _____ **Date** _____

ASSIGNMENT

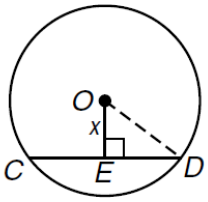
1. Find $m\overset{\frown}{TU}$.



2. Find $m\overset{\frown}{AC}$ (assume the polygon is regular)



3. In circle O, $OD = 15$ and $CD = 24$. Find x.



In circle E, $HI = JK$, $HP = 7.5$ and $m\overset{\frown}{HQ} = 48$. Find each measure.

4. $m\overset{\frown}{HI}$

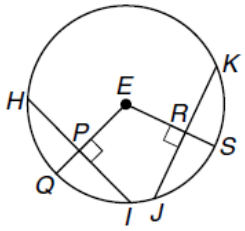
5. $m\overset{\frown}{QI}$

6. $m\overset{\frown}{JK}$

7. HI

8. PI

9. JK



If circle P has a diameter of 40 inches and $AC = FD = 24$ inches, find each measure.

10. PA

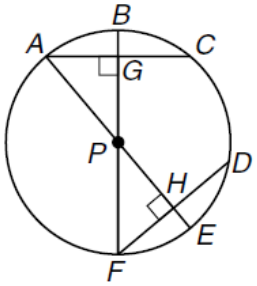
11. AG

12. PE

13. PH

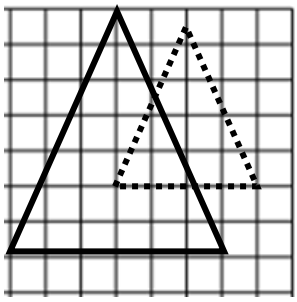
14. HE

15. FG



Review:

16. Determine whether the dilation shown is an enlargement, a reduction, or a congruence transformation. Then determine the scale factor. The dashed figure is the dilation image.

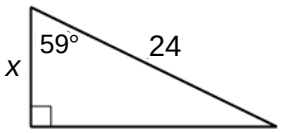


Type of dilation: _____

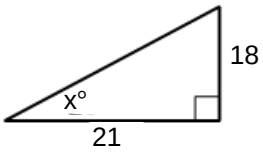
Scale factor: _____

Find the value of *x*. Round to the nearest tenth.

17.



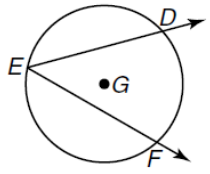
18.



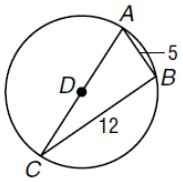
Geometry B **Name** _____
9.4 Inscribed Angles **Hour** _____ **Date** _____

ASSIGNMENT

1. If $m\angle DEF = 52^\circ$, find $m\overset{\frown}{DF}$.



2. Find AD



3. If $m\angle 1 = 5x - 2$ and $m\angle 2 = 2x + 8$,

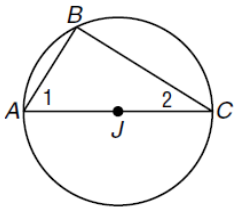
   a. find x.

   b. find $m\angle 1$

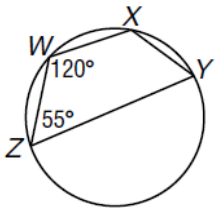
   c. find $m\angle 2$

   d. find $m\overset{\frown}{AB}$

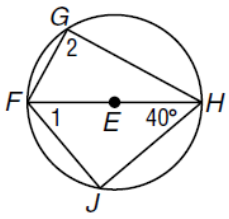
   e. find $m\overset{\frown}{BC}$



4. Find $m\angle X$ and $m\angle Y$ in the figure below.



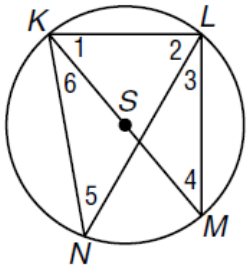
5. Find $m\angle 1$ and $m\angle 2$ in the figure below.



In circle S, $m\overset{\frown}{KL} = 80$, $m\overset{\frown}{LM} = 100$ and $m\overset{\frown}{MN} = 60$. Find the measure of each angle.

6. $m\angle 1$

7. $m\angle 2$



8. $m\angle 3$

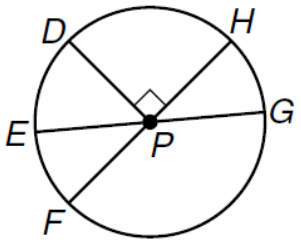
9. $m\angle 4$

10. $m\angle 5$

11. $m\angle 6$

Review:

In circle P, $m\angle EPD = 41°$ and $FP = 12$ cm.



12. Find $m\overset{\frown}{EH}$

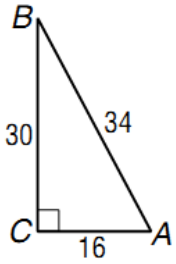
13. Find $m\overset{\frown}{DGE}$

14. Find the length of $\overset{\frown}{EH}$.

15. Find the length of $\overset{\frown}{DGE}$

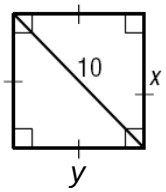
16. Find cos *B*.

A. $\frac{8}{15}$ B. $\frac{15}{8}$ C. $\frac{8}{17}$ D. $\frac{15}{17}$

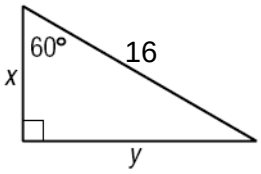


17. Find exact values of *x* and *y* in the triangles below.

a.



b.



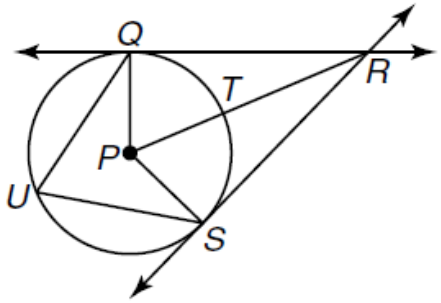
Geometry B **Name** _____
9.5 Tangents **Hour** _____ **Date** _____

ASSIGNMENT

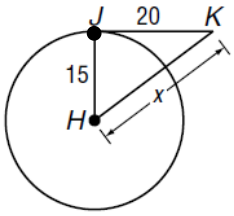
For #1-6, use circle *P* at the right. Match each term with an example from the circle. Some figures in the second column may be used more than once or not at all.

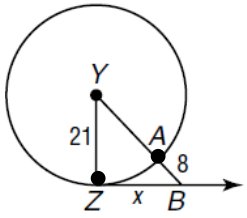
1. a line that is tangent to circle *P*
2. a chord of the circle
3. a radius of the circle
4. a minor arc
5. a central angle
6. an inscribed angle

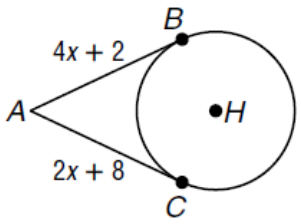
A. $\overline{PQ}$
B. $\overleftrightarrow{PR}$
C. $\angle TPS$
D. $\overline{SU}$
E. $\overset{\frown}{TQS}$
F. $\overset{\frown}{SU}$
G. $\overleftrightarrow{QR}$
H. $\angle PQU$



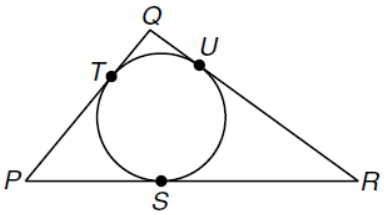
In #7-9, find *x*. Assume that segments that appear to be tangent are tangent.

7.


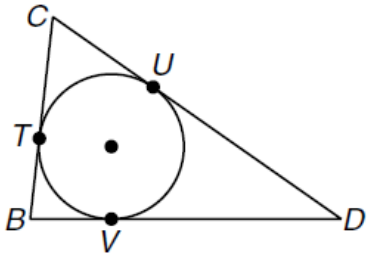
8.


9.


10. Find the perimeter of ΔQPR if $QT = 4$, $PT = 9$ and $SR = 13$.



11. Find the perimeter of ΔCBD if $CU = 18$, $CD = 52$ and $TB = 12$.

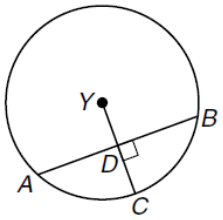


Review:

The radius of circle Y is 20, *AB* = 32 and *m* $\overset{\frown}{AB}$ = 106. Find each measure.

12. *m* $\overset{\frown}{AC}$

13. *m* $\overset{\frown}{BC}$



14. *AD*

15. *BD*

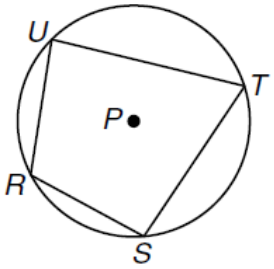
16. *YD*

17. *DC*

Quadrilateral *RSTU* is inscribed in circle *P* such that *m* $\overset{\frown}{STU}$ = 220 and *m*∠*S* = 95. Find each measure.

18. *m*∠*R*

19. *m*∠*T*



20. *m*∠*U*

21. *m* $\overset{\frown}{SRU}$

22. *m* $\overset{\frown}{RUT}$

23. *m* $\overset{\frown}{RST}$

24. A ladder leaning against a building makes an angle of 55° with the ground. If the ladder is 30 feet long, how far up the building will the ladder reach? Round to the nearest tenth.

Geometry B **Name _____**
9.6 Equations of Circles **Hour _____ Date _____**

ASSIGNMENT

$$(x - h)^2 + (y - k)^2 = r^2$$

Write an equation for each circle.

1. center at (2, -4), $d = 2$

2. center at the origin, $r = 8$

3. center at (-6, 0), radius = 7

For each of the following equations, identify the specified information.

4. $(x + 2)^2 + (y - 1)^2 = 196$

center: _____ diameter: _____

5. $x^2 + (y + 4)^2 = 900$

center: _____ radius: _____

6. $(x + 19)^2 + (y + 14)^2 = 121$

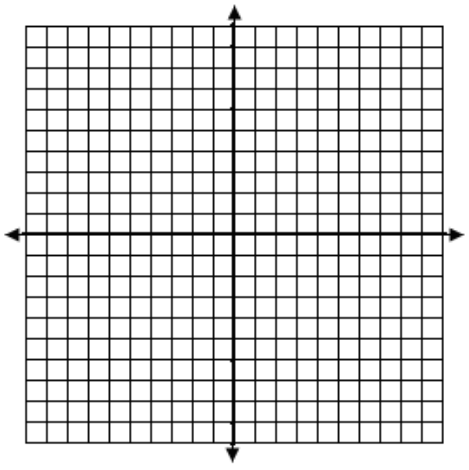
center: _____ diameter: _____

7. Find the circumference of the circle given by the equation $(x - 50)^2 + (y + 76)^2 = 1600$.
Round to the nearest <u>hundredth.</u>

For 8 and 9, find the center and radius of each circle. Then graph the circle.

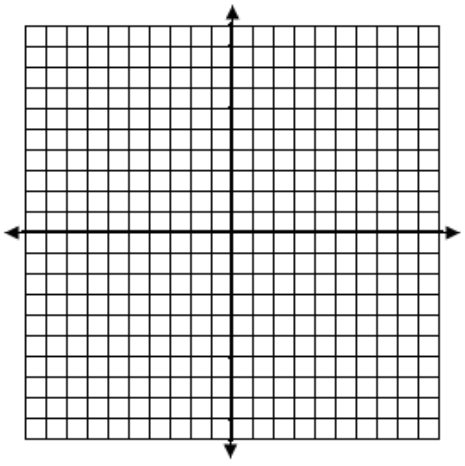
8. $(x - 2)^2 + (y + 1)^2 = 64$

center: _____ radius: _____

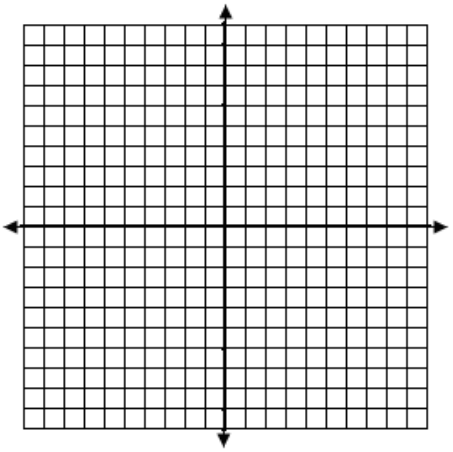


9. $x^2 + (y - 6)^2 = 9$

center: _____ radius: _____

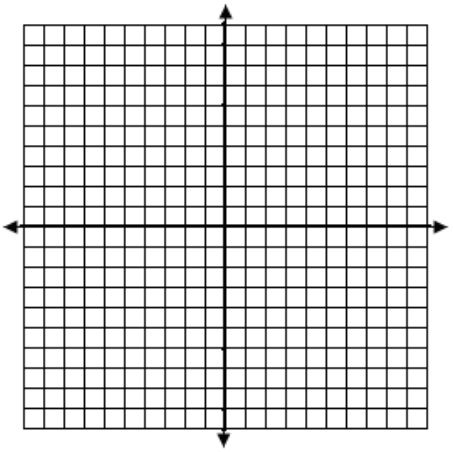


10. Write an equation of the circle whose diameter has an endpoint at (2, 2) and a center at (5, 0). You may use the graph below to help you visualize the problem.



Equation: _____

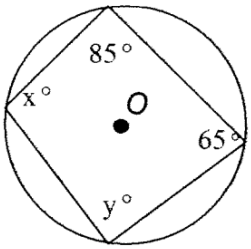
11. Write an equation of the circle whose diameter has endpoints at (-3, -4) and (-1, 2). You may use the graph below to help you visualize the problem.



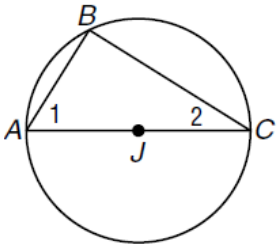
Equation: _____

Review:

12. Find the value of *x* and *y* in the figure below.



13. In circle *J*, $m\angle 1 = 62$.



a. find $m\angle ABC$

b. find $m\angle 2$

c. find $m\overset{\frown}{AB}$

d. find $m\overset{\frown}{BC}$