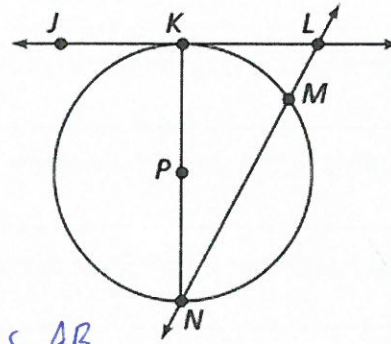


Unit 10 Circles Review

Tell whether the line, ray, or segment is best described as a *radius*, *chord*, *diameter*, *secant*, or *tangent* of $\odot P$.

- 1. \overline{PK} radius
- 2. \overline{NM} chord
- 3. \overline{JL} tangent
- 4. \overline{KN} diameter
- 5. \overline{NL} secant
- 6. \overline{PN} radius



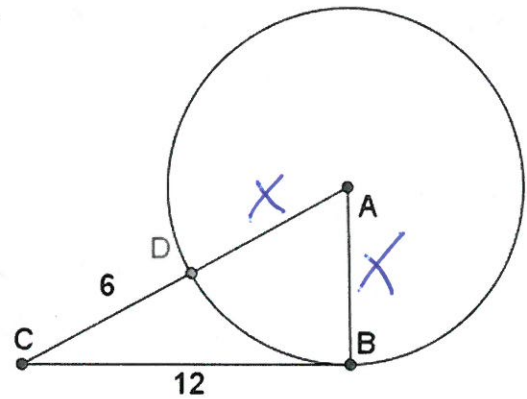
7. $2c^2 + 9c + 6$ $9c + 14$

$2c^2 + 9c + 6 = 9c + 14$
 $2c^2 = 8$
 $c^2 = 4$
 $C = 2$

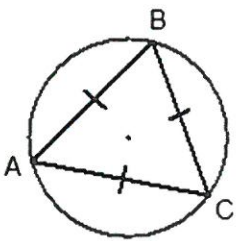
8. $48^2 + 20^2 = 52^2$
 $2704 = 2704$
 it is right!

9. Given line CB is tangent and CA is a line, find the radius of circle A.

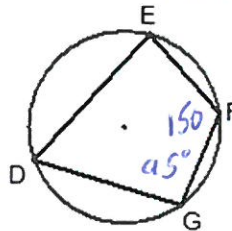
$X^2 + 144 = X^2 + 12X + 36$
 $108 = 12X$
 $X = 9$



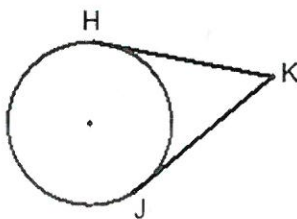
10. a. measure of $\angle ABC = 60^\circ$



b. If $\angle F = 150^\circ$ and $\angle G = 95^\circ$, find the measure of: $\angle D = 30^\circ$ and $\angle E = 75^\circ$

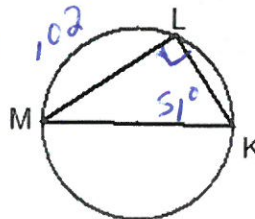


c. If HK and JK are tangents and $HK = 6x + 8$ and $JK = 10(x - 2)$, then $x = 7$



$6x + 8 = 10x - 20$
 $28 = 4x$
 $7 = x$

d. MK is a diameter and the measure of $\widehat{ML} = 102^\circ$ then $\angle M = 39^\circ$

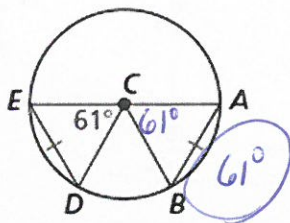


Identify each statement as true or false (write out the whole word). If it is false, correct the statement.

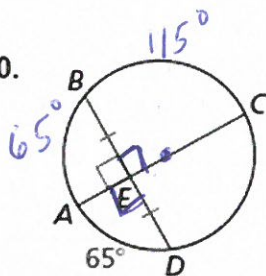
11. The arc measure is equal to the measure of its central angle. True;
-
12. A ~~chord~~ ^{radius} is a segment connecting the center of a circle to any point on the circle False;
-
13. Two congruent chords in the same circle create equal arcs. True;
-
14. Two circles are ~~not~~ congruent if they have the same radius. False;
-
15. If a circle has a circumference of 10π centimeters, then it has a radius of 5. True;
-
16. Tangent segments to a circle from a point outside the circle are congruent. True;
-
17. Any angle inscribed in a semicircle has a measure of ~~60~~ ⁹⁰° False;
-
18. The measure of a central angle is ~~twice~~ the measure of the arc it intercepts. False;
-

Find the measure of \widehat{AB} .

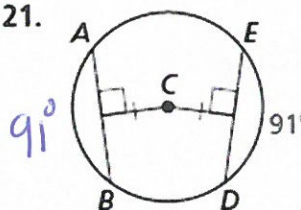
19.



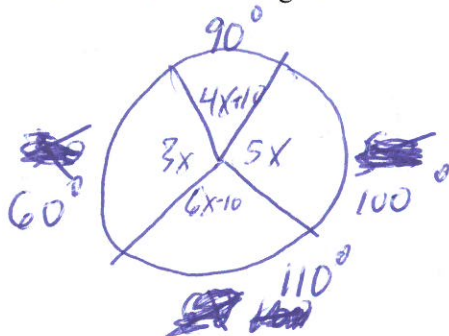
20.



21.



20. Grandma Betty has divided a circular apple pie into four slices by cutting along four radii. The central angles of the four slices are $3x$, $6x - 10$, $4x + 10$ and $5x$. Draw a picture and label it with the given information. What exactly are the numerical measures of the central angles?

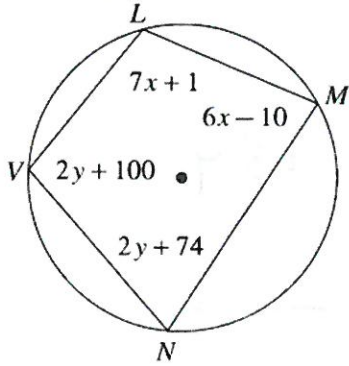


$$3x + 4x + 10 + 5x + 6x - 10 = 180 \quad 360$$

$$\frac{18x}{18} = \frac{180}{18} \quad 360$$

$$x = 20$$

21. Find x and y.



$$7x+1+2y+74=180$$

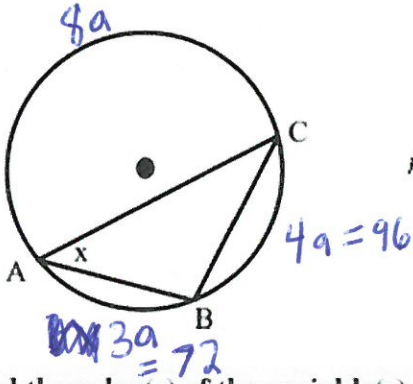
$$7x+2y=105$$

$$6x-10+2y+100=180$$

$$6x+2y=90$$

$$x=15$$

22.



Given circle with center indicated and

and

$$m\widehat{AB} : m\widehat{BC} : m\widehat{AC} = 3 : 4 : 8$$

$$3a+4a+8a=360$$

$$\frac{15a}{15} = \frac{360}{15}$$

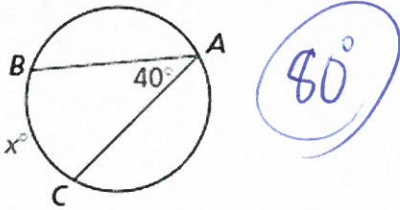
$$a=24$$

$$x = \frac{96}{2} = 48$$

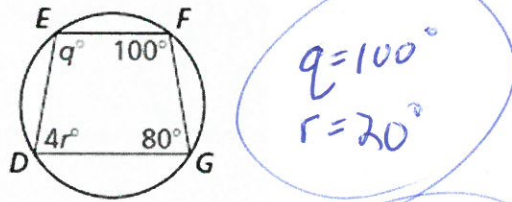
Find x.

Find the value(s) of the variable(s).

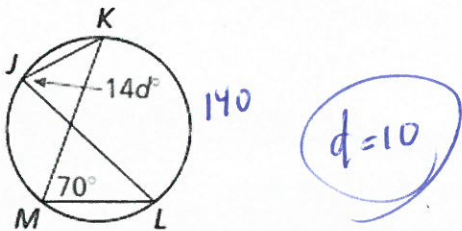
23.



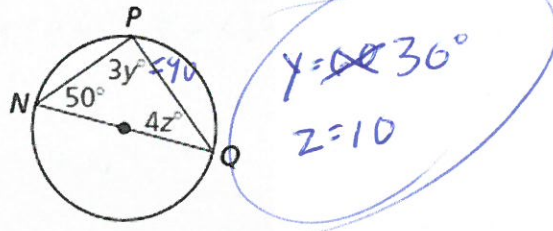
24.



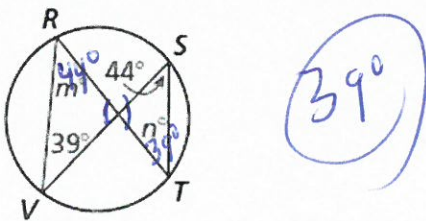
25.



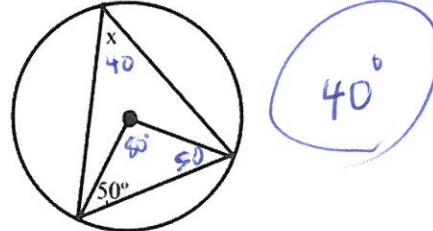
26.



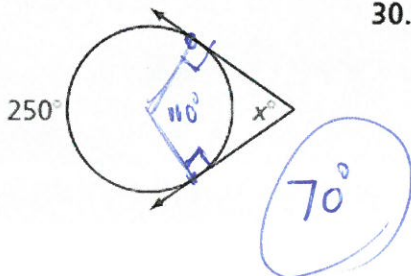
27.



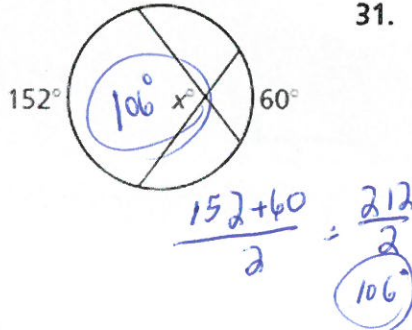
28.



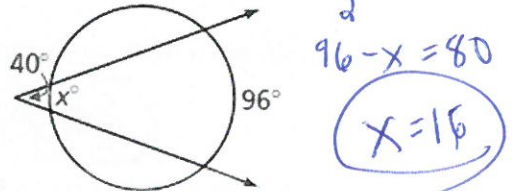
29.



30.



31.

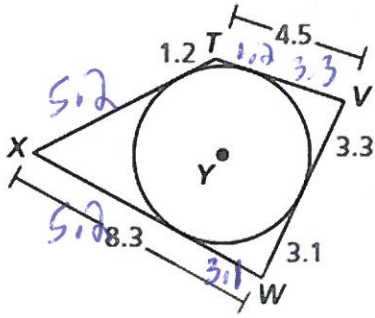


$$\frac{96-x}{2} = 40$$

$$96-x=80$$

$$x=16$$

32. **USING STRUCTURE** Each side of quadrilateral $TUVW$ is tangent to $\odot Y$. Find the perimeter of the quadrilateral.

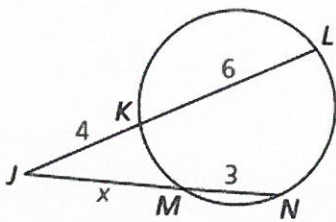


$$P = 4.5 + 6.4 + 8.3 + 8.4$$

$$\boxed{27.6}$$

Find the value of x .

33.

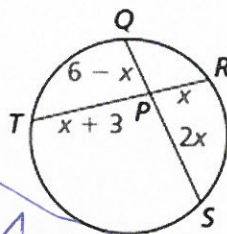


$$4(10) = x(x+3)$$

$$40 = x^2 + 3x$$

$$0 = x^2 + 3x - 40$$

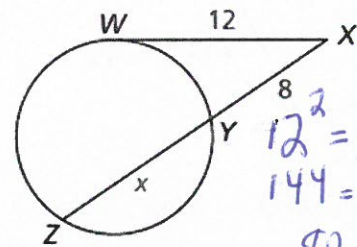
34.



$$(x+3)(x-5)$$

$$\boxed{x=5}$$

35.



$$12^2 = 8(8+x)$$

$$144 = 64 + 8x$$

$$80 = 8x$$

$$\boxed{10 = x}$$

36. Given each equation, sketch the circle indicating the center and radius.

$$x^2 + y^2 = 49 \quad C: (0,0) \quad r=7$$

$$x^2 + y^2 - 6x = 7 \rightarrow x^2 + y^2 - 6x + 9 = 7 + 9 \rightarrow x^2 + (y-3)^2 = 16 \quad C: (0,3) \quad r=4$$

$$x^2 + y^2 - 8x - 2y = -16$$

$$x^2 - 8x + 16 + y^2 - 2y + 1 = -16 + 16 + 1$$

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

$$C: (4,1) \quad r=1$$

37. Write the equation of each circle given the information.

The center is $(0, 0)$, and a point on the circle is $(0, 6)$.

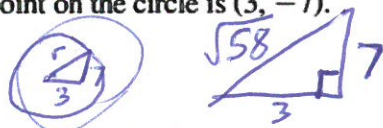
$$x^2 + y^2 = 6^2$$

The center is $(1, 2)$, and a point on the circle is $(4, 2)$.

$$(x-1)^2 + (y-2)^2 = 9$$

The center is $(0, 0)$, and a point on the circle is $(3, -7)$.

$$(x-3)^2 + (y+7)^2 = 58$$



38. Given an equation of a circle, describe how you would test if a point was on a circle. If it is not, how do you know if it is inside or outside the circle?

plug it in for x, y .
 if $(x-h)^2 + (y-k)^2 = r$ ON
 $> r$ outside $< r$ inside.