

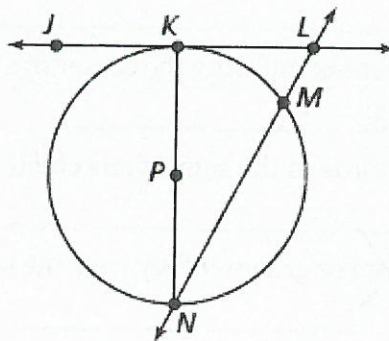
Name: _____

AK

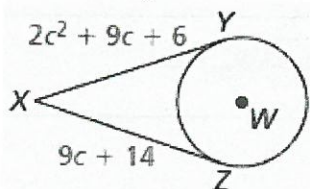
Unit 10 Circles Review

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. Solve for c given XY and XZ are tangent.

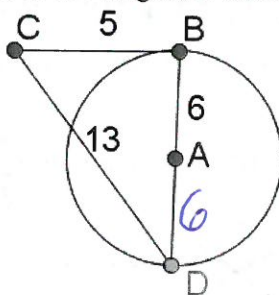


$$2c^2 + 9c + 6 = 9c + 14$$

$$2c^2 = 8$$

$$c = 2$$

8. Is CB tangent to circle A ?



$$5^2 + 12^2 = 13^2$$

Yes.

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

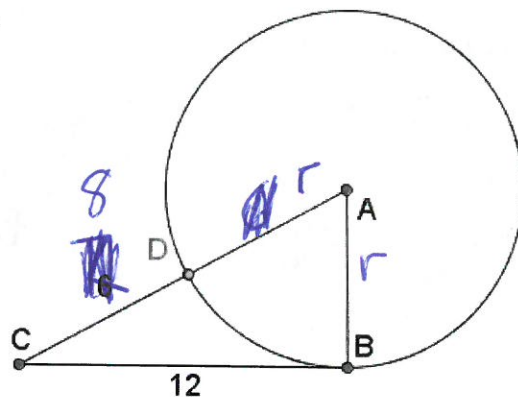
$$r^2 + 12^2 = (r + 8)^2$$

$$r^2 + 144 = r^2 + 16r + 64$$

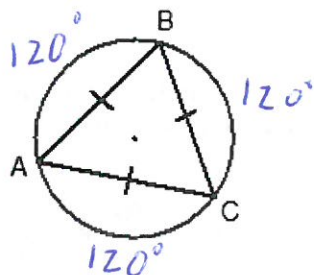
$$80 = 16r$$

$$\frac{80}{16} = \frac{16r}{16}$$

$$5 = r$$

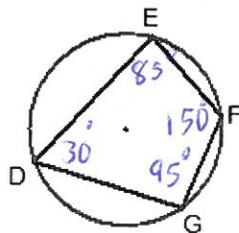


10. a. measure of $\widehat{ABC} = 240^\circ$



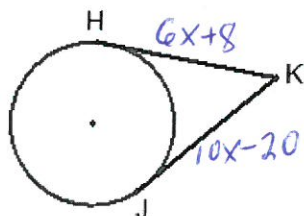
b. If $\angle F = 150^\circ$ and $\angle G = 95^\circ$, find the measure

of: $\angle D = 30^\circ$ and $\angle E = 85^\circ$



c. If HK and JK are tangents and $HK = 6x + 8$

and $JK = 10(x - 2)$, then $x = 7$



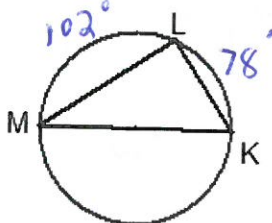
$$10x - 20 = 6x + 8$$

$$4x = 28$$

$$x = 7$$

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 is a segment connecting the center of a circle to any point on the circle radius;

13. Two congruent chords in the same circle create equal arcs. Truth;

14. Two circles are ~~not~~ congruent if they have the same radius. _____;

15. If a circle has a circumference of 10π centimeters, then it has a radius of 5. True;

$$D\pi \rightarrow D=10 \rightarrow r=5$$

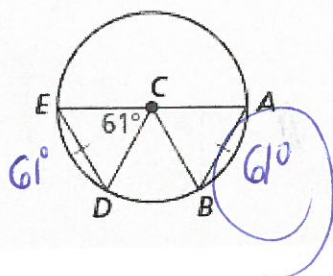
16. Tangent segments to a circle from a point outside the circle are congruent. So True;

17. Any angle inscribed in a semicircle has a measure of ~~60~~⁹⁰° _____;

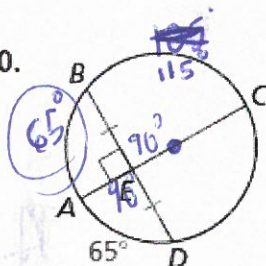
18. The measure of a central angle is ~~twice~~ the measure of the arc it intercepts. _____;

Find the measure of \widehat{AB} .

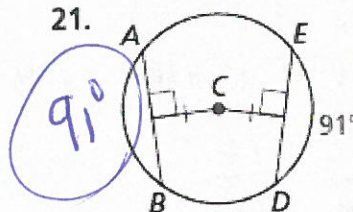
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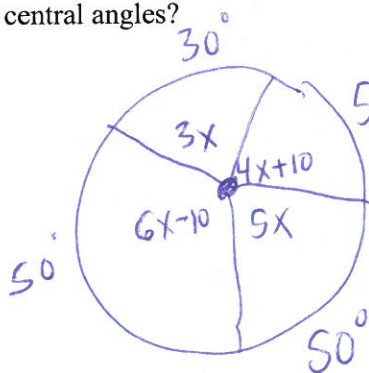
20.



21.



22. 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?



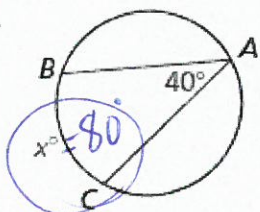
$$3x + 4x + 10 + 6x - 10 + 5x = 180$$

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

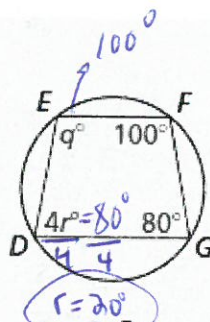
$$x = 10$$

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

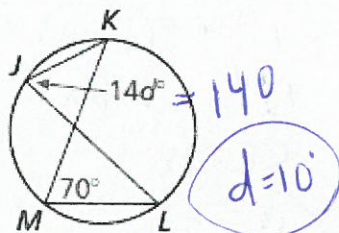
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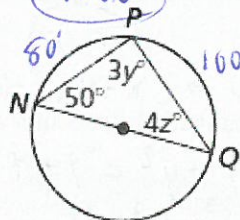
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25.

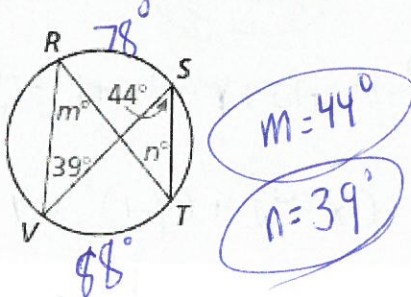


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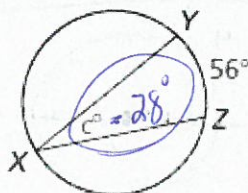


$$\begin{aligned} 3y &= 90^\circ \\ y &= 30^\circ \\ 4z &= 80^\circ \\ z &= 20^\circ \end{aligned}$$

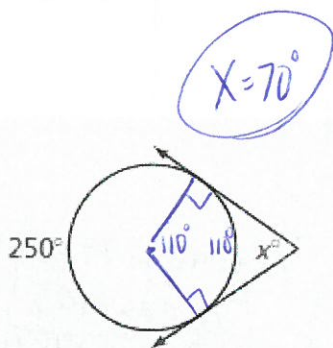
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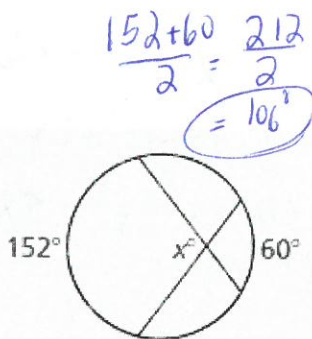
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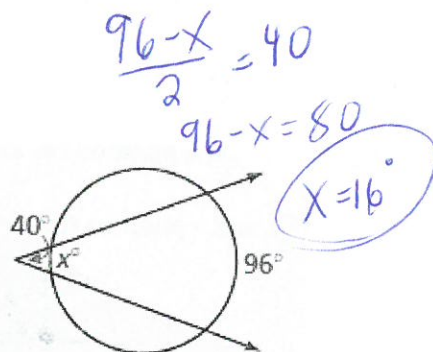
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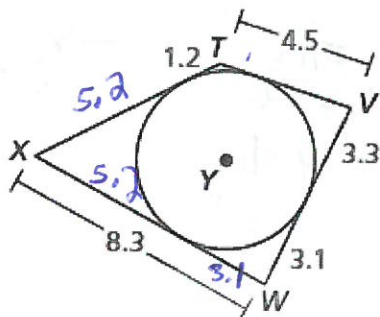
30.



31.



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

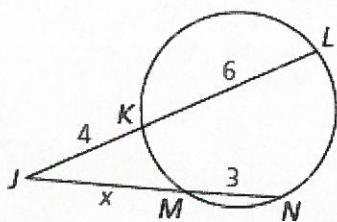


$$4.5 + 3.3 + 3.1 + 3.1 + 5.2 + 5.2 + 1.2$$

$$25.6$$

Find the value of x .

33.

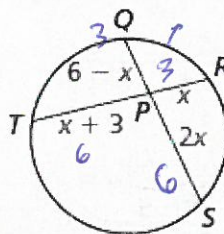


$$4(10) = x(x+3)$$

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

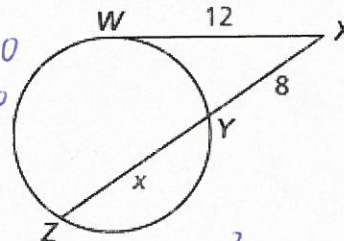
$$0 = x^2 + 3x - 40 \rightarrow (x+8)(x-5) = 0$$

34.



$$x = 5$$

35.



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

$$144 = 64 + 8x$$

$$80 = 8x$$

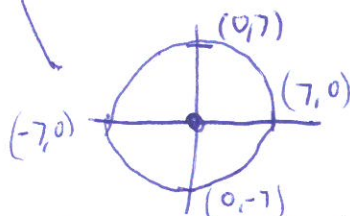
$$10 = x$$

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

$$x^2 + y^2 = 49$$

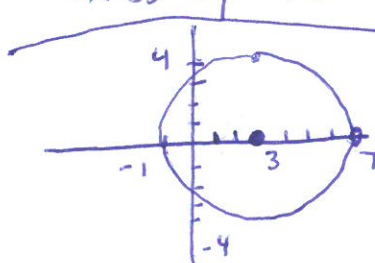
$$x^2 + y^2 - 6x = 7$$

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



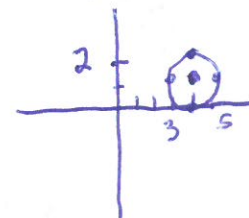
$$x^2 - 6x + 9 + y^2 = 7 + 9$$

$$(x-3)^2 + y^2 = 16$$



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

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



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

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

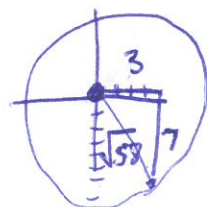
$$x^2 + y^2 = 36$$

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

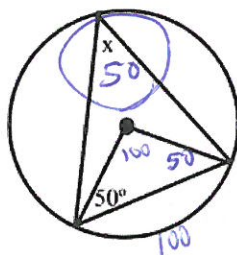
$$(x-1)^2 + (y-2)^2 = 9$$

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

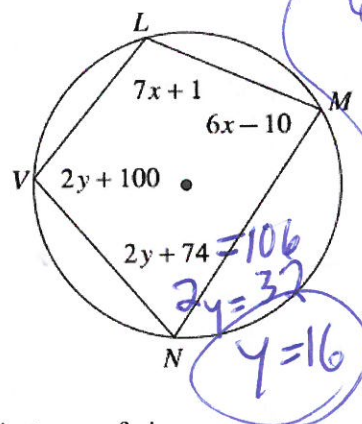
$$x^2 + y^2 = 58$$



38. Find x .



39. Find x and y .



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

$$7x+2y=105$$

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

$$6x+2y=90$$

$$-7x-2y=-105$$

$$-x=-15$$

$$x=15$$

40. Find the circumference of a circle with diameter 13 in in terms of π .

$$13\pi$$

41. If a circle has a circumference of 20π , what is the radius?

$$r = 10$$