Geometry Name KEY

Circles Quiz Review Date _____ Per _____

h K

1. Write the equation of a circle with a center at the point (-1, 6) and passes through the point (2, -4).

$r = \sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$

$= \sqrt{(2+1)^2+(-4-6)^2}$

$= \sqrt{(3)^2+(-10)^2} = \sqrt{9+100} = \sqrt{109}$

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

$(x+1)^2+(y-6)^2=109$

2. Does a circle with the center at (4, 1) and a radius of 8 pass through the point (-3, -3)? Justify your answer.

$(x-4)^2+(y-1)^2=64$

$(-3-4)^2+(-3-1)^2$

$(-7)^2+(-4)^2$

$49+16=64$

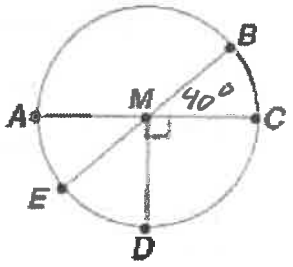
$65 \neq 64$

Point (-3, -3) is not on the circle

x y

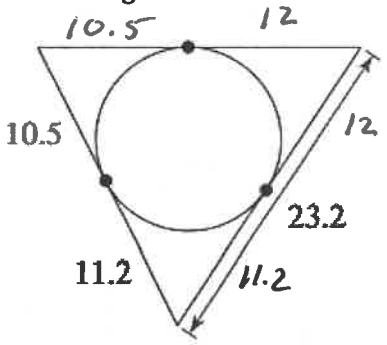
3. In circle M $m\angle BMC = 40$ *and* $m\angle CMD = 90$ *and* $\overline{AC}$ *and* $\overline{BE}$ *are diameters. Find the measure* of the following.

6. $\overset{\frown}{AB} = 140$
7. $\overset{\frown}{ECA} = 320$
8. $\overset{\frown}{BAE} = 180$
9. $\overset{\frown}{BDE} = 180$
10. $\overset{\frown}{DCE} = 310$
11. $\overset{\frown}{CBD} = 270$
12. $\overset{\frown}{DAB} = 230$
13. $\overset{\frown}{AE} = 40$
14. $\overset{\frown}{BC} = 40$
15. $\overset{\frown}{BD} = 130$
16. $\overset{\frown}{BDC} = 320$
17. $\overset{\frown}{AD} = 90^\circ$



4. Find the perimeter of the triangle. Segments that appear to be tangent are tangent.

Tangents from the same external pt are $\cong$.



$P = 22.5 + 21.7 + 23.2$

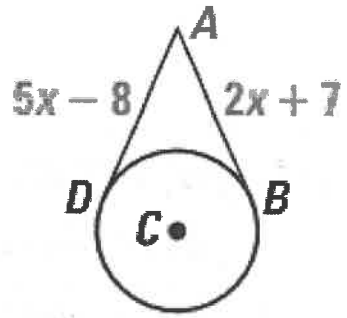
$= 67.4$

5. **Finding Segment Lengths** $\overline{AB}$ **and** $\overline{AD}$ **are tangent to** $\odot C$**. Find the value of** x**.**

$5x-8 = 2x+7$

$3x = 15$

$x = 5$



6. **Finding the Radius of a Circle** $\overline{AB}$ **is tangent to** $\odot C$**. Find the value of** r**.**

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

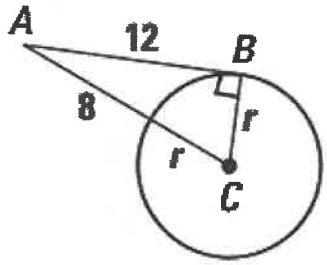
$r^2 + 144 = (r+8)(r+8)$

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

$144 = 16r + 64$

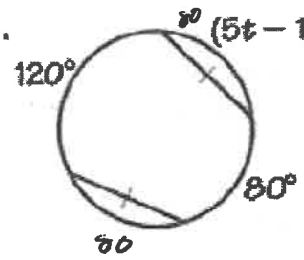
$80 = 16r$

$r = 5$



Find the value of each variable.

7.

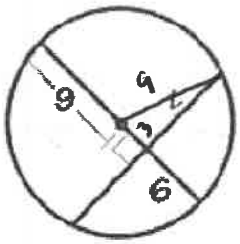


$5t - 10 = 80$

$5t = 90$

$t = 18$

8.



$3^2 + t^2 = 9^2$

$9 + t^2 = 81$

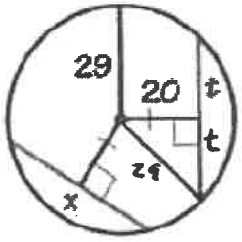
$t^2 = 72$

$t = \sqrt{72}$

$= 6\sqrt{2}$

≈ 8.49

9.



$20^2 + t^2 = 29^2$

$400 + t^2 = 841$

$t^2 = 641$

≈ 25.32

$x = 2t$

$2(25.32) = 50.64$

10.

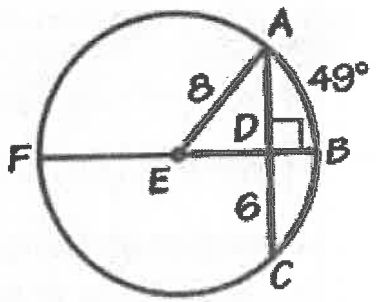
Find each length or measure.

1. $m\overset{\frown}{BC} = 98$

2. $AD = 6$

3. $m\overset{\frown}{CFA} = 262$

4. $BF = 16$



5. ED = 5.29

$8^2 = 6^2 + ED^2$

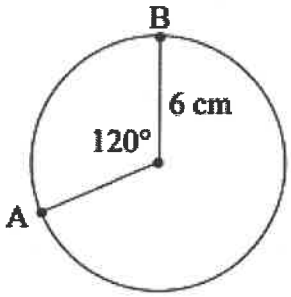
$ED = \sqrt{28}$

6. FD = 8 + ED

8 + 5.29

13.29

11. 1. Find the length of arc AB.



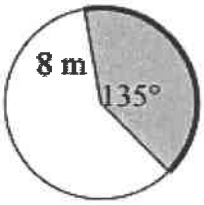
$S = \frac{n}{360} \cdot 2\pi r$

$\frac{120}{360} \cdot 2\pi(6)$

$\frac{1}{3} \cdot 12\pi$

4π cm

12. Find the area of the sector.



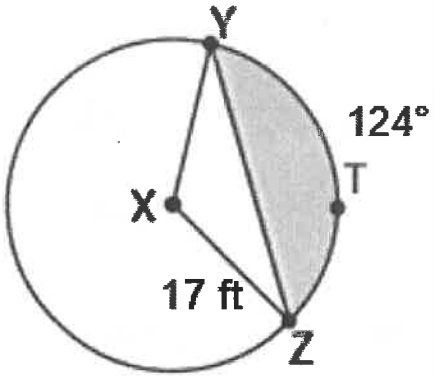
$A = \frac{n}{360} \cdot \pi r^2$

$\frac{135}{360} \cdot \pi(8)^2$

$\frac{3}{8} \cdot 64\pi$

24π m^2

13. Find the area of the segment.



$A_{sector} - A_{\Delta}$

$\frac{n}{360} \cdot \pi r^2 - \left(\frac{1}{2} ab \sin\theta\right)$

$\frac{124}{360} \cdot \pi(17)^2 - \left(\frac{1}{2}(17)(17)\sin 124\right)$

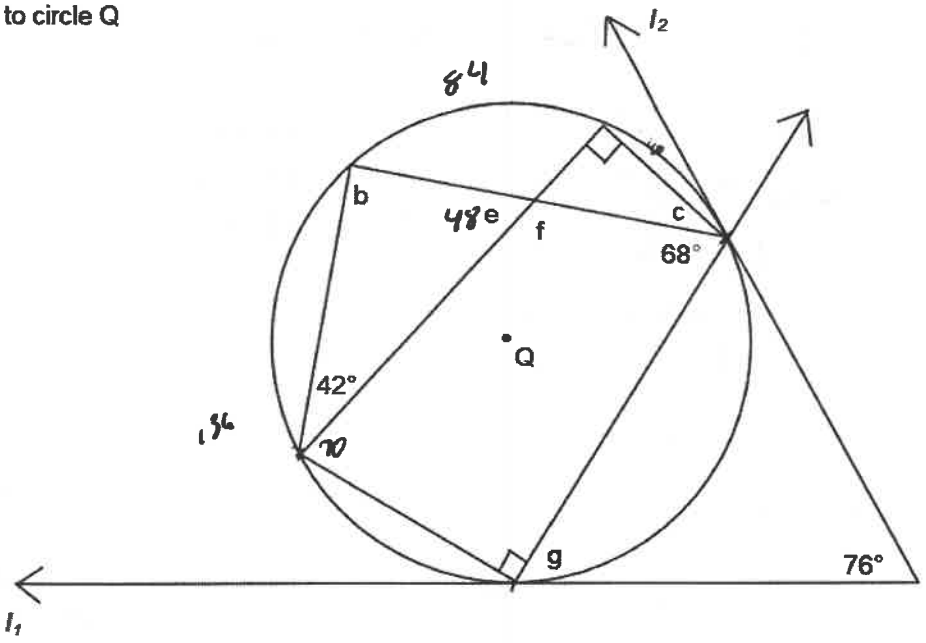
$\frac{31}{90} \cdot 289\pi$

$\frac{8959\pi}{90} - 119.7959$

192.93 ft^2

1. Find the missing angle measures.

l_1 and l_2 are tangents to circle Q



b = 90° c = 42 e = 48 f = 132 g = 52

2. In the figure, $\overrightarrow{BT}$ and $\overrightarrow{BP}$ are tangents to the circle. Find the values of x, y, and z.

$x = \frac{280-80}{2}$

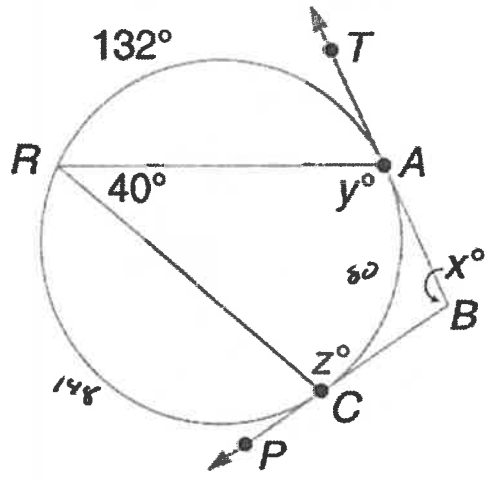
$= 100$

$y = \frac{80+148}{2}$

$= 114$

$z = \frac{132+80}{2}$

$= 106$



3. In the figure, $\overrightarrow{AC}$ and $\overrightarrow{AS}$ are tangent to the circle. Find the values of x, y, and z.

$m\angle A = \frac{232-126}{2}$

$= 52^\circ$

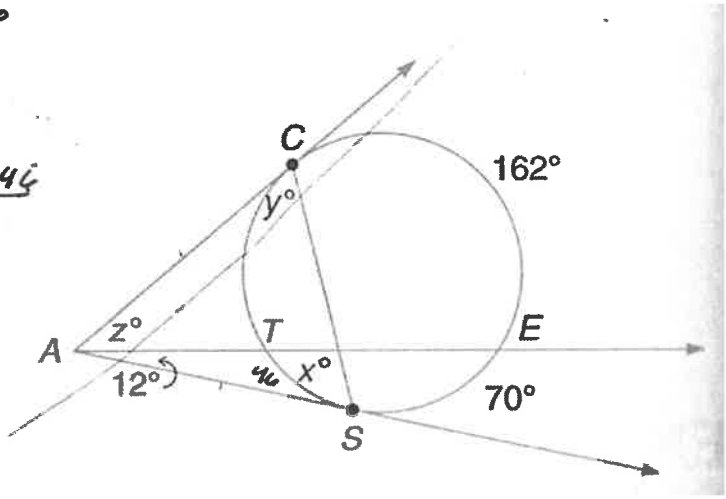
$z = 52 - 12$

$= 40^\circ$

$y = 64^\circ$

$x = \frac{162+46}{2}$

$= 104^\circ$

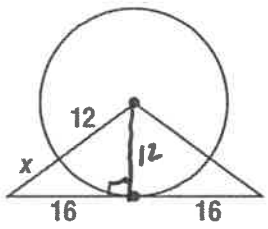


$12 = \frac{70-TS}{2}$

$24 = 70 - TS$

$TS = 46$

Find the value of x.



$12^2 + 16^2 = (x+12)^2$

$144 + 256 = x^2 + 24x + 144$

$x^2 + 24x - 256 = 0$

$(x+32)(x-8) = 0$

$x = -32$ $x = 8$

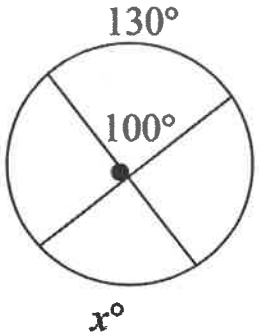
Doesn't work

7. Find the value of x

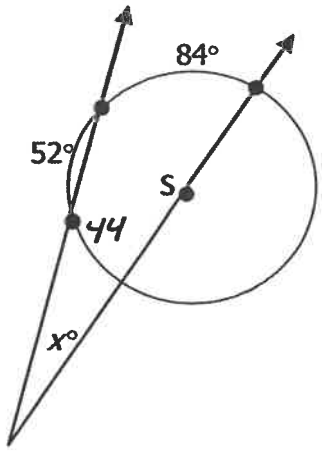
$100 = \frac{x+130}{2}$

$200 = x + 130$

$70 = x$



27) Find the value of x.

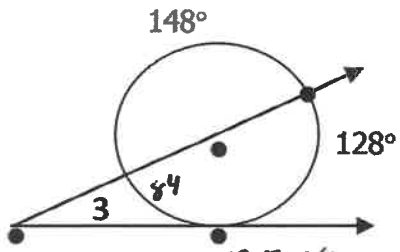


$x = \frac{84-44}{2}$

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

$x = 20$

) Find $m\angle 3$



$m\angle 3 = \frac{128-84}{2}$

$m\angle 3 = \frac{44}{2} = 22^\circ$