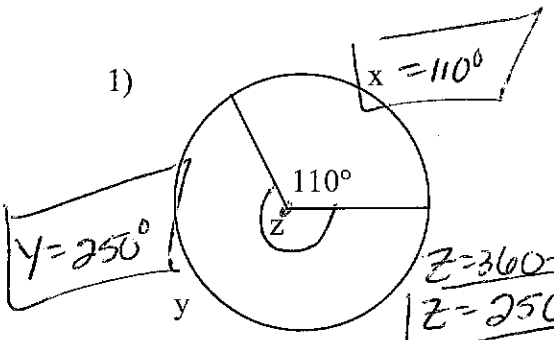
key Ch. 9 Rev.

Central Angles:

Find the value of the variable(s). Assume each segment is a radius.

1)



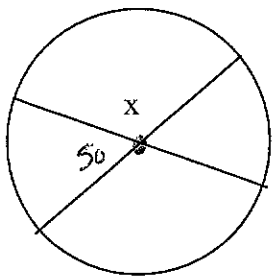
x = 110°

Y = 250°

Z = 360 - 116

Z = 250°

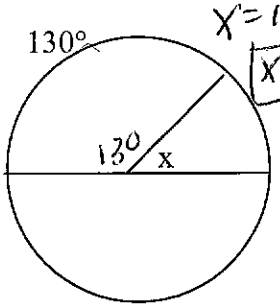
2)



X = 180 - 50

X = 130°

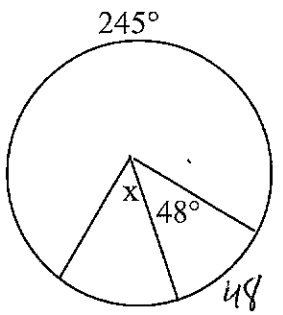
3)



X = 180 - 130

X = 50°

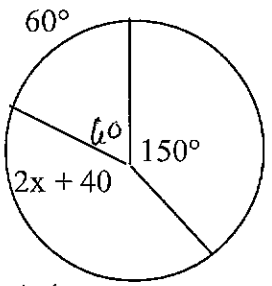
4)



X = 360 - 245 - 48

X = 67°

5)



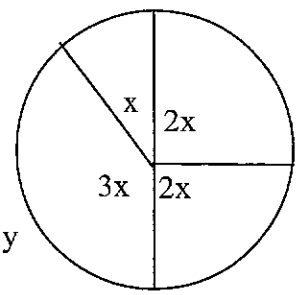
60 + 150 + 2x + 40 = 360

250 + 2x = 360

2x = 110

X = 55

6)



X + 2x + 2x + 3x = 360

8x = 360

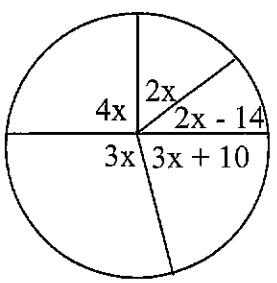
X = 45

Y = 3X

Y = 3(45)

Y = 135

7)



2x + 2x - 14 + 3x + 10 + 3x + 4x = 360

14x - 4 = 360

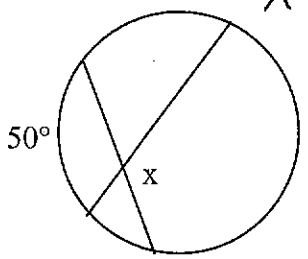
14x = 364

X = 26

Obj 9.8 Circles and Angles Homework

Find the angles of the missing variable(s).

1)

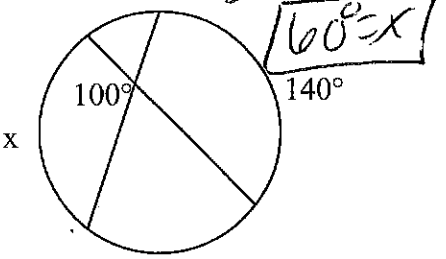


$x = \frac{1}{2}(120+50)$

$x = \frac{1}{2}(170)$

$x = 85°$

2)

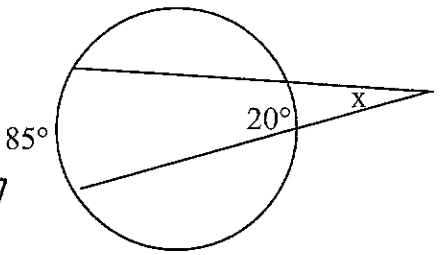


$160 = \frac{1}{2}(x+140)$

$200 = x+140$

$60° = x$

3)

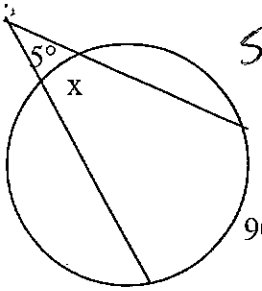


$x = \frac{1}{2}(85-20)$

$x = \frac{1}{2}(65)$

$x = 32.5°$

4)

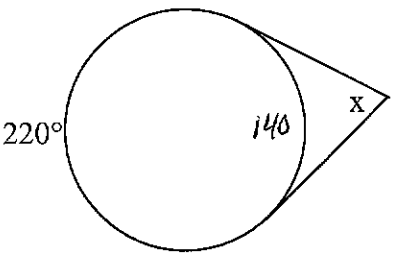


$5 = \frac{1}{2}(90-x)$

$10 = 90-x$

$80° = x$

5)

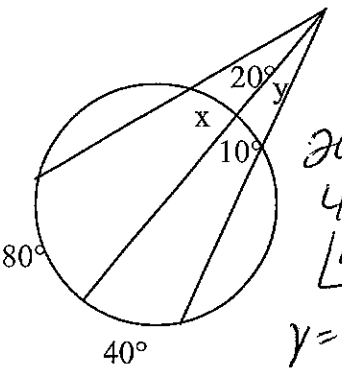


$x = \frac{1}{2}(220-140)$

$x = \frac{1}{2}(80)$

$x = 40°$

6)



$20 = \frac{1}{2}(80-x)$

$40 = 80-x$

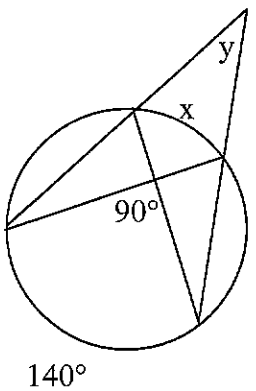
$40° = x$

$y = \frac{1}{2}(40-10)$

$y = \frac{1}{2}(30)$

$y = 15°$

7)



$90 = \frac{1}{2}(x+140)$

$180 = x+140$

$40° = x$

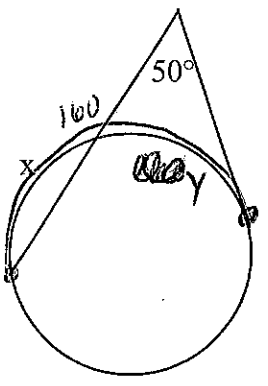
Hint: Find x first

$y = \frac{1}{2}(140-40)$

$y = \frac{1}{2}(100)$

$y = 50°$

8)



$50 = \frac{1}{2}(200-y)$

$100 = 200-y$

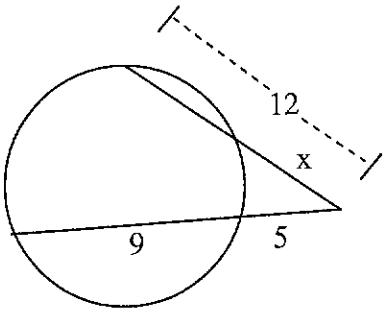
$100 = y$

$x = 60$

Obj 9.9 Circles and Segments

Find the value of the variable

1.)

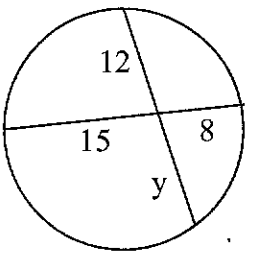


$12x = 14(5)$

$12x = 70$

$x = 5.83$ or $\frac{35}{6}$

2.)

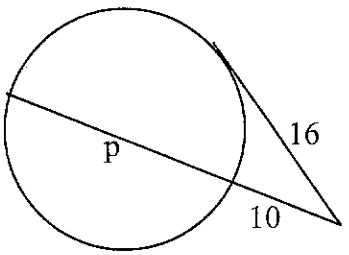


$12y = 15(8)$

$12y = 120$

$y = 10$

3.)



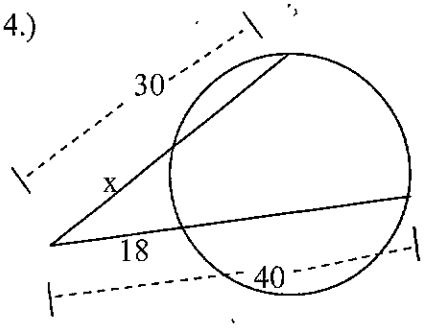
$10(p+10) = 16^2$

$10p + 100 = 256$

$10p = 156$

$p = 15.6$

4.)

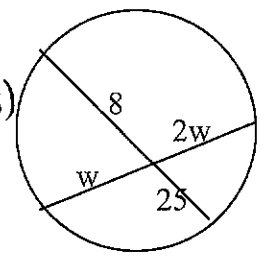


$30x = 40(18)$

$30x = 720$

$x = 24$

5.)



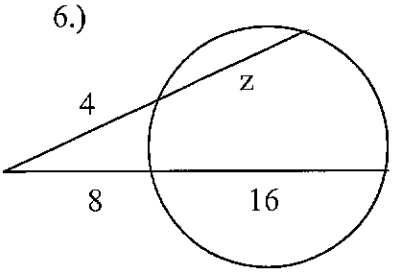
$2w(w) = 8(25)$

$2w^2 = 200$

$w^2 = 100$

$w = 10$

6.)



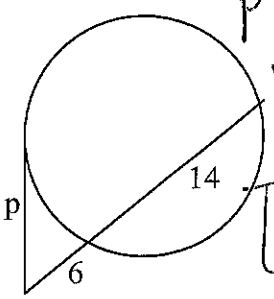
$4(4+z) = 8(24)$

$16 + 4z = 192$

$4z = 176$

$z = 44$

7.)



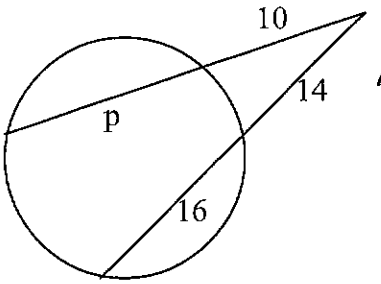
$p^2 = 6(20)$

$p^2 = 120$

$p = \sqrt{4 \cdot 30}$

$p = 2\sqrt{30}$

8.)



$10(10+p) = 14(30)$

$100 + 10p = 420$

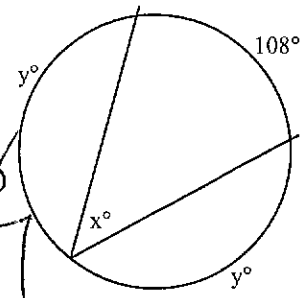
$10p = 320$

$p = 32$

9-5 Inscribed Angles Homework

Find the value of each variable. If P is shown, it is the center of the circle.

1.)



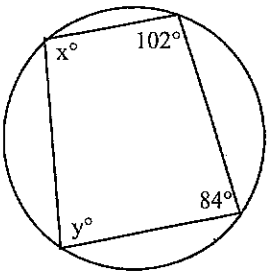
$x = \frac{1}{2}(108)$

$x = 54$

$Y = 360 - 108$

$Y = 126°$

2.)



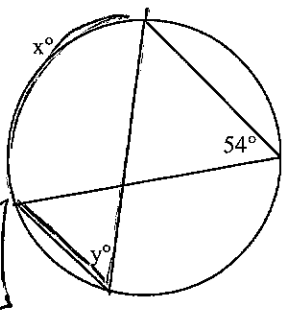
$x + 84 = 180$

$x = 96$

$y + 102 = 180$

$y = 78$

3.)

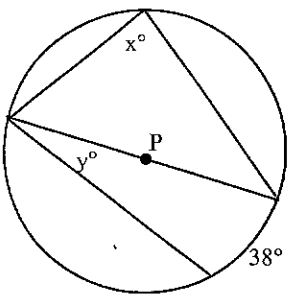


$Y = 54$

$x = 2(54)$

$x = 108$

4.)

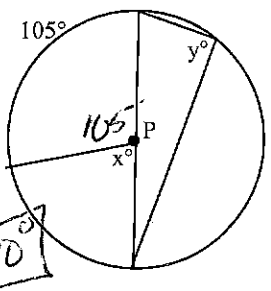


$y = \frac{1}{2}(38)$

$y = 19$

$x = 90°$

5.)

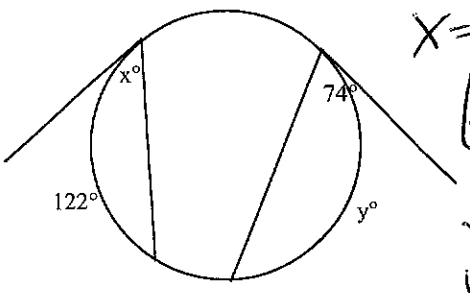


$x = 180 - 105$

$x = 75°$

$Y = 90°$

6.)



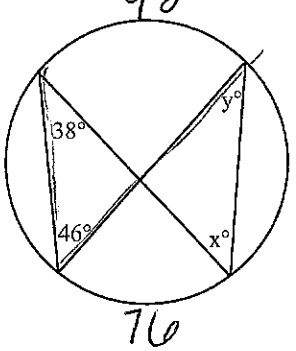
$x = \frac{1}{2}(122)$

$x = 61°$

$y = 2(74)$

$y = 148°$

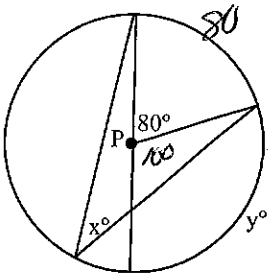
7.)



$x = 46°$

$y = 38°$

8.)



$x = \frac{1}{2}(80)$

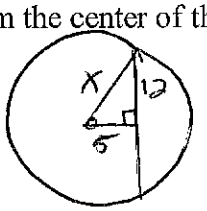
$x = 40°$

$y = 100°$

Word Problems with Circles

Draw pictures for the following problems then solve for the desired value.

1.) A chord of a circle is 24 inches long. Find the radius of the circle if the chord is 5 inches from the center of the circle.



$5^2+12^2=x^2$

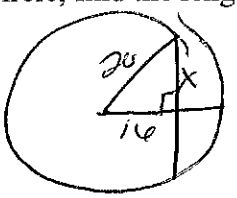
$25+144=x^2$

$169=x^2$

$13=x$

13 inches

2.) The radius of a circle is 20 inches. If a chord is drawn 16 inches from the center of the circle, find the length of the chord.



$16^2+x^2=20^2$

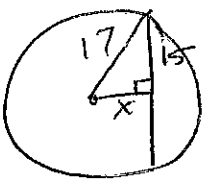
$256+x^2=400$

$x^2=144$

$x=12$

Chord = 24 in

3.) A chord of a circle is 30 mm long. If the circle has a radius of 17 mm, how far is this chord from the center?



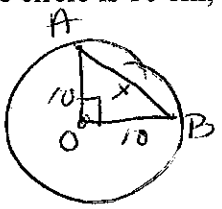
$x^2+15^2=17^2$

$x^2+225=289$

$x^2=64$

$x=8$ mm

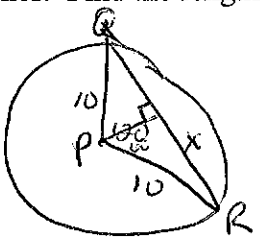
4.) Draw circle O with radii $\overline{OA}$ and $\overline{OB}$ that meet at a 90 degree angle. If the radius of the circle is 10 cm, find the length of AB.



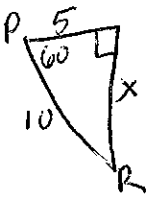
45-45-90

$AB=10\sqrt{2}$ cm

5.) A circle with radii $\overline{PQ}$ and $\overline{PR}$ that meet at a 120 degree angle has a diameter of 20 inches. Find the length of QR.



30-60-90



$x=5\sqrt{3}$ in

$QR=10\sqrt{3}$ in