Name_____

Date_____Period_____

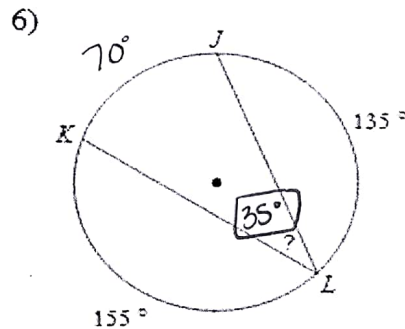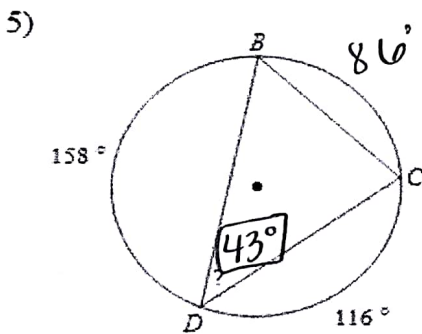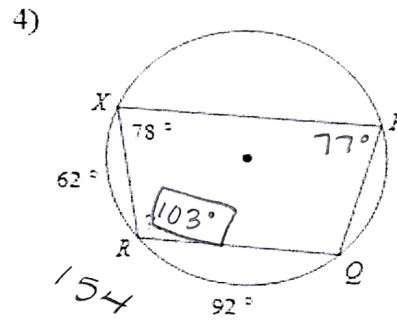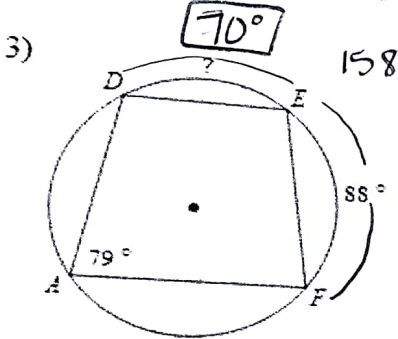**Find the length of the segment indicated. Round your answer to the nearest tenth if necessary.**

1)

$x = 15$

2)

14

14

$x = 14$

Find the measure of the arc or angle indicated.

3)

$70°$

158

88°

79°

4)

78°

77°

62°

103°

154

92°

5)

86°

158°

43°

116°

6)

70°

135°

35°

155°
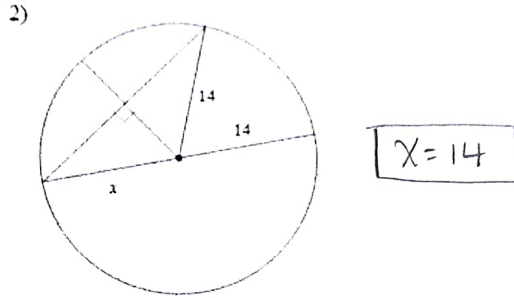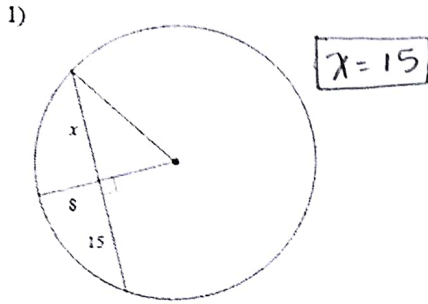
25) What do you know about the opposite angles of a quadrilateral inscribed in a circle? they are supplementary

26) What is the difference in the measures of a minor arc, major arc, and semicircle? What is the difference in the notation between the three? minor arc → less than 180° (use 2 letters to name)

major arc→ greater than 180° (use 3 letters to name)

semicircle→ 180°

27) If the area of a sector is 108π *and the central angle is* 270, what is the radius?

$$108\pi = \frac{\pi r^2 (270)}{360}$$

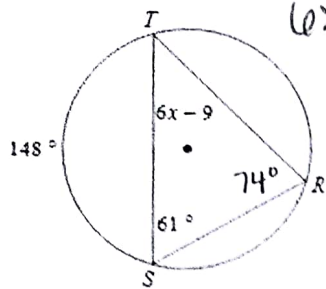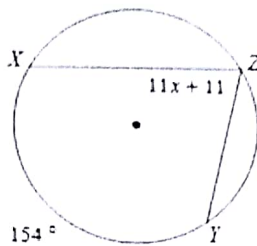$$38880 = r^2(270)$$

$$144 = r^2$$

$$r = 12$$

Solve for x.

7)

$6x - 9 + 61 + 74 = 180$

$6x + 126 = 180$

$6x = 54$

$\boxed{x = 9}$

Circle with triangle TRS, $6x-9$, $148°$, $74°$ at R, $61°$

8)

$2(11x + 11) = 154$

$22x + 22 = 154$

$22x = 132$

$\boxed{x = 6}$

Circle with $11x + 11$, $154°$, points X, Z, Y

Find the area of each sector. Round your answers to the nearest tenth.

9)

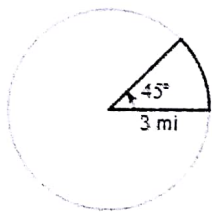$A = \dfrac{\pi (13)^2 (135)}{360}$

$= \boxed{63.4\pi \text{ km}^2}$

13 km, 135°
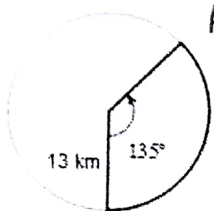
10)

$A = \dfrac{\pi (7)^2 (90)}{360}$

$= \boxed{12.3\pi \text{ mi}^2}$

90°, 7 mi

11)

$A = \dfrac{\pi (3)^2 (45)}{360}$

$= \boxed{1.1\pi \text{ mi}^2}$

45°, 3 mi
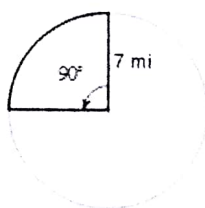
12)

$A = \dfrac{\pi (13)^2 (60)}{360}$

$= \boxed{28.2\pi \text{ ft}^2}$

13 ft, 60°
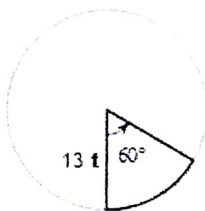
Find the length of each arc.

13)
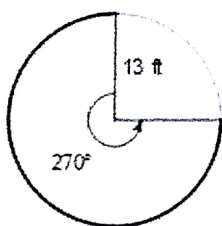
$L = \dfrac{2\pi (13)(270)}{360}$

$= \boxed{19.5\pi \text{ ft}}$

13 ft, 270°

14)
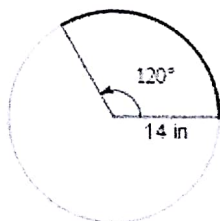
$L = \dfrac{2\pi (14)(120)}{360}$

$= \boxed{9.3\pi \text{ in}}$

120°, 14 in

Solve for x. Assume that lines which appear to be tangent are tangent.

15)

$3x + 1 = 4x$

$\boxed{x = 1}$

3.2, $3x + 1$, $4x$

16)

$6x - 5 = 5x + 4$

$\boxed{x = 9}$
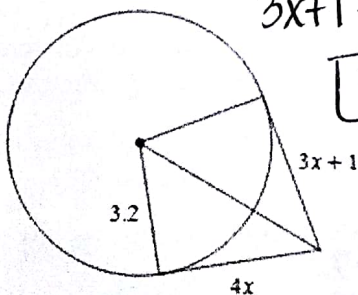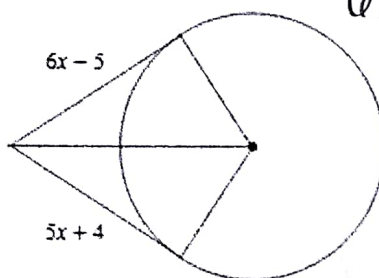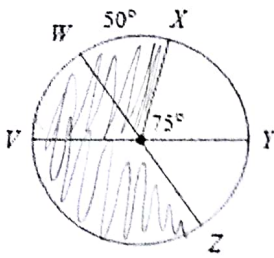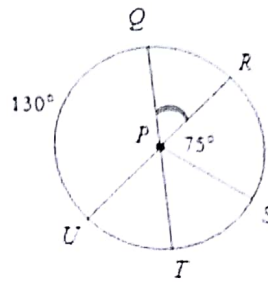
$6x - 5$, $5x + 4$

Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.
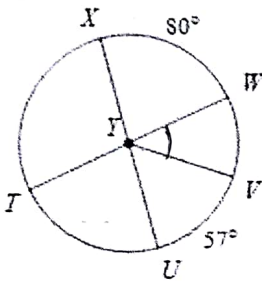
17) $m\widehat{ZVX}$

$180 + 50 = \boxed{230°}$

18) $m\angle QPR$

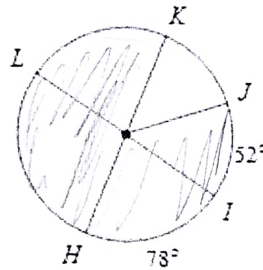$180 - 130 = \boxed{50°}$
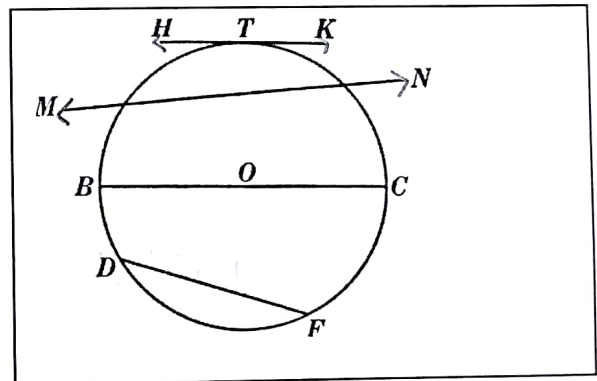
19) $m\angle WYV$

$180 - 80 - 57 = \boxed{43°}$

20) $m\widehat{JHK}$
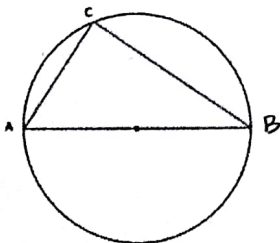
$180 + 78 + 52 = \boxed{310°}$

21) Name the following:

a. Diameter $\overline{BC}$

b. Radii $\overline{OB}, \overline{OC}$

c. Tangent $\overleftrightarrow{HK}$

d. Chord $\overline{BC}, \overline{DF}$

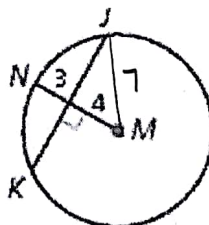e. Secant $\overleftrightarrow{MN}$

22) $m\angle ACB = 5x-10$, solve for x.

$5x - 10 = 90$
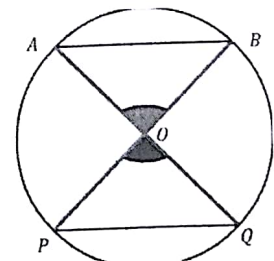$5x = 100$
$\boxed{x = 20}$

23) Find JK. $= \boxed{2\sqrt{33}}$

$x^2 + 4^2 = 7^2$
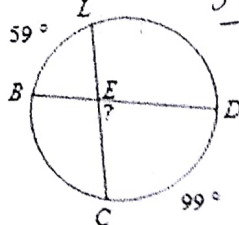$x^2 + 16 = 49$
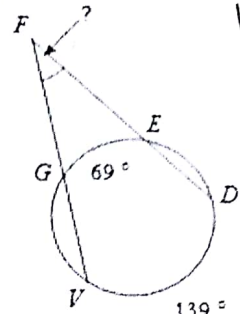$x^2 = 33$
$x = \sqrt{33}$

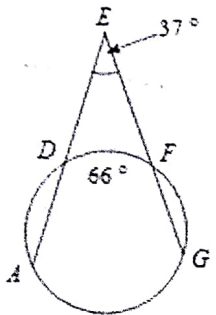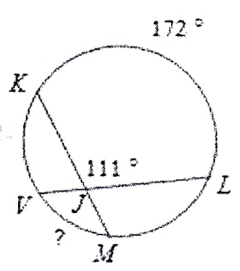24) AB=3x, PQ=5x-10. Find x.

$3x = 5x - 10$
$-2x = -10$
$\boxed{x = 5}$

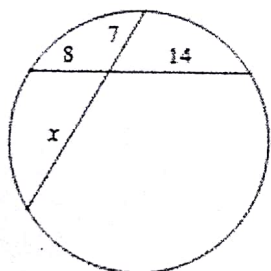**Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.**
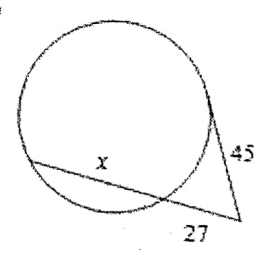
1)

$\dfrac{59+99}{2} = x$

$\dfrac{158}{2} = x$

$\boxed{x = 79°}$
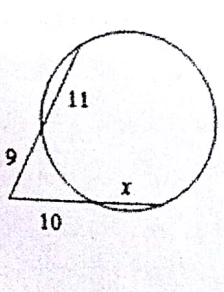
2)

$\dfrac{139-69}{2} = x$

$\dfrac{70}{2} = x$

$\boxed{35° = x}$

3)

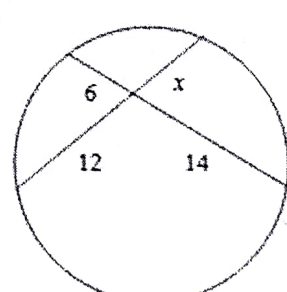$\dfrac{x-66}{2} = 37$

$x - 66 = 74$

$\boxed{x = 140°}$

4)

$\dfrac{x+172}{2} = 111$

$x + 172 = 222$

$\boxed{x = 50°}$

Solve for x. Assume that lines which appear tangent are tangent.

1)

$7x = 112$

$\boxed{x = 16}$

2)

$45^2 = 27(27+x)$

$2025 = 729 + 27x$

$1296 = 27x$

$\boxed{x = 48}$

3)

$10(10+x) = 9(20)$

$100 + 10x = 180$

$10x = 80$

$\boxed{x = 8}$

4)

$12x = 84$

$\boxed{x = 7}$

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