Secondary Math 2
Unit II Review Circles

Name: **Key**

State the best term for the given figure.

1. D   E   A. Center

2. $\overleftrightarrow{FH}$ G   B. Chord

3. $\overline{CD}$ D   C. Diameter

4. $\overline{AB}$ B   D. Radius

5. C   A   E. Point of tangency

6. $\overline{AD}$ C   F. Common external tangent

7. $\overleftrightarrow{AB}$ H   G. Common internal tangent

8. $\overleftrightarrow{DE}$ F   H. Secant
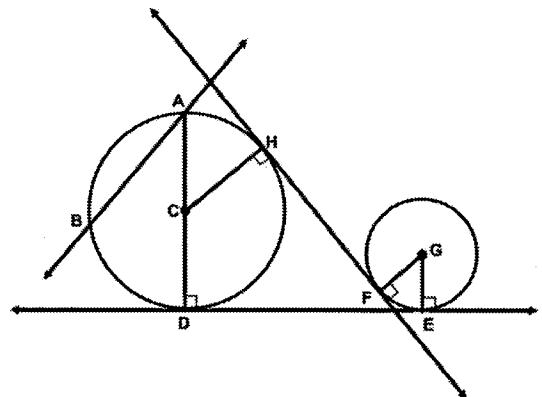
$\overline{AD}$ *and* $\overline{BE}$ **are diameters of the circle. Find the indicated measure and state whether it is a minor arc, major arc or a semicircle.**

9. $m\overset{\frown}{AB}$ = $68°$, minor   10. $m\overset{\frown}{CD}$ = $65°$, minor

11. $m\overset{\frown}{ABD}$ = $180°$, semi   12. $m\overset{\frown}{ADC}$ = $245°$, major

13. $m\overset{\frown}{CE}$ = $133°$, minor   14. $m\overset{\frown}{CAE}$ = $227°$, major
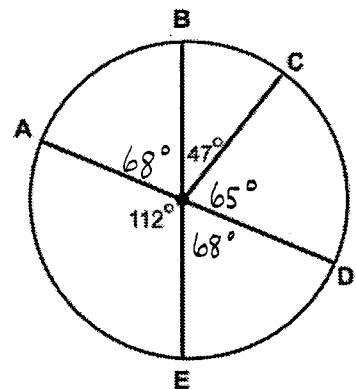
Write the equation of the circle with the given information:

15. h k Center: $(-3, 7)$ Radius: 6	16. Center: $(1, 2)$ A point on the circle: $(4, 2)$	17. Center: $(7, -9)$ A point on the circle: $(3, -6)$
$(x-h)^2 + (y-k)^2 = r^2$ $(x+3)^2 + (y-7)^2 = 6^2$ $(x+3)^2 + (y-7)^2 = 36$	$(x-1)^2 + (y-2)^2 = r^2$ $\sqrt{(4-1)^2 + (2-2)^2} = r$ $r = 3$ distance formula between 2 pts. $(x-1)^2 + (y-2)^2 = 9$	$(x-7)^2 + (y+9)^2 = r^2$ $(3-7)^2 + (-6+9)^2 = r^2$ $(-4)^2 + (3)^2 = r^2$ $25 = r^2$ $(x-7)^2 + (y+9)^2 = 25$

Find the value of x. All lines that appear to be tangents are.

18.

$6^2 + x^2 = 10^2$
$x = 8$

$x = 8$

19.

$x^2 + 6^2 = (x+2)^2$
$x^2 + 36 = x^2 + 4x + 4$
$36 = 4x + 4$
$32 = 4x$
$x = 8$

20.

$\tan 43° = \frac{10}{x}$

$x = \frac{10}{\tan 43°}$

$x = 10.7$

21.

$9\sqrt{3}$

22.

$x^2 - 7x = x - 12$
$x^2 - 8x + 12 = 0$
$(x-6)(x-2) = 0$
$x = 6, 2$

$x^2 - 7x$

$x - 12$

23.

$x = 5$

24.

$x° = 121°$

$118°$

25.

$130°$

$x°$

8 8

$x° = 115°$

26.

$142°$

$38°$

diameter

$x° = 142°$

27.

$40°$

$40°$

$x°$

$140°$

28.

$3x + 16$

$3x + 16 = 12x + 7$
$9 = 9x$
$x = 1$

$12x + 7$

29.

$x + 12$

$3x - 11$

$x + 12 = 3x - 11$
$23 = 2x$
$x = 11.5$

**30.**

$x°$

$65°$

$x° = 105°$

$85°$

31.

$76°$

$76°$

$(4x + 12)°$

$4x + 12 + 76 = 180$

$X = 23°$

32.

$122°$

$x° = 49°$

$140°$

$x°$
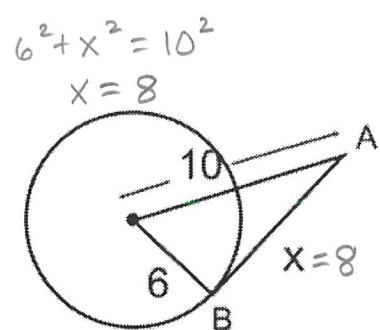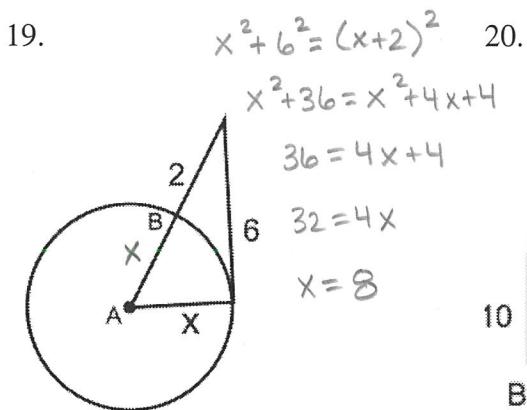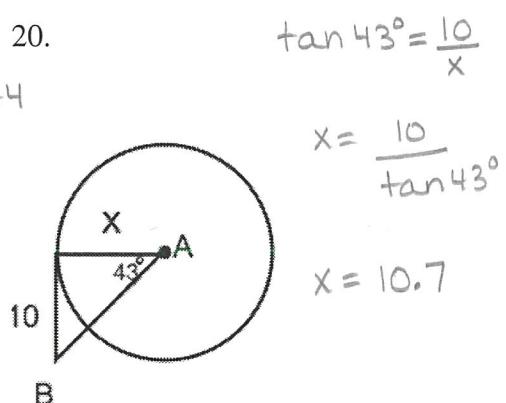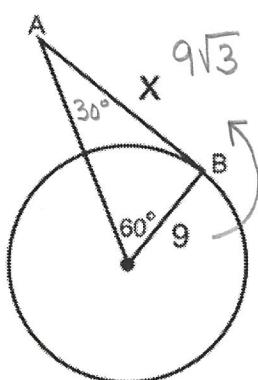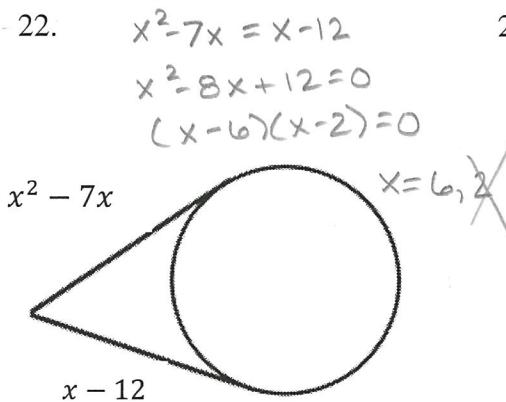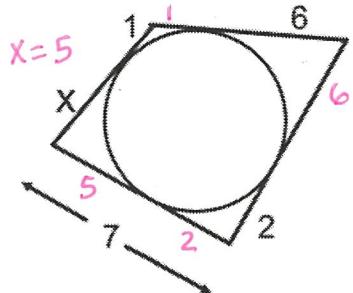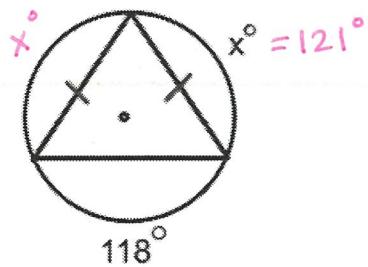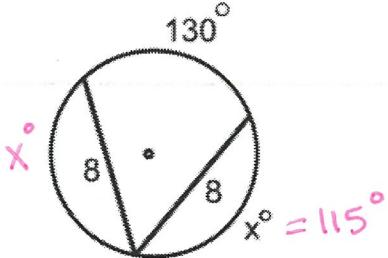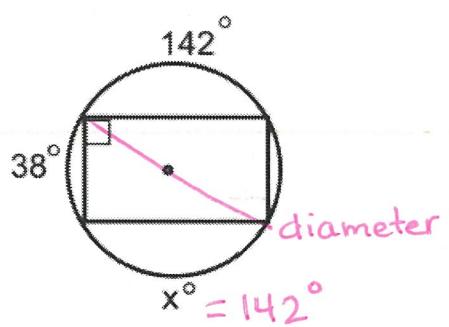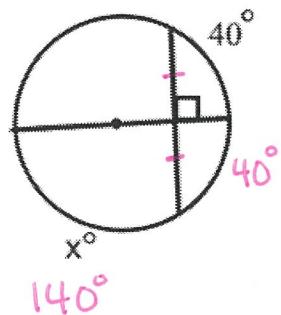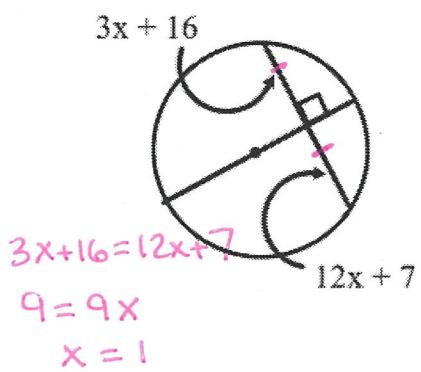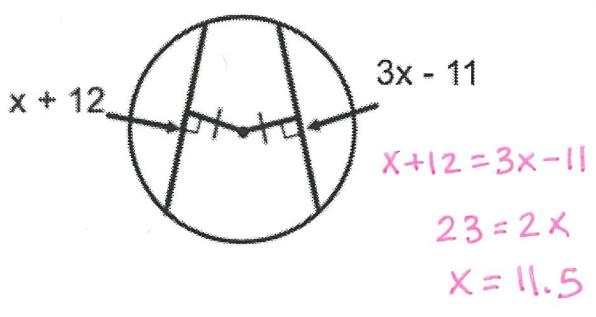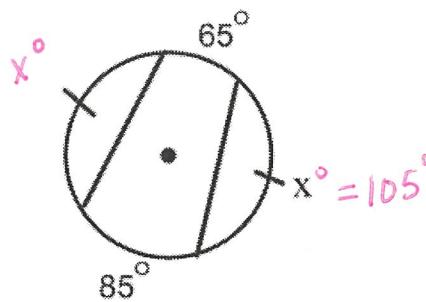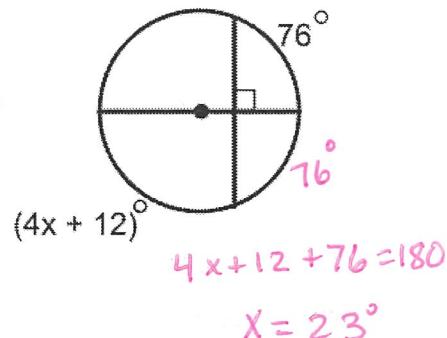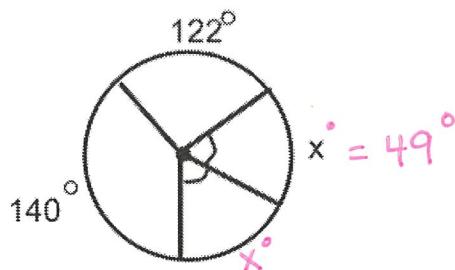
Find the value of each numbered angle or arc:

**33.** $\angle 1 = 82°$

$164°$

1

34. $74 = \frac{1}{2}(60 + x)$

$148 = 60 + x$

$60°$ $74°$ x 1 $88°$

35. $X = \frac{1}{2}(56° + 78°)$

$X = 67°$

$56°$

$\angle 1 = 67°$

1 x

$78°$

36.

x 1

66

$114°$
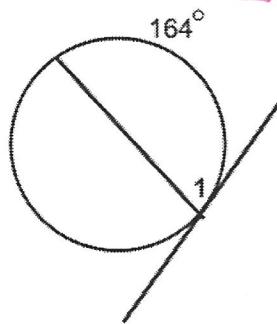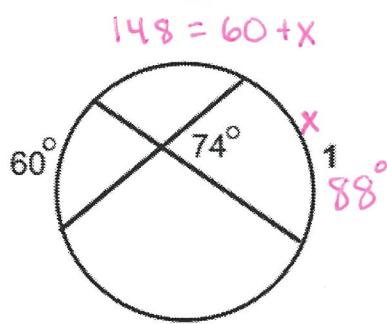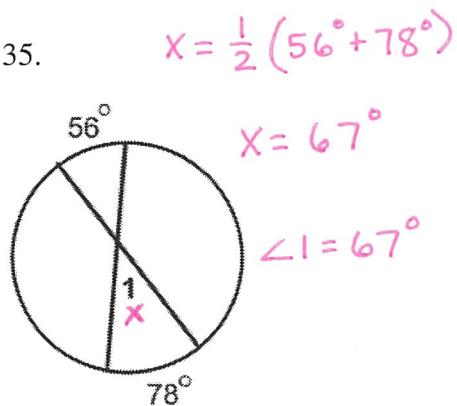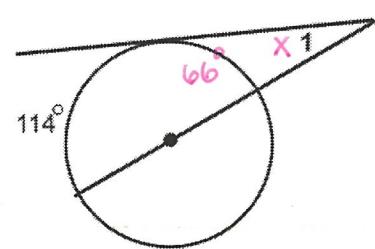
$X = \frac{1}{2}(114° - 66°)$

$X = 24°$

$\angle 1 = 24°$

37.

$248°$

$112°$

1 x
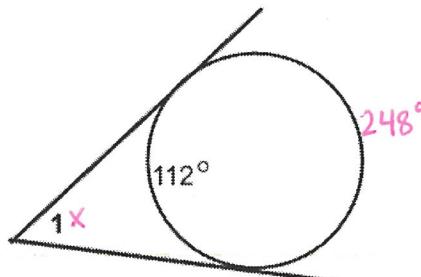
$X = \frac{1}{2}(248° - 112°)$

$X = 68°$

$\angle 1 = 68°$

38.

$110°$

$42°$

1 x
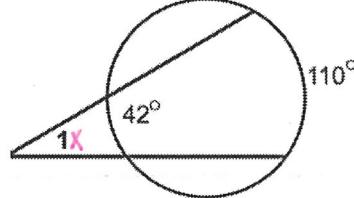
$X = \frac{1}{2}(110 - 42)$

$X = 34°$

$\angle 1 = 34°$

Solve for all missing angles and arcs:

39.

$192°$

$87°$ $63°$

$105°$

$84°$ $96°$

$75°$

$105°$

$105°$

40.

$180°$

$22°$ $79°$

$128°$ $52°$

$101°$ $76°$

$82°$

$104°$
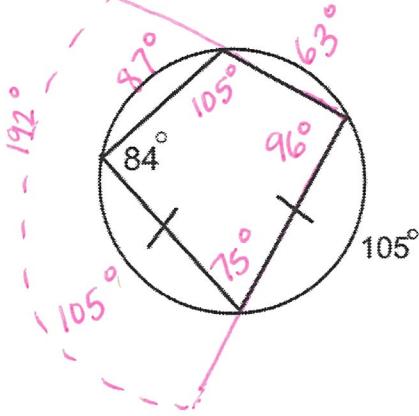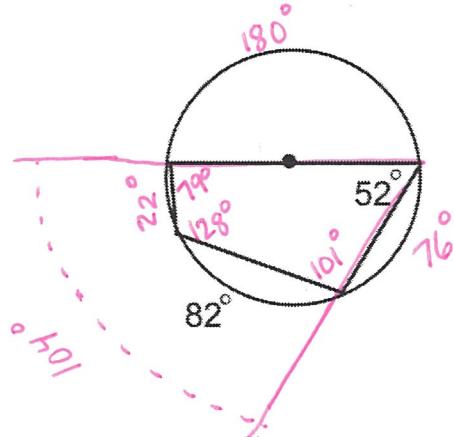
Solve for x.

41.

$2(4x+1) = 10x - 30$

$8x + 2 = 10x - 30$

$32 = 2x$

$x = 16$

$(10x - 30)°$

$(4x + 1)°$
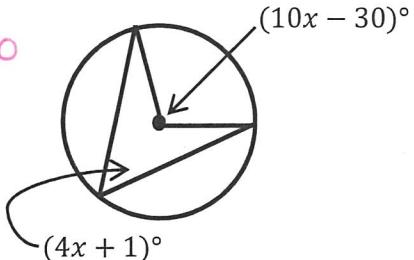
42.

$2(2x+5) = 6x - 20$

$4x + 10 = 6x - 20$

$30 = 2x$

$x = 15$

$(6x - 20)°$

$(2x + 5)°$
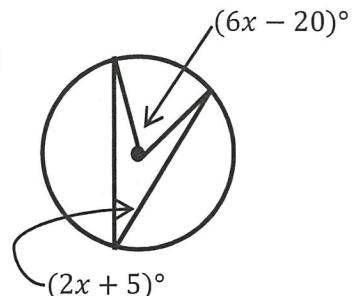
43. **Find $m\widehat{AB}$**
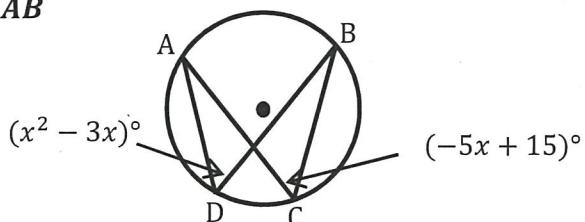
$(x^2 - 3x)°$

$(-5x + 15)°$

$x^2 - 3x = -5x + 15$

$x^2 + 2x - 15 = 0$

$(x+5)(x-3) = 0$

$x = -5, 3$

$x = -5 \rightarrow m\widehat{AB} = 80°$

$x = 3$ No solution

44. **Find $m\angle B$**

$21°$
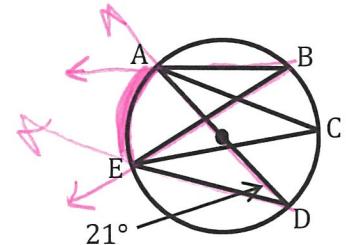
$m\angle B = 21°$

45. If a radius of a circle is 14 in. and a chord of the circle is 20 in. What is the distance from the chord to the center?
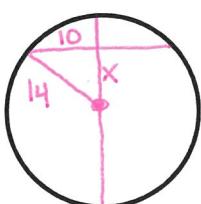
$x^2 + 10^2 = 14^2$

$x = \sqrt{96}$

$x = 4\sqrt{6} \approx 9.8$ in

46. If a chord is 18 ft. long and is 6 ft. from the center, what is the radius of the circle?
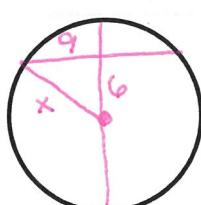
$9^2 + 6^2 = x^2$

$x = \sqrt{117}$

$x = 3\sqrt{13} \approx 10.8$ ft

47. If a chord is 6 in. from the center of a circle with a diameter of 20 in, how long is the chord?
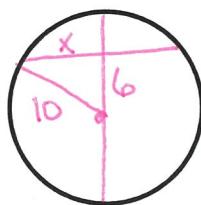
$x^2 + 6^2 = 10^2$

$x^2 = 64$

$x = \sqrt{64}$

$x = 8$

chord $= 16$ in