

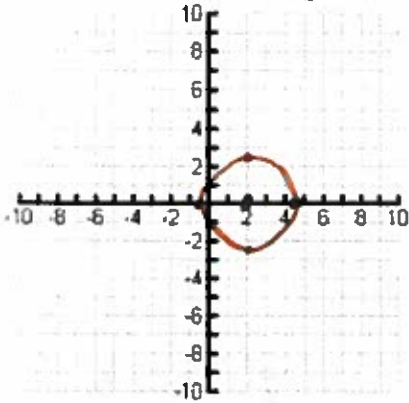
PAP Circle Review

Key

Graph each circle whose equation is given. Label the center and measure the radius on each graph.

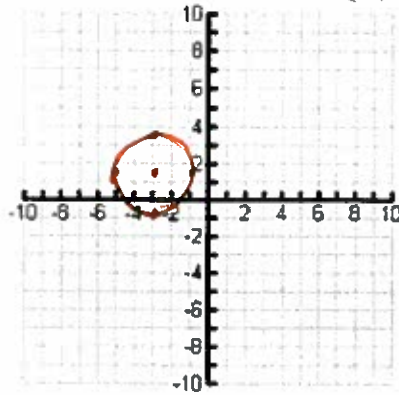
1. $(x - 2)^2 + y^2 = 6.25$

$(2, 0) r = 2.5$



2. $(x + 3)^2 + (y - 3/2)^2 = 4$

$(-3, 3/2) r = 2$



Write the equation of the circle P based on the given information.

3. Center: $P(0, 1/2)$

Point on circle $(0, 8)$

$x^2 + (y - 1/2)^2 = 56.25$

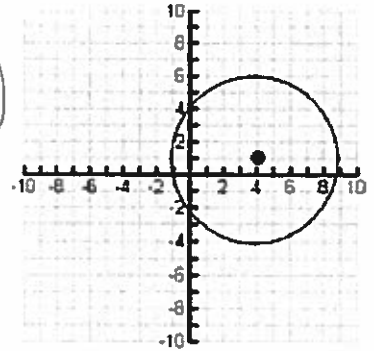
distance formula to find radius
 $\sqrt{(0-0)^2 + (8-1/2)^2}$
 $\sqrt{0 + (7.5)^2}$
 $7.5 = r$

4. Center: $P(-5.3, 1)$

diameter: 9 $\leftarrow r = 4.5$

$(x + 5.3)^2 + (y - 1)^2 = 20.25$

5.



$\sqrt{(4-1)^2 + (6-2)^2} = \sqrt{9+16} = \sqrt{25} = 5 = r$

6. $x^2 + 4x + y^2 - 6y = 12$

$x^2 + 4x + 4 + y^2 - 6y + 9 = 12 + 4 + 9$
 $(x+2)^2 + (y-3)^2 = 25$

7. $y^2 - 2x + 8y + x^2 = 19$

$x^2 - 2x + 1 + y^2 + 8y + 16 = 19 + 1 + 16$
 $(x-1)^2 + (y+4)^2 = 36$

8. Center $(1, 2)$ point on circle $(4, 6)$

$(x-1)^2 + (y-2)^2 = 25$

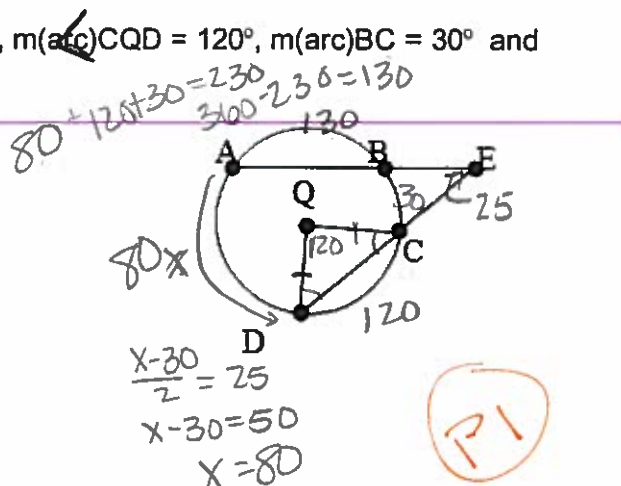
Assume that lines that appear to be tangents are tangents. In circle Q, $m(\text{arc} CQD) = 120^\circ$, $m(\text{arc} BC) = 30^\circ$ and $m(\text{arc} BEC) = 25^\circ$. Find each measure.

9. $m(\text{arc} DC) = 120^\circ$

10. $m(\text{arc} AD) = 80^\circ$

11. $m(\text{arc} AB) = 130^\circ$

12. $m(\text{arc} QDC) = 30^\circ$
 B/c radii \cong
 so isos Δ



P1

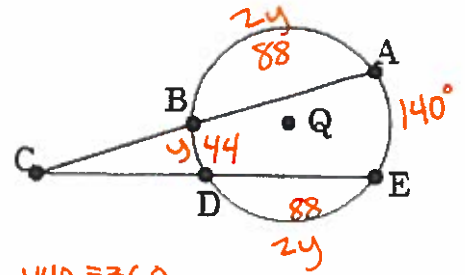
In circle Q, $m(\text{arc}AE) = 140^\circ$, $m(\text{arc}BD) = y$, $m(\text{arc}AB) = 2y$, and $m(\text{arc}DE) = 2y$. Find each measure.

13. $m(\text{arc}BD) = 44^\circ$

14. $m(\text{arc}AB) = 88^\circ$

15. $m(\text{arc}DE) = 88^\circ$

16. $m\angle BCD = \frac{140-44}{2} = 48^\circ$



$y + 2y + 2y + 140 = 360$
 $5y + 140 = 360$
 $5y = 220$
 $y = 44$

In circle P, $m(\text{arc}BC) = 4x - 50$, $m(\text{arc}DE) = x + 25$, $m(\text{arc}EF) = x - 15$, $m(\text{arc}CD) = x$, and $m(\text{arc}FB) = 50$. Find each measure.

17. $m\angle A = \frac{150-50}{2} = 50^\circ$

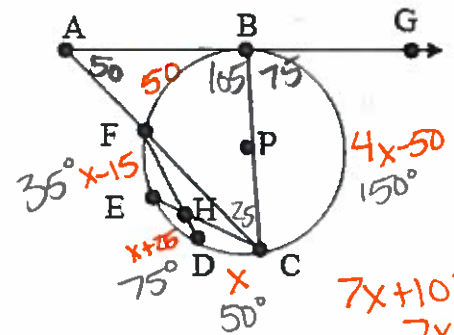
18. $m\angle BCA = \frac{50}{2} = 25^\circ$

19. $m\angle ABC = 105^\circ$
 $50 + 25 = 75$
 $180 - 75 = 105$

20. $m\angle GBC = 75^\circ$ (Linear Pair)

21. $m\angle FHE = \frac{35+50}{2} = 42.5^\circ$

22. $m\angle CFD = \frac{50}{2} = 25^\circ$



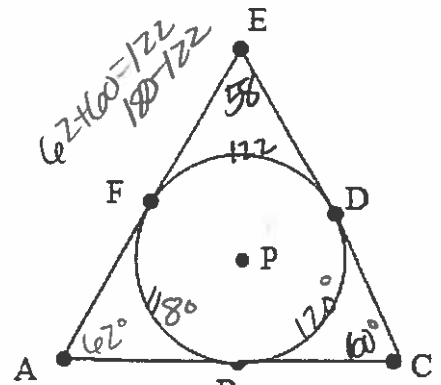
$7x + 10 = 360$
 $7x = 350$
 $x = 50$

In Circle P, $m\angle A = 62^\circ$ and $m(\text{arc}BD) = 120^\circ$. Find each measure.

23. $m\angle C = 60^\circ$

24. $m(\text{arc}DF) = 122^\circ$

25. $m\angle E = 58^\circ$



$180 - 62 = 118$
 $180 - 120 = 60$
 *special case 2 tangents

In circle P, $m(\text{arc}AB) = x$ and $m(\text{arc}BC) = 3x$. Find each measure.

26. $m(\text{arc}ADC) = 180^\circ$

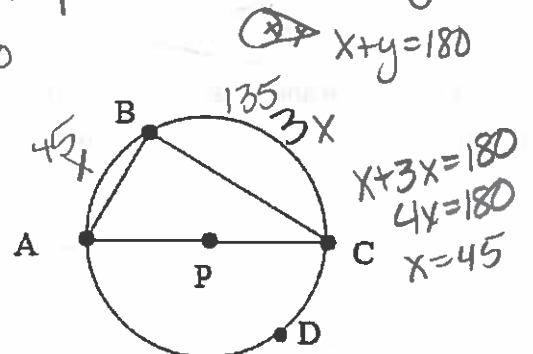
27. $m\angle ABC = 90^\circ$ b/c $\frac{180}{2} = 90$

28. $m(\text{arc}AB) = 45^\circ$

29. $m\angle A = \frac{135}{2} = 67.5^\circ$

30. $m(\text{arc}BC) = 135^\circ$

31. $m\angle C = \frac{45}{2} = 22.5^\circ$



In circle Q, $m\angle ABC = 72^\circ$, and $m(\text{arc}CD) = 46^\circ$. Find each measure.

32. $m(\text{arc}CA) = 144^\circ$

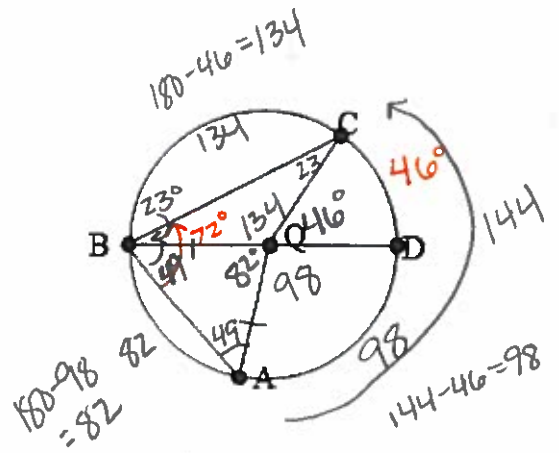
33. $m(\text{arc}BC) = 134^\circ$

34. $m(\text{arc}AD) = 98^\circ$

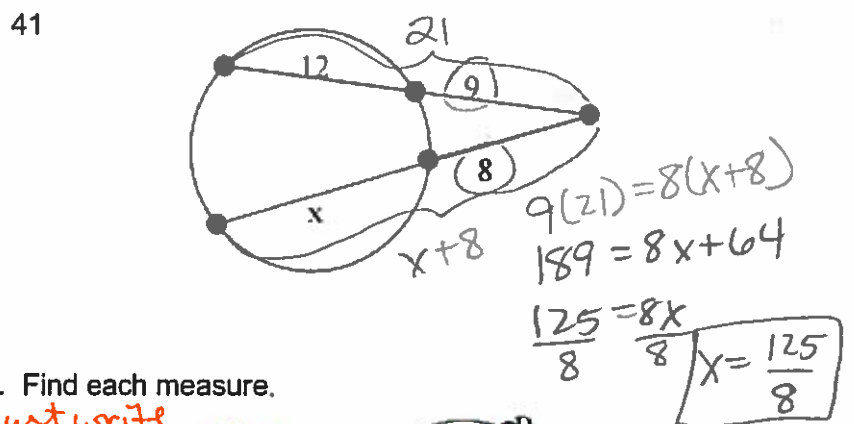
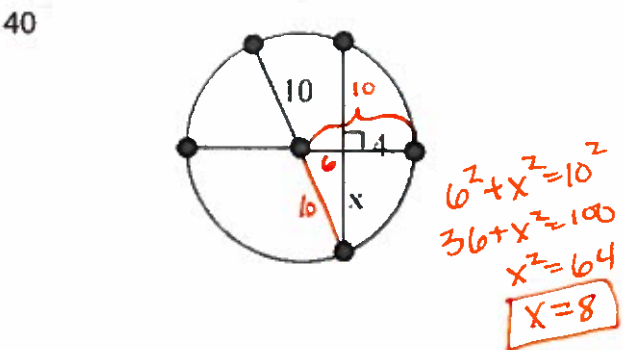
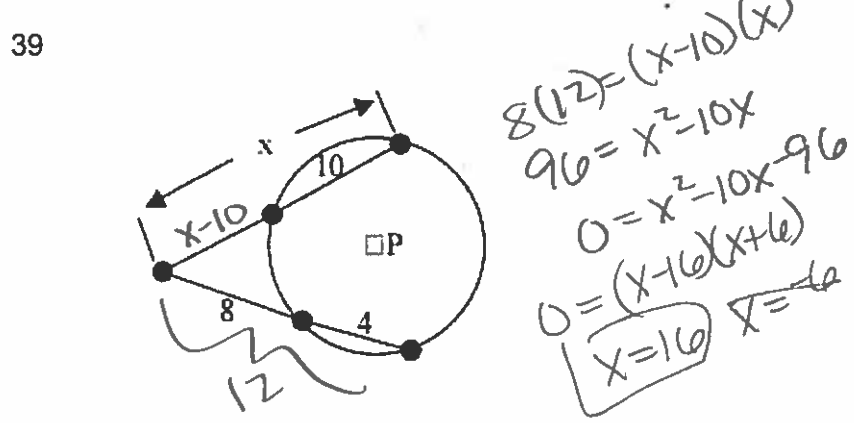
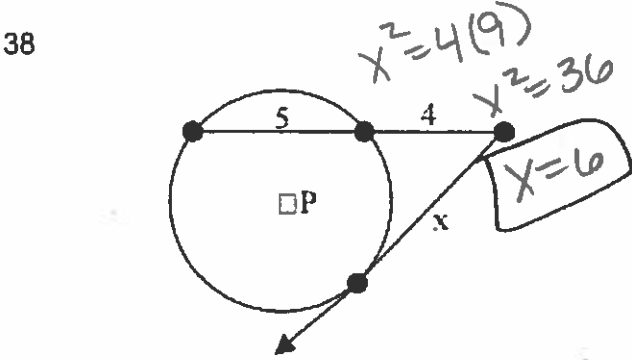
35. $m\angle C = 23^\circ$

36. $m\angle ABD = 49^\circ$

37. $m\angle A = 49^\circ$



Find the value of x to the nearest tenth. Assume segments that appear to be tangents are tangents.



In circle P, $(\text{arc}CE) = 6$, $(\text{arc}CD) = 16$, $(\text{arc}AB) = 17$. Find each measure.

42. $(\text{arc}EB) = 5 \text{ or } 12$

* \rightarrow must write one as x and the other as $17-x$

$$6(16) = x(17-x)$$

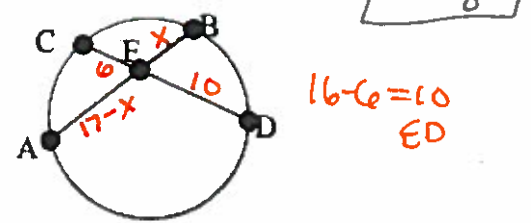
$$60 = 17x - x^2$$

$$x^2 - 17x + 60 = 0$$

$$(x-5)(x-12) = 0$$

$x=5$
 $x=12$

43. $(\text{arc}AE) = 12 \text{ or } 5$



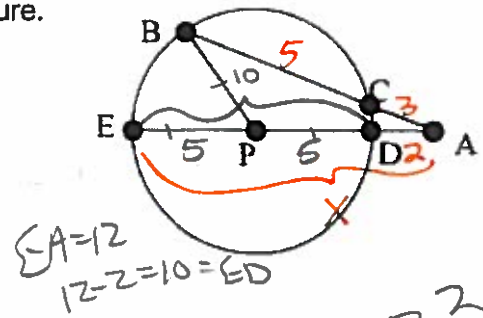
In circle P, $(\text{arc}AC) = 3$, $(\text{arc}BC) = 5$, and $(\text{arc}AD) = 2$. Find each measure.

44. $(\text{arc}PD) = 5$

45. $(\text{arc}ED) = 10$

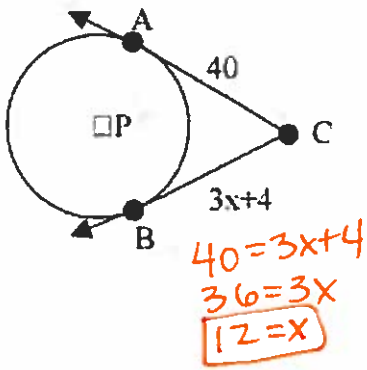
46. $(\text{arc}PB) = 5$ (All radii \cong)

$3(8) = 2(x)$
 $24 = 2x$
 $12 = x$

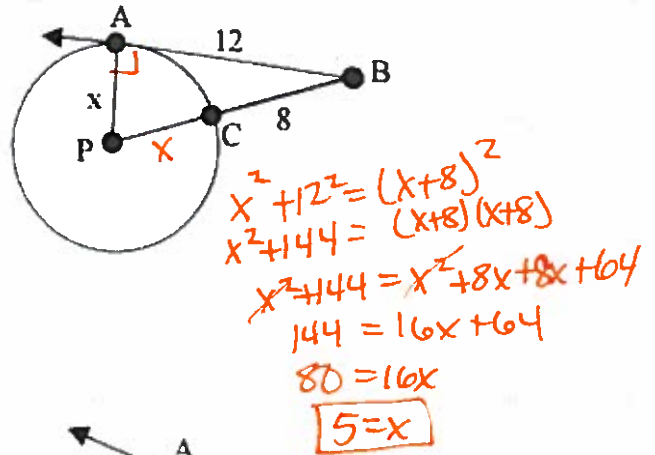


For each circle P, find the value of x. Assume that segments that appear to be tangent are tangent.

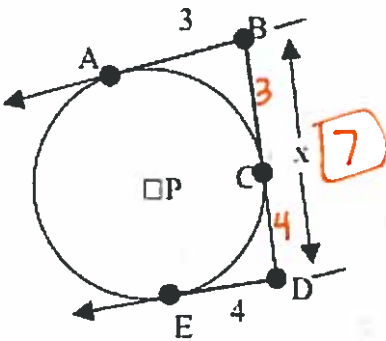
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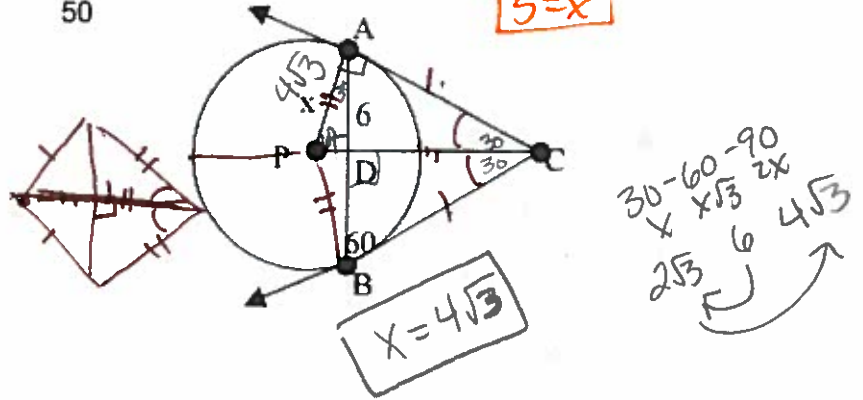
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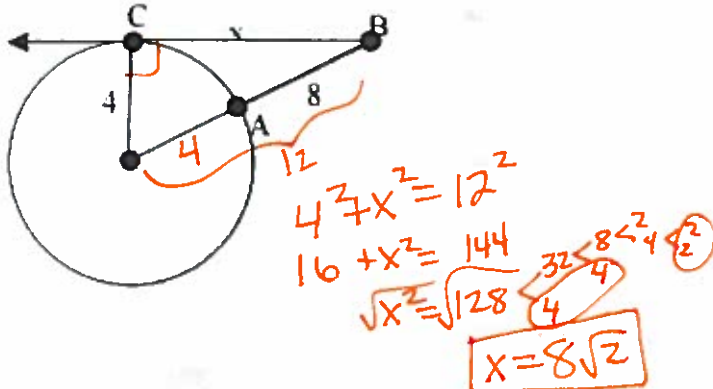
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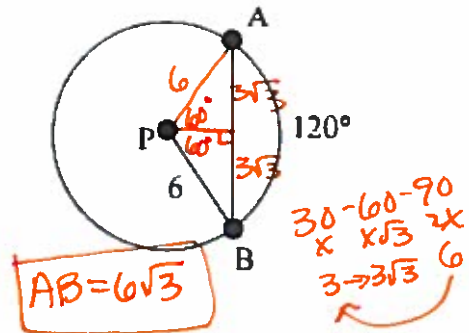
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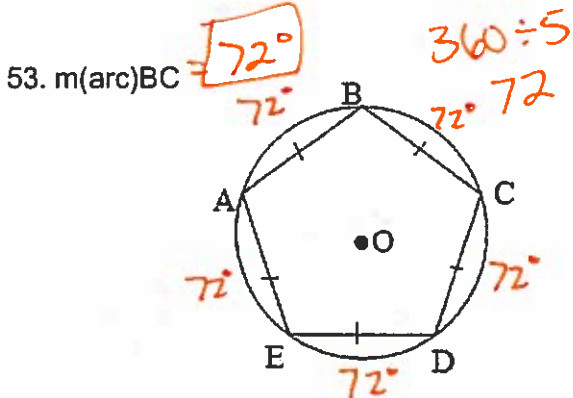
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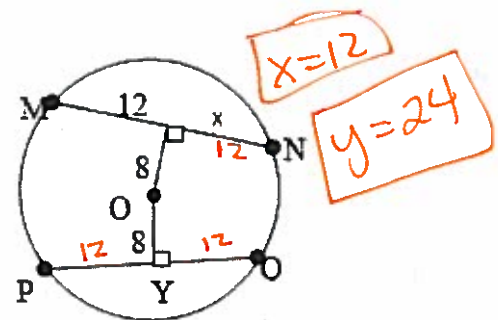
52. Find (arc)AB



In each figure, O is the center. Find each measure to the nearest tenth.



54



55. Suppose a chord of a circle is 16 inches long and is 6 inches from the center of the circle. Find the length of a radius.



$$r = 10 \text{ in}$$

56. Find the length of a chord that is 5 inches from the center of a circle radius of 13 inches.

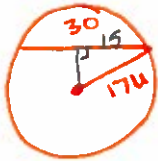


$$5^2 + x^2 = 13^2$$

$$x = 12$$

$$\text{Chord} = 24 \text{ in}$$

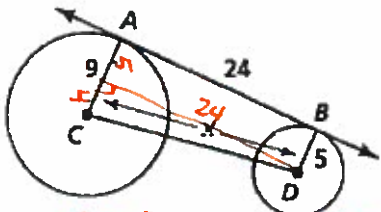
57. Suppose a radius of a circle is 17 units and a chord is 30 units long. Find the distance from the center of the circle to the chord.



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

$$x = 8 \text{ 8 units}$$

58. Find x

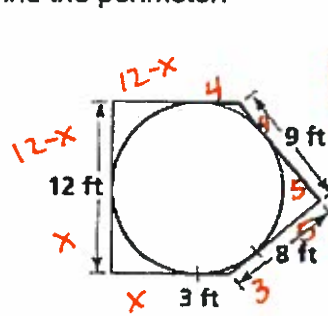


$$4^2 + 24^2 = x^2$$

$$x = \sqrt{592} \approx 24.33$$

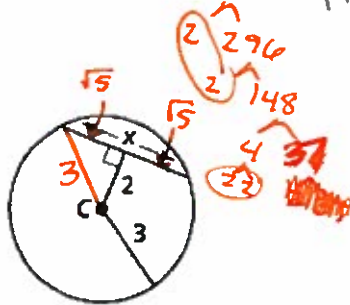
$$4\sqrt{74}$$

59. Find the perimeter:



$$P = 48 \text{ ft}$$

60.



$$a^2 + 2^2 = 3^2$$

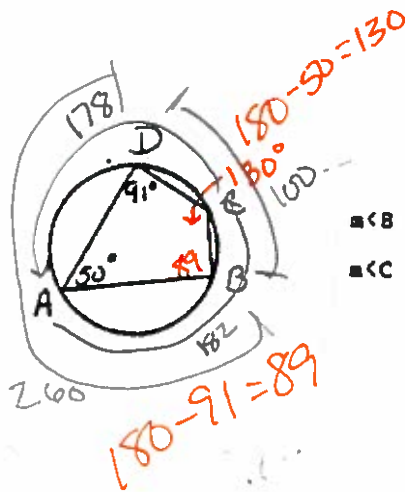
$$a^2 + 4 = 9$$

$$a^2 = 5$$

$$a = \sqrt{5}$$

$$x = 2\sqrt{5}$$

61.



$$\angle B = 89^\circ$$

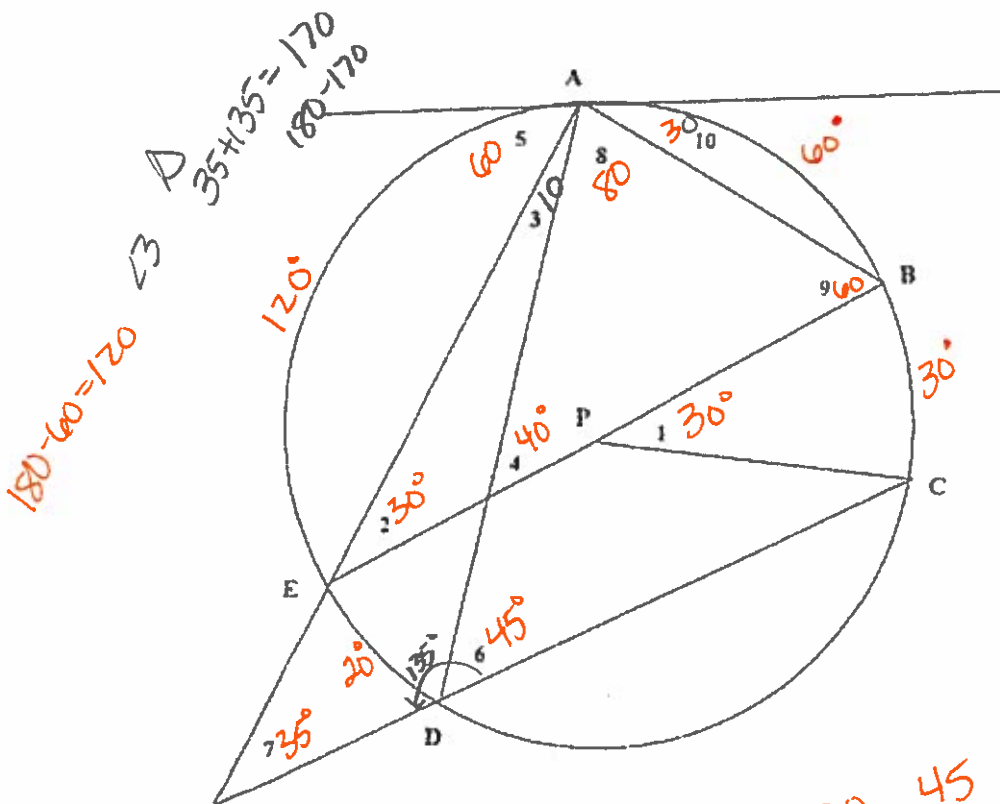
$$\angle C = 130^\circ$$

$$\widehat{BD} = \frac{100^\circ}{2}$$

$$\widehat{ABC} = \frac{182^\circ}{2}$$

$$\widehat{DAB} = \frac{260^\circ}{2}$$

Given: Circle P, $m\widehat{AB} = 60$ $m\widehat{BC} = 30$ $m\widehat{ED} = 20$



- $m\angle 1 = 30^\circ$
- $m\angle 2 = 30^\circ$
- $m\angle 3 = 10^\circ$
- $m\angle 4 = 40^\circ$
- $m\angle 5 = 60^\circ$
- $m\angle 6 = 45^\circ$
- $m\angle 7 = 35^\circ$
- $m\angle 8 = 80^\circ$
- $m\angle 9 = 60^\circ$
- $m\angle 10 = 30^\circ$

$\angle 7 = \frac{90 - 20}{2} = 35$ $\angle 6 = \frac{90}{2} = 45$
 $\angle 7 = \frac{60}{2} = 30$
 $\frac{60 + 20}{2} = 40 = 44$