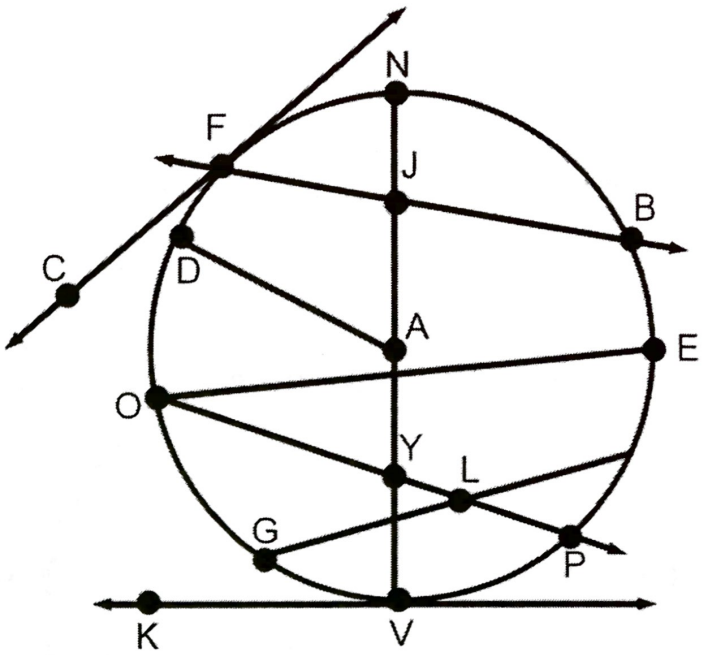
Chapter 9 Review
Math 3313

Name Key
Date _____ **Period** _____

Use the figure of Circle A at right to answer #1 - # 9. If a line appears tangent, assume it is tangent. Be as specific as possible.



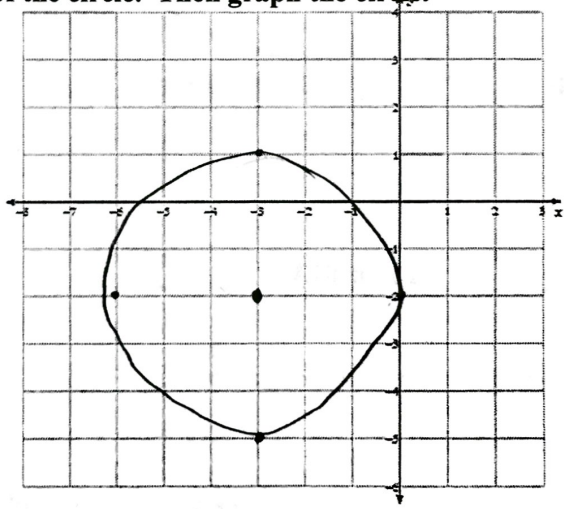
1. **Name two radii:** $\overline{NA}$, $\overline{AV}$, $\overline{DA}$
2. **Name two chords:** $\overline{NV}$, $\overline{FB}$
3. **Name a secant:** $\overleftrightarrow{FB}$
4. **Name two tangent:** $\overleftrightarrow{CF}$, $\overleftrightarrow{KV}$
5. **Name two Central angles:** $\angle DAN$, $\angle DAV$
6. **Name a diameter:** $\overline{NV}$
7. **F is a** point of tangency
8. $\angle POE$ **is an** inscribed angle
9. **Name a right angle:** $\angle KVA$, $\angle AVP$

Given the equation of a circle, find the center, and radius of the circle. Then graph the circle.

10. $(x+3)^2+(y+2)^2=9$

Center: $(-3,-2)$

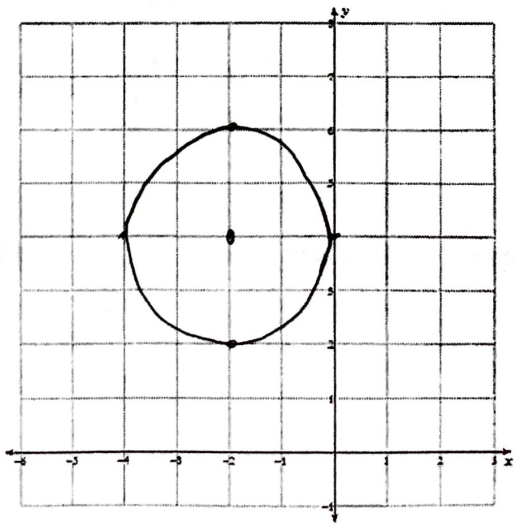
Radius: 3



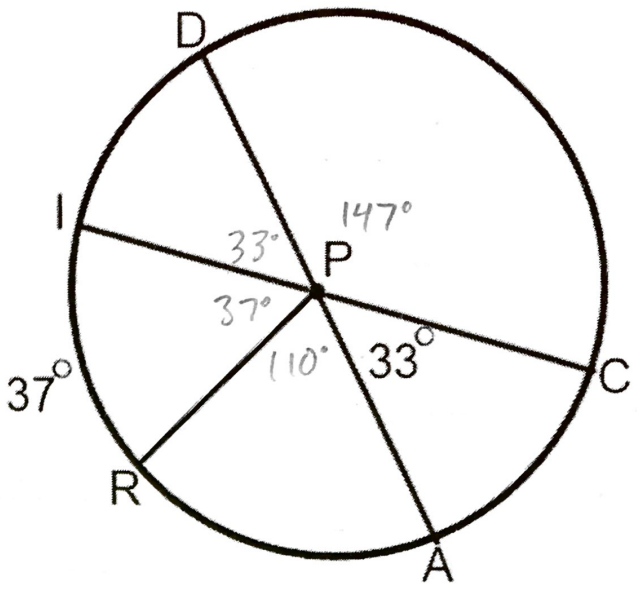
10. $(x+2)^2+(y-4)^2=4$

Center: $(-2,4)$

Radius: 2



Use the figure of circle P at right to find the missing arc or angle measures.



12. $m\widehat{AC}$ = 33°

13. $m\widehat{RA}$ = 110°

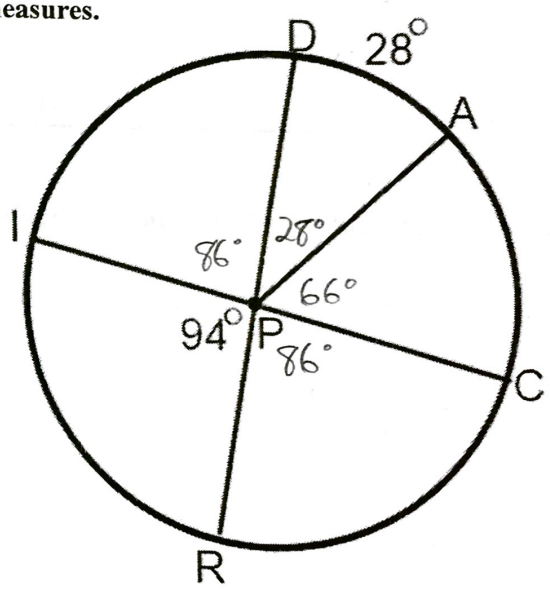
14. $m\angle DPI$ = 33°

15. $m\angle CPD$ = 147°

16. $m\widehat{CDR}$ = 217°

17. $m\widehat{AI}$ = 147°

Use the figure of circle P at right to find the missing arc or angle measures.



18. $m\widehat{RC}$ = 86°

19. $m\widehat{ID}$ = 86°

20. $m\angle CPR$ = 86°

21. $m\angle APR$ = 152°

22. $m\widehat{IA}$ = 114°

23. $m\widehat{RIA}$ = 208°

24. **Write equation of a circle with center (-8, 9) and radius 7.**

$(x+8)^2 + (y-9) = 49$

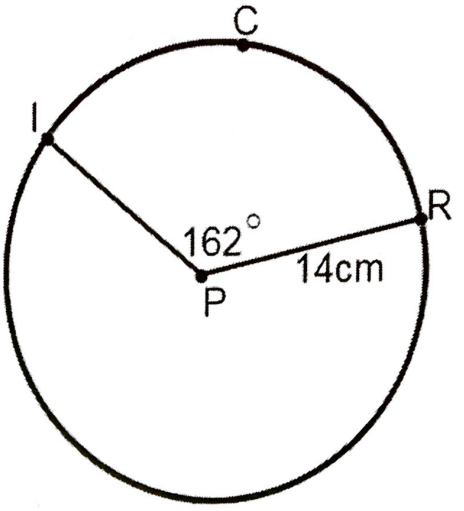
25. **Write equation of a circle with center (24, -13) and radius 13.**

$(x-24)^2 + (y+13)^2 = 169$

For 26-27, find the arc length of the following.

26. Exact arc length of $\overset{\frown}{ICR}$: 12.6π cm

Approximate arc length of $\overset{\frown}{ICR}$: 39.6 cm

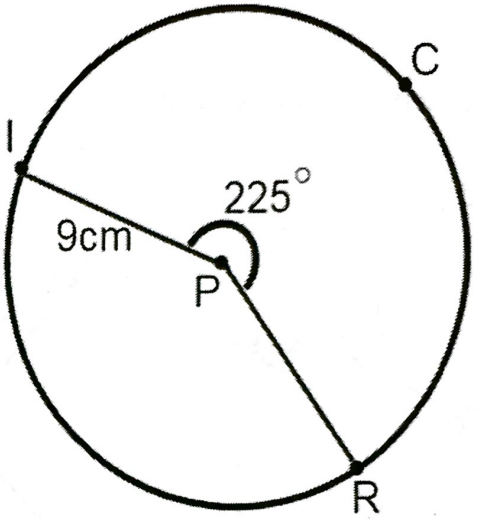


Circumference $= 28\pi$

Length $= \frac{162}{360} \cdot 28\pi = 12.6\pi$

27. Exact arc length of $\overset{\frown}{ICR}$: 11.25π cm

Approximate arc length $\overset{\frown}{ICR}$: 35.3 cm

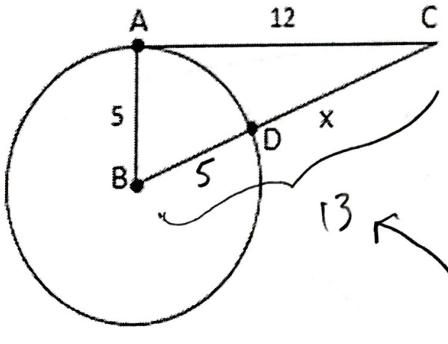


$C = 18\pi$

Length $= \frac{225}{360} \cdot 18\pi$

Solve for the value of x.

28.



$5^2 + 12^2 = BC^2$

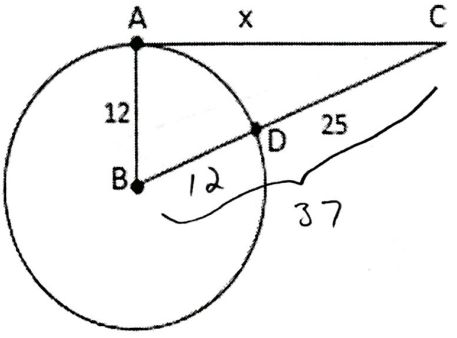
$169 = BC^2$

$13 = BC$

$x + 5 = 13$

$\boxed{x = 8}$

29.



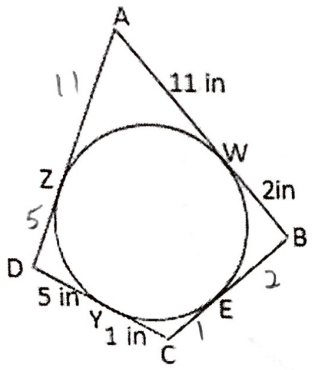
$x^2 + 12^2 = 37^2$

$x^2 + 144 = 1369$

$x^2 = 1225$

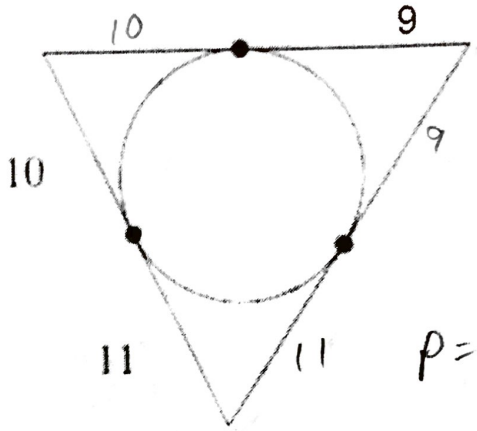
$\boxed{x = 35}$

30. Find the perimeter of quadrilateral ABCD.



$P = 38$ in

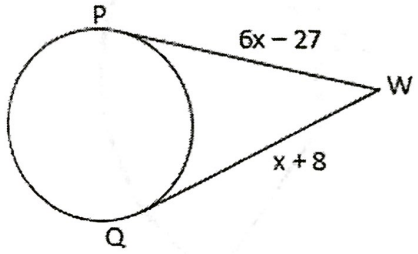
31. Find the perimeter of the triangle.



$P = 60$

Find the value of the following variables.

32.



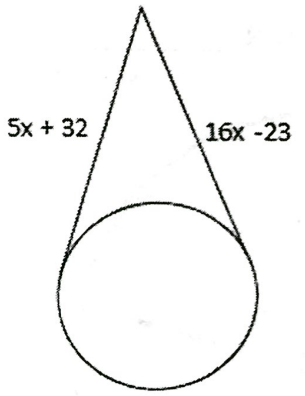
$6x - 27 = x + 8$

$5x - 27 = 8$

$5x = 35$

$\boxed{x = 7}$

33.



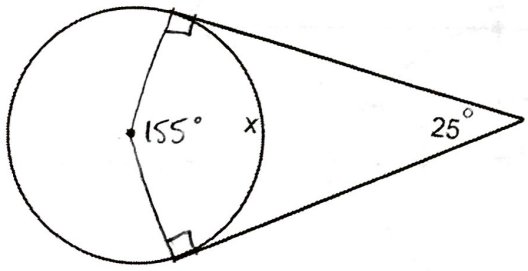
$5x + 32 = 16x - 23$

$32 = 11x - 23$

$55 = 11x$

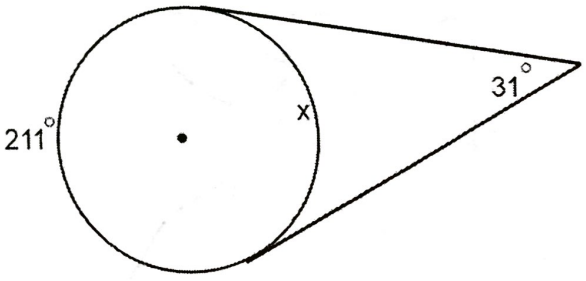
$\boxed{5 = x}$

34.



$x = 155°$

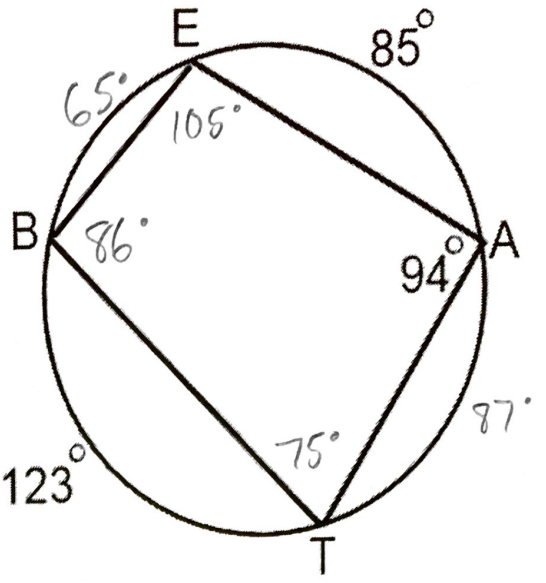
35.



$x = 360 - 211$

$x = 149°$

Find the following missing measures.



36. $m\angle TBE =$ 86°

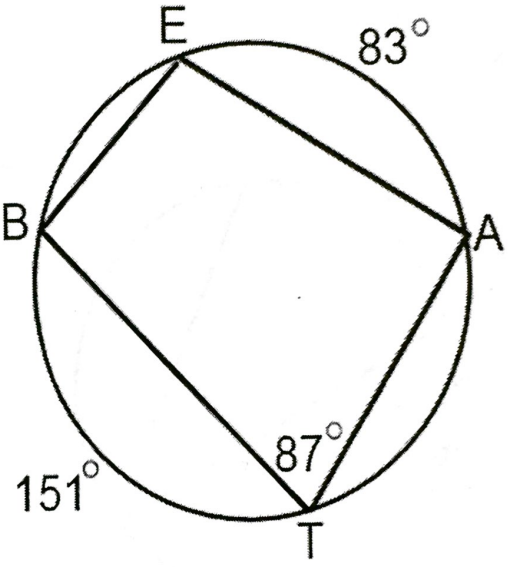
37. $m\widehat{AT} =$ 87°

38. $m\widehat{BE} =$ 65°

36. $m\angle ATB =$ 75°

39. $m\angle BEA =$ 105°

Find the following missing measures.



36. $m\angle TBE =$ 59°

37. $m\widehat{AT} =$ 35°

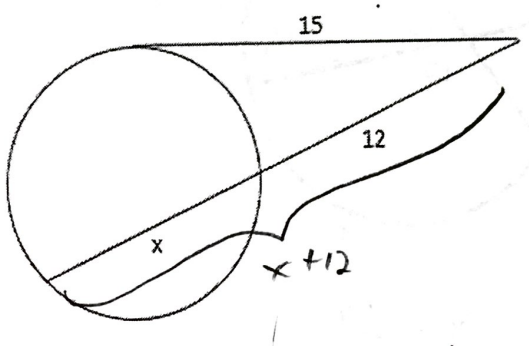
38. $m\widehat{BE} =$ 91°

36. $m\angle ATB =$ 87°

39. $m\angle BEA =$ 93°

Find the value of the following variables.

40.



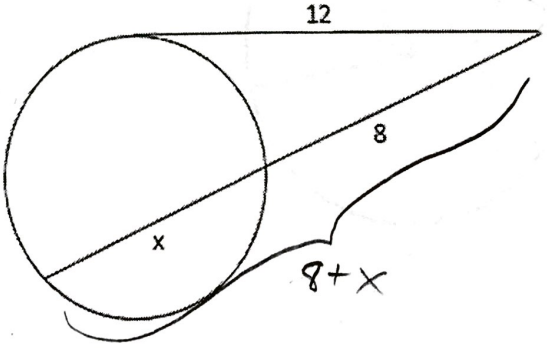
$15^2 = 12(x+12)$

$225 = 12x + 144$

$81 = 12x$

$6.75 = x$

41.



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

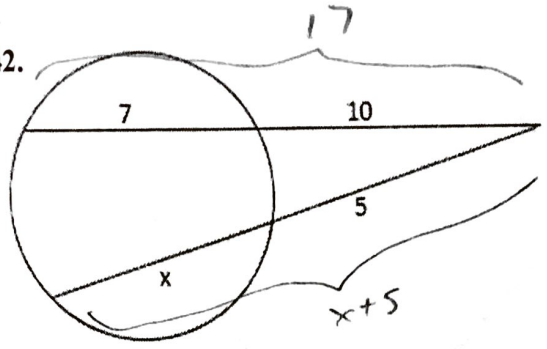
$144 = 64 + 8x$

$80 = 8x$

$10 = x$

Find the value of the following variables.

42.



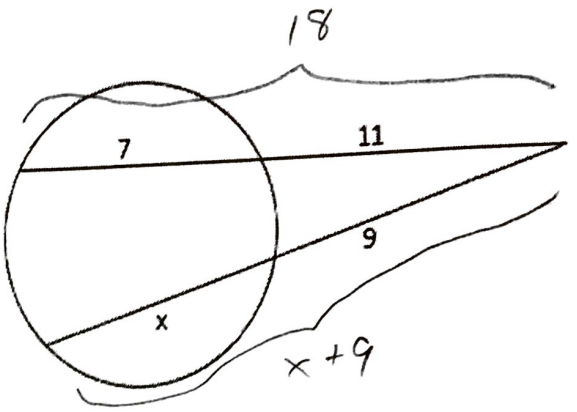
$10 \cdot 17 = 5(x+5)$

$170 = 5x + 25$

$145 = 5x$

$\boxed{29 = x}$

43.



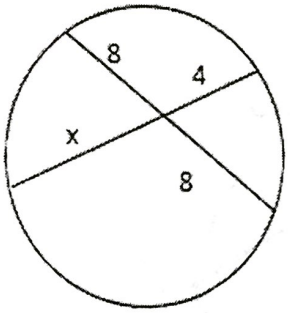
$11 \cdot 18 = 9(x+9)$

$198 = 9x + 81$

$117 = 9x$

$\boxed{13 = x}$

44.

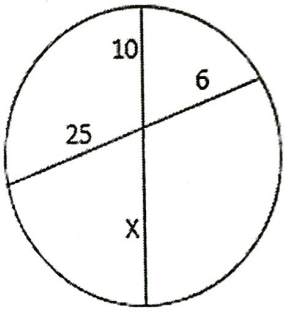


$4x = 8 \cdot 8$

$4x = 64$

$\boxed{x = 16}$

45.

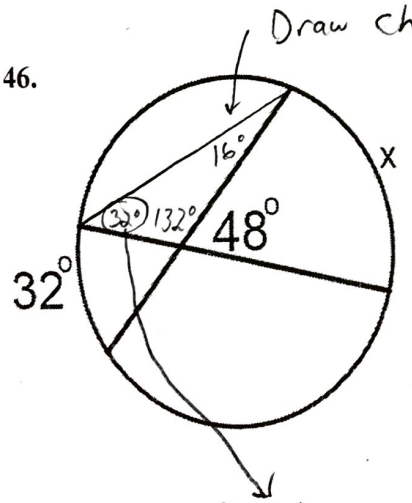


$10x = 25 \cdot 6$

$10x = 150$

$\boxed{x = 15}$

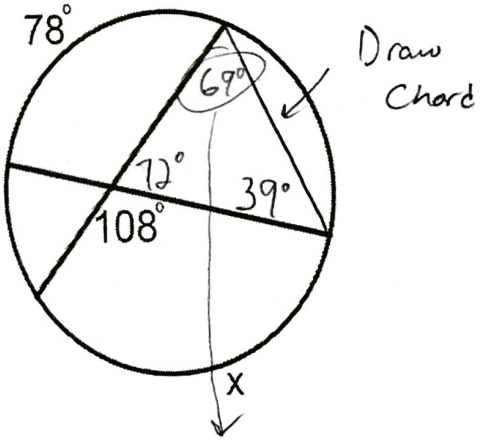
46.



$x = 2 \cdot 32$

$x = 64°$

47.

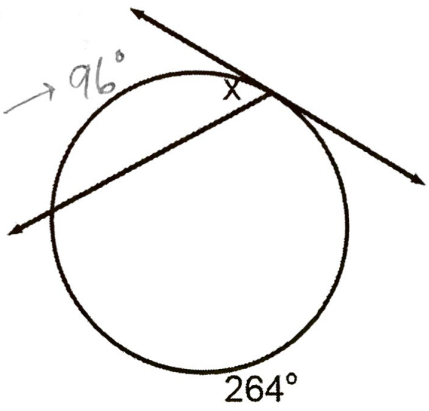


$x = 69.2$

$x = 138°$

Find the value of the following variables.

48.

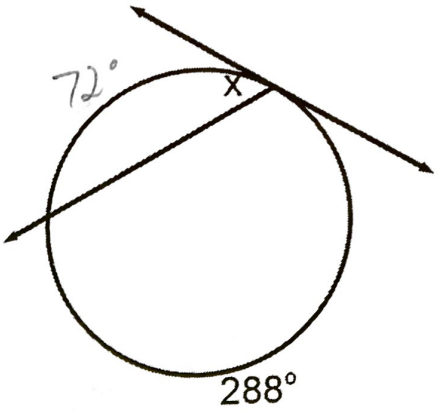


$360 - 264 = 96$

x is half of $96°$

$x = 48°$

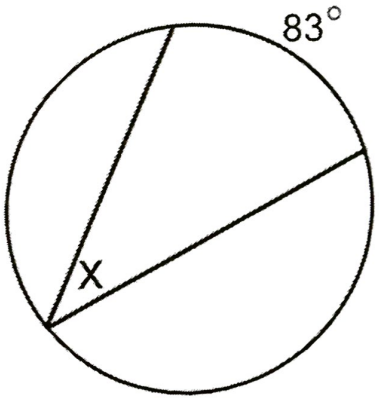
49.



$x = \frac{1}{2} \cdot 72$

$x = 36°$

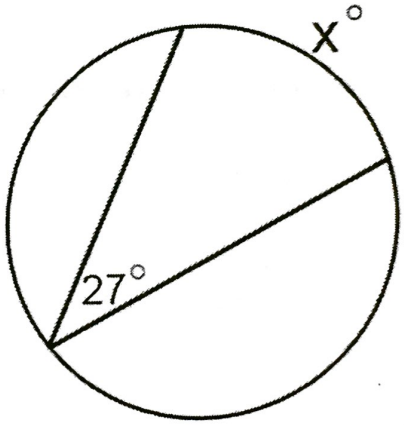
50.



$x = \frac{1}{2} \cdot 83$

$x = 41.5°$

51.



$x = 2 \cdot 27$

$x = 54$