

Name: _____

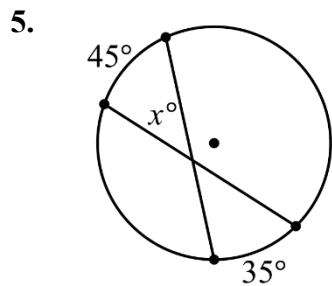
Period: _____

SM2H 6.3 Inscribed Angles, Chord, Tangent and Secant Theorems

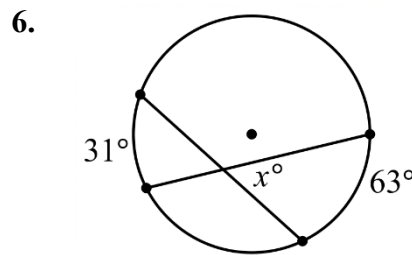
Complete the statement.

1. A(n) _____ angle is an angle whose vertex is on a circle and whose sides contain chords of the circle.
2. If an angle is inscribed in a circle, then its measure is _____ the measure of its intercepted arc.
3. If a triangle inscribed in a circle is a right triangle, then the hypotenuse is a _____ of the circle.
4. If a quadrilateral can be inscribed in a circle, then its _____ angles are supplementary.

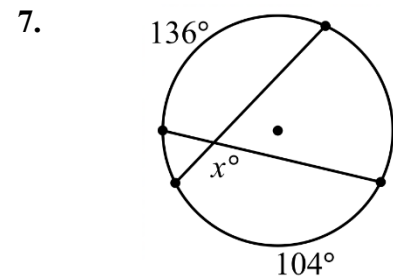
Find the value of x.



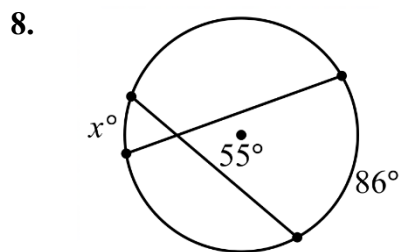
$x =$



$x =$

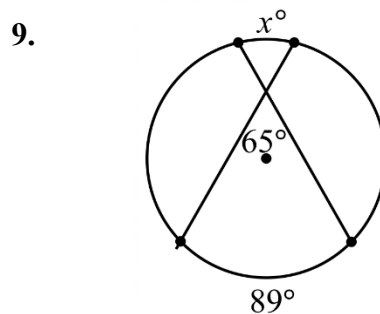


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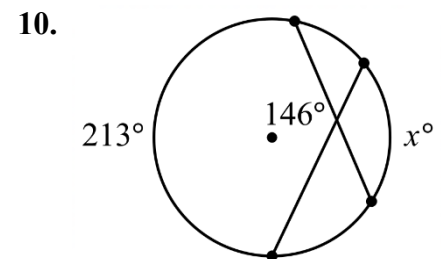
$x =$

Why?



$x =$

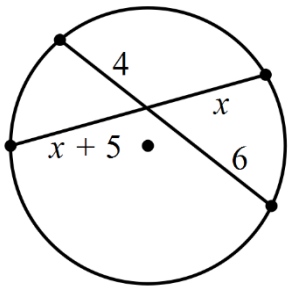
Why?



$x =$

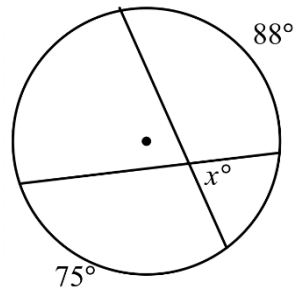
Why?

11.



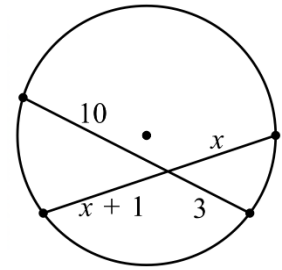
$x =$

12.



$x =$

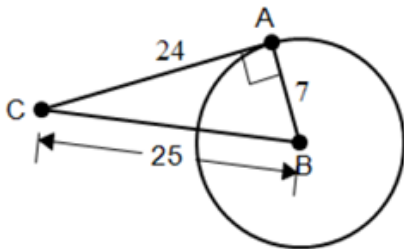
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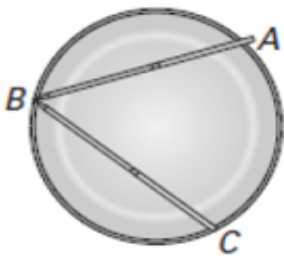
$x =$

Why?

14. Prove that radius $\overline{AB} \perp \overline{AC}$ using the Pythagorean Theorem.



In the picture below, two chopsticks form $\angle ABC$ on a circular plate.

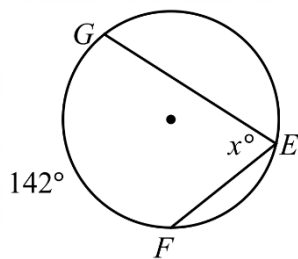


15. If $m\angle ABC = 54^\circ$, find the $m\widehat{AC}$

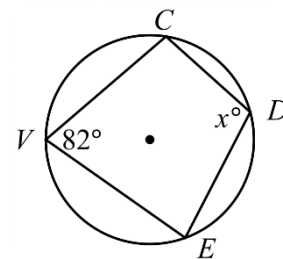
16. $m\widehat{AC} = 106^\circ$ and $m\angle ABC = (3x + 8)^\circ$, find the value of x

Find the measure of the indicated arc or angle.

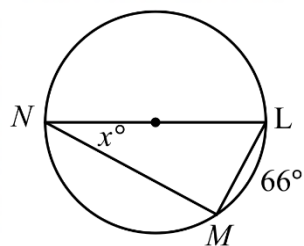
17. $x =$
Why?



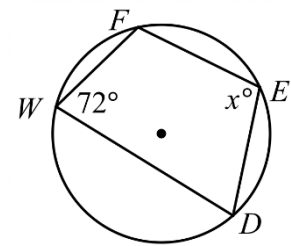
18. $x =$
Why?



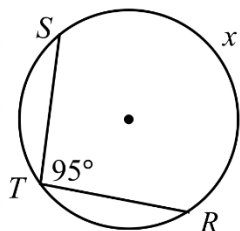
19. $x =$



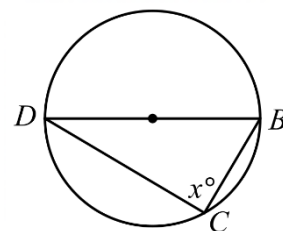
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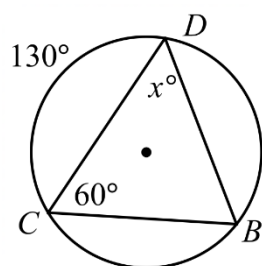
21. $x =$



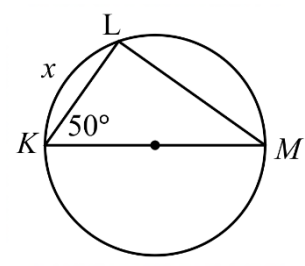
22. $x =$



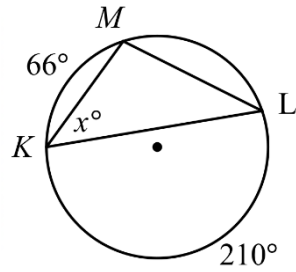
23. $x =$
Why?



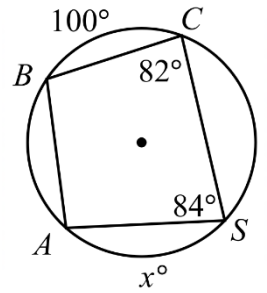
24. $x =$



25. $x =$



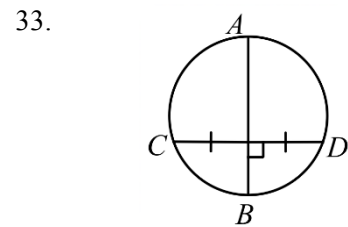
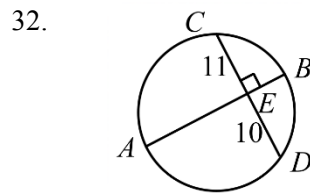
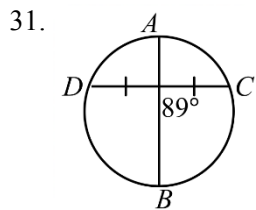
26. $x =$



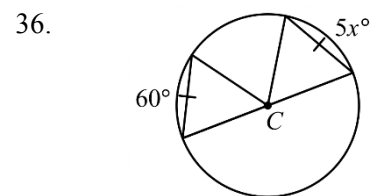
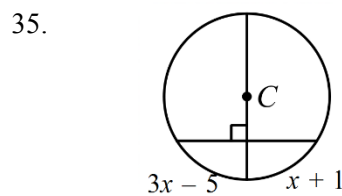
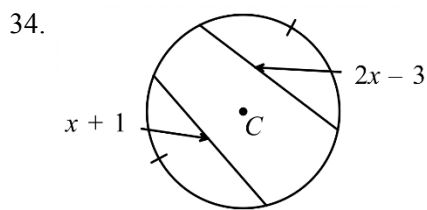
Complete the statement.

27. If a diameter of a circle is _____ to a chord, then the diameter bisects the chord and its arc.
28. If one chord is a perpendicular bisector of another chord, then the first chord is a _____.
29. In the same circle, or congruent circles, if two chords are congruent, then their corresponding minor arcs are _____.
30. If two minor arcs of a circle are congruent, then their corresponding _____ are congruent.

Determine whether \overline{AB} is a diameter of the circle. Explain your reasoning.



Find the value of x .

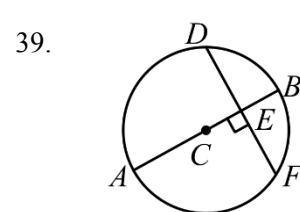
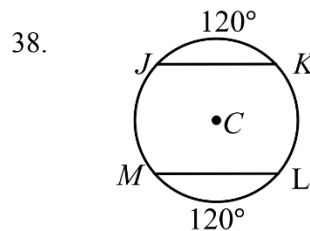
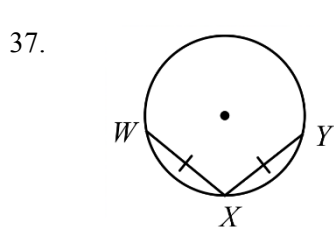


$x =$

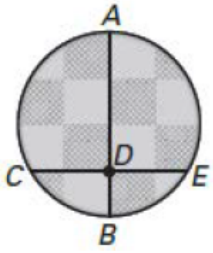
$x =$

$x =$

Name any congruent arcs or chords. State a theorem that justifies your answer.



Use the following diagram to answer questions 40-42. The circular button shown has chords \overline{AB} and \overline{CE} . $\overline{AB} \perp \overline{CE}$ and $\overline{CD} \cong \overline{DE}$.



40. Identify a diameter of the circle.

41. Is \overline{CE} a diameter of the circle? Explain.

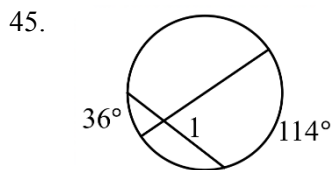
42. Name a pair of congruent arcs.

Complete the statement.

43. If two chords intersect inside a circle, then the measure of each angle formed is one half the _____ of the measures of the arcs intercepted by the angle and its vertical angle.

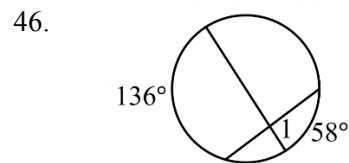
44. If two chords intersect inside a circle, then the _____ of the lengths of the segments of one chord is equal to the _____ of the lengths of the segments of the other chord.

Find the measure of $\angle 1$.

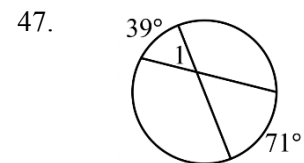


$m\angle 1 =$

Why?

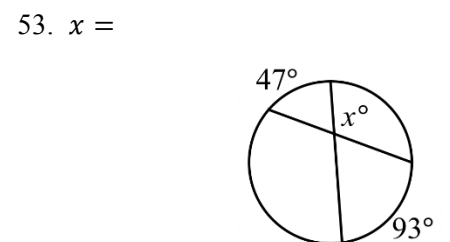
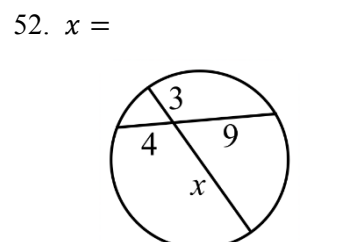
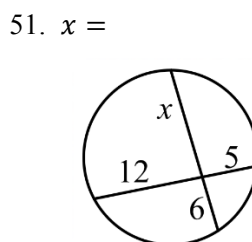
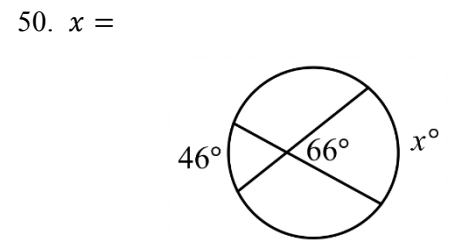
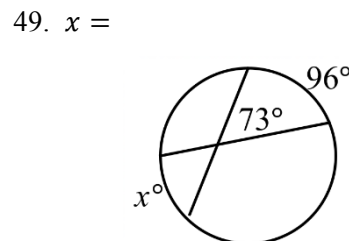
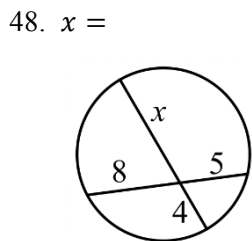


$m\angle 1 =$



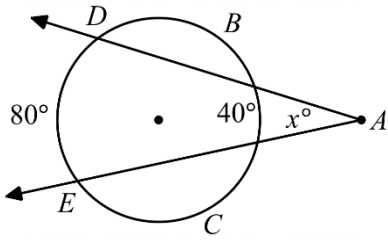
$m\angle 1 =$

Find the value of x .

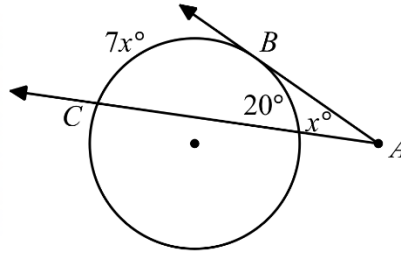


Find the value of x . Assume lines that appear tangent are tangent. Show all work.

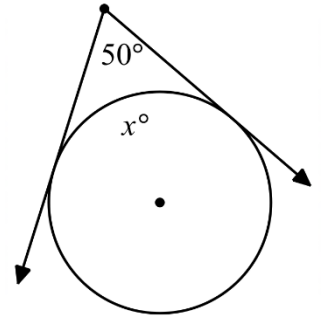
54. $x =$



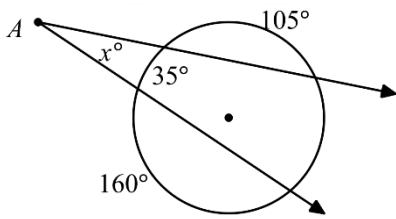
55. $x =$



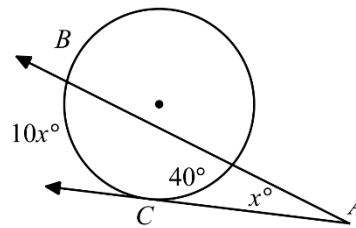
56. $x =$



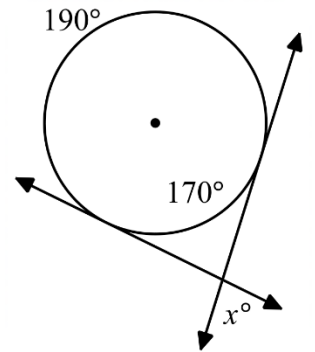
57. $x =$



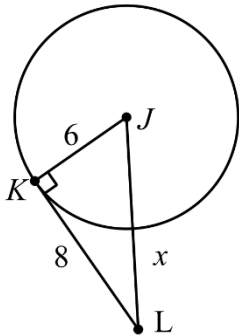
58. $x =$



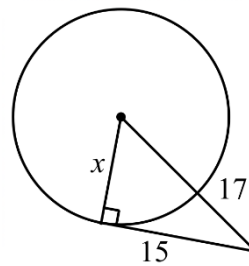
59. $x =$



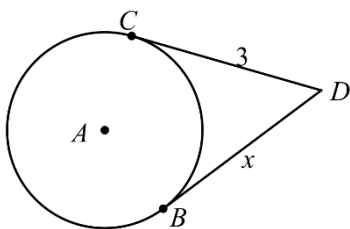
60. $x =$



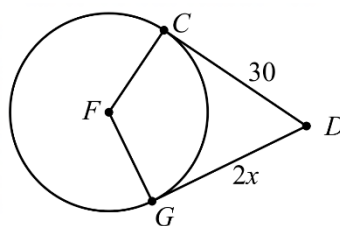
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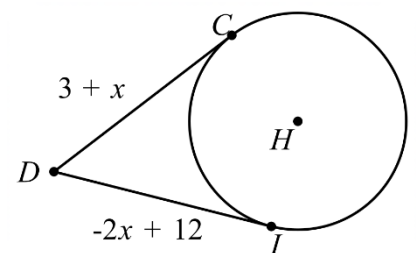
62. $x =$



63. $x =$

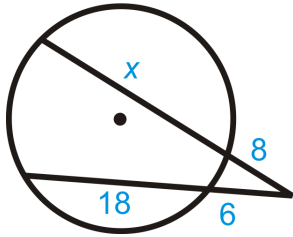


64. $x =$

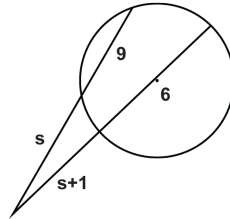


Find the value of the missing variable. Assume lines that appear tangent are tangent. Show all work.

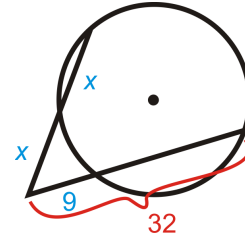
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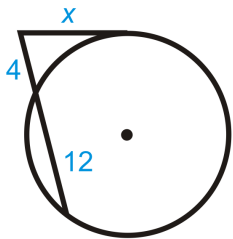
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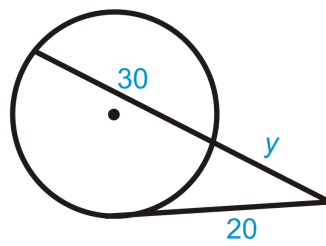
67.



68.



69.



70.

