

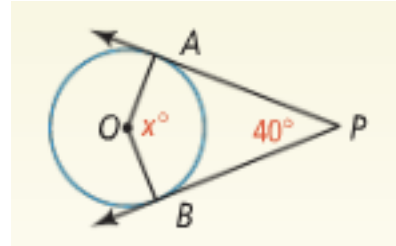
Name: \_\_\_\_\_  
 Geometry

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### Circles Study Guide

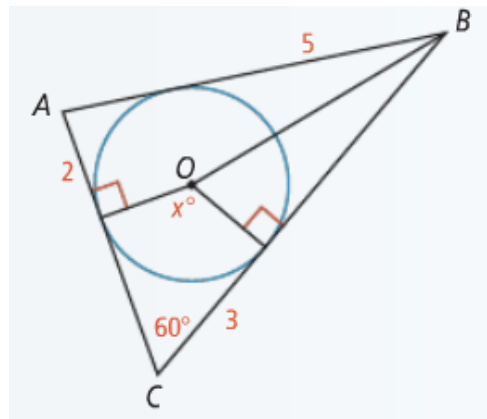
**LT#1:** Use properties of a tangent to a circle.

1.  $\overrightarrow{PA}$  and  $\overrightarrow{PB}$  are tangents. Find  $x$ .



Use  $\odot O$  for #2-4.

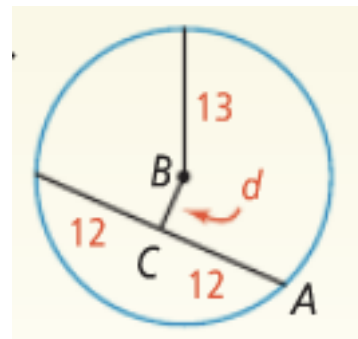
2. What is the perimeter of  $\triangle ABC$ ?
3.  $OB = \sqrt{28}$ . What is the radius?
4. What is the value of  $x$ ?



**LT#2:** Use congruent chords, arcs, and central angles.

**LT#3:** Use perpendicular bisectors to chords.

5. What is the value of  $d$ ?

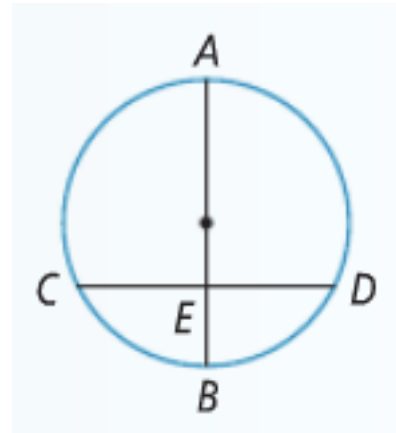


Use the figure at the right for #6-8.

6. If  $\overline{AB}$  is a diameter and  $CE = ED$ , then  $m\angle AEC = \underline{\hspace{2cm}}$ .

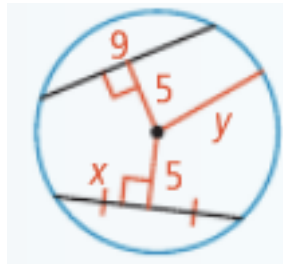
7. If  $\overline{AB}$  is a diameter and is perpendicular to  $\overline{CD}$ , what is the ratio of  $CD$  to  $DE$ ?

8. If  $CE = \frac{1}{2}CD$  and  $m\angle DEB = 90$ , what is true of  $\overline{AB}$ ?



Use the circle below for #9 and #10.

9. What is the value of  $x$ ?



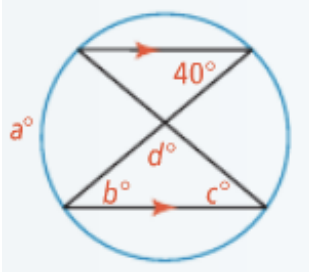
10. What is the value of  $y$ ?

**LT#4:** Find the measure of an inscribed angle.

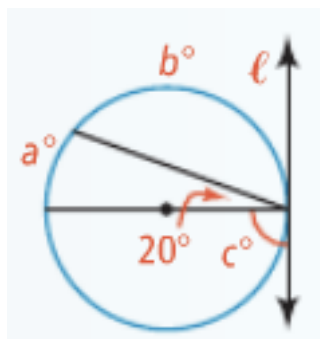
**LT#5:** Find the measure of an angle formed by a tangent and a chord.

Find the value of each variable. Line  $l$  is a tangent.

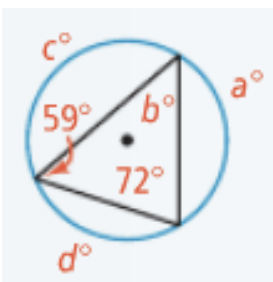
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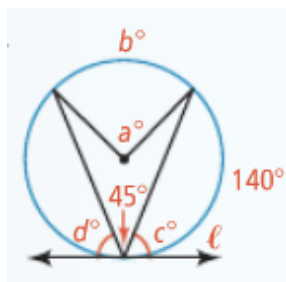
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13.



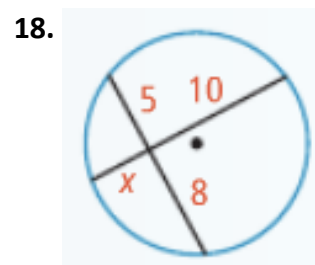
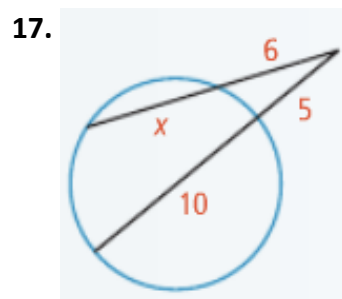
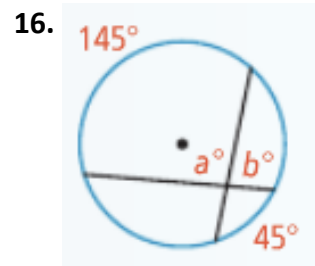
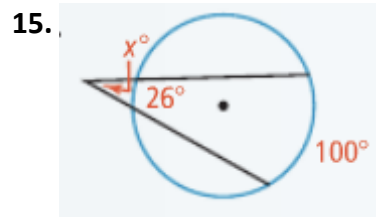
14.



**LT#6:** Find measures of angles formed by chords, secants, and tangents.

**LT#7:** Find the lengths of segments associated with circles.

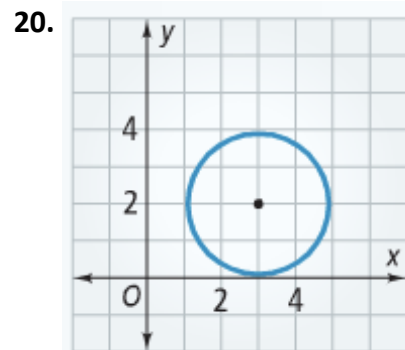
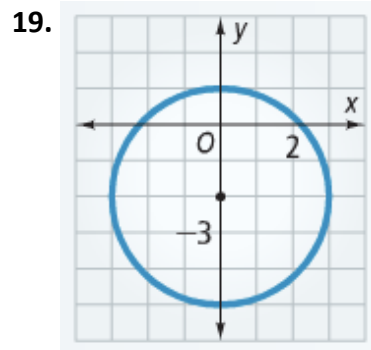
**Find the value of each variable.**



**LT#8:** Write the equation of a circle.

**LT#9:** Find the center and radius of a circle.

**Write the standard equation of each circle below.**



21. What is the standard equation of the circle with radius 5 and center  $(-3, -4)$ ?

22. What is the standard equation of the circle with center  $(1,1)$  that passes through  $(-2,4)$ ?

23. What are the center and radius of the circle with equation  $(x - 7)^2 + (y + 5)^2 = 36$ ?

**LT#10:** Draw and describe a locus.

**Sketch and describe each locus of points.**

24. The set of all points in a plane that are in the interior of an angle and equidistant from the sides of the angle.

25. The set of all points in a plane that are 5 cm from a circle with radius 2 cm.

26. The set of all points in a plane at a distance 8 in. from a given line.

27. The set of all point in space that are a distance 6 in. from  $\overline{AB}$ .