

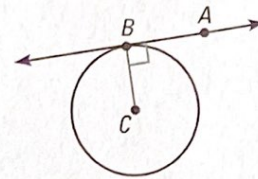
6

11.2 Exercises

Guided Practice

Vocabulary Check

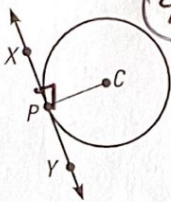
1. Complete the statement: In the diagram at the right, \overleftrightarrow{AB} is ? to $\odot C$, and point B is the ?.



TANGENT
POINT OF TANGENCY

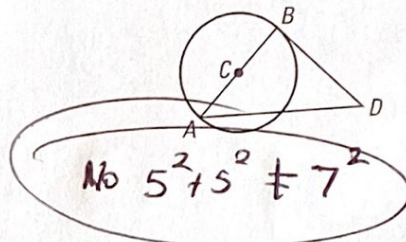
Skill Check

2. In the diagram below, \overleftrightarrow{XY} is tangent to $\odot C$ at point P. What is $m\angle CPX$? Explain.



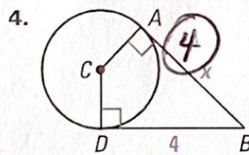
90°

3. In the diagram below, $AB = BD = 5$ and $AD = 7$. Is \overline{BD} tangent to $\odot C$? Explain.

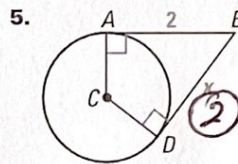


No $5^2 + 5^2 \neq 7^2$

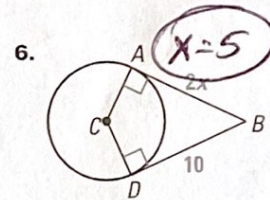
\overline{AB} is tangent to $\odot C$ at A and \overline{DB} is tangent to $\odot C$ at D. Find the value of x.



4



2



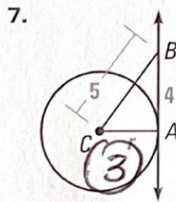
$x=5$

Practice and Applications

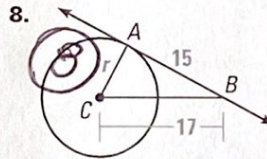
Extra Practice

See p. 695.

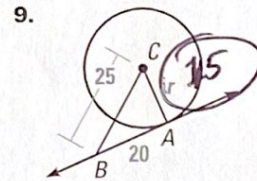
Finding Segment Lengths \overleftrightarrow{AB} is tangent to $\odot C$. Find the value of r.



3



8

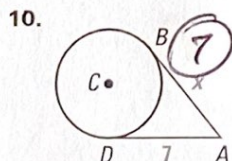


15

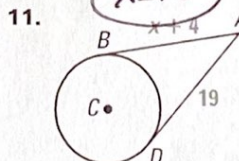
Homework Help

- Example 1: Exs. 7–9, 27
- Example 2: Exs. 13–19
- Example 3: Exs. 20–21
- Example 4: Exs. 10–12, 22–26

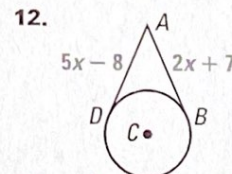
Finding Segment Lengths \overline{AB} and \overline{AD} are tangent to $\odot C$. Find the value of x.



7



$x=15$



$5x-8=2x+7$
 $3x=15$ $x=5$

27y Using Algebra Square the binomial.

13. $(x+2)^2$ 14. $(x+4)^2$ 15. $(x+7)^2$ 16. $(x+12)^2$

Student Help
CLASSZONE.COM

HOMEWORK HELP

Extra help with problem solving in Exs. 17–19 is at classzone.com

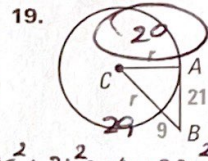
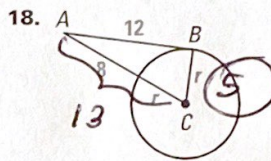
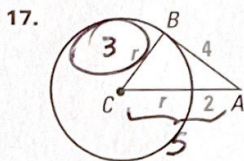
17. $r^2 + 16 = (r+2)^2$
 $r^2 + 16 = r^2 + 4r + 4$
 $12 = 4r$

$r = 3$

18. $r^2 + 144 = (r+8)^2$
 $r^2 + 144 = r^2 + 16r + 64$
 $80 = 16r$

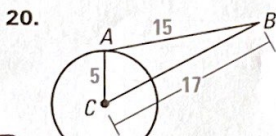
$r = 5$

Finding the Radius of a Circle \overline{AB} is tangent to $\odot C$. Find the value of r .

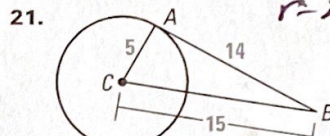


$r^2 + 21^2 = (r+9)^2$
 $r^2 + 441 = r^2 + 18r + 81$
 $360 = 18r$

Verifying Tangents Tell whether \overline{AB} is tangent to $\odot C$. Explain your reasoning.



$No: 5^2 + 15^2 \neq 17^2$



$No: 5^2 + 14^2 \neq 15^2$

Finding Congruent Parts In Exercises 22–24, \overline{AB} and \overline{AD} are tangent to $\odot C$.

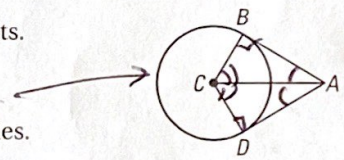
22. Name all congruent segments.

$\overline{BC} = \overline{BD}, \overline{AC} = \overline{AD}$

23. Name all congruent angles.

24. Name two congruent triangles.

$\triangle ABC \cong \triangle ADC$

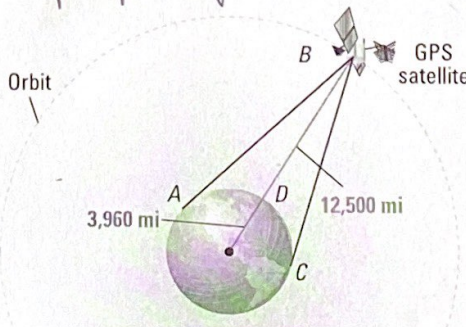


Visualize It! In Exercises 25 and 26, $\odot L$ has radii \overline{LJ} and \overline{LK} that are perpendicular. \overline{KM} and \overline{JM} are tangent to $\odot L$.

25. Sketch $\odot L$, \overline{LJ} , \overline{LK} , \overline{KM} , and \overline{JM} .

26. Is $\triangle JLM$ congruent to $\triangle KLM$? Explain your reasoning.

27. **Global Positioning System** GPS satellites orbit 12,500 miles above Earth. Because GPS signals can't travel through Earth, a satellite can transmit signals only as far as points A and C from point B. Find BA and BC to the nearest mile.



Link to Science



GPS Hikers sometimes carry navigation devices which utilize GPS technology. GPS helps hikers calculate where they are and how to get to another location.

Application Links
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