

Basic Terms; Tangents

For use after Section 9-2

Exercises 1-6 refer to $\odot O$. Name each of the following.

1. Two radii \overline{OB} \overline{OT}

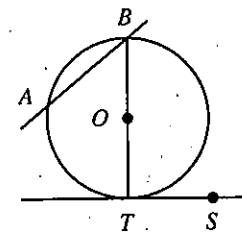
2. A diameter \overline{BT}

3. A secant \overleftrightarrow{AB}

4. A tangent \overleftrightarrow{TS} \overleftrightarrow{DR} \overleftrightarrow{TS}

5. Two chords \overline{AB} \overline{BT}

6. A point of tangency T



Exercises 7-11 refer to $\odot B$ with radius BP . Complete.

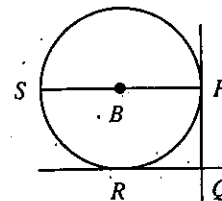
7. If $BP = 4$, then $SP =$ 8.

8. If $SP = 16n$, then $BP =$ $8n$.

9. If \overleftrightarrow{PQ} is tangent to $\odot B$, then $m\angle BPQ =$ 90° .

10. If \overleftrightarrow{PQ} and \overleftrightarrow{RQ} are tangent to $\odot B$, then $\overline{RQ} \cong$ \overline{QP} .

11. If \overleftrightarrow{RQ} is tangent to $\odot B$, then \overline{BR} would be perpendicular to \overleftrightarrow{RQ} .

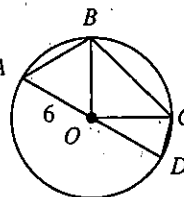


Exercises 12-14 refer to $\odot O$.

12. If $m\angle AOB = 60$, then $AB =$ 6 (\cong radii \rightarrow eq. Δ)

13. If $m\angle BOC = 90$, then $BC =$ $6\sqrt{2}$ ($45-45-90\Delta$)

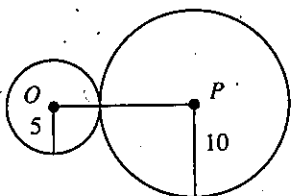
14. Name an inscribed polygon in the figure. quadrilateral ABCD



In Exercises 15-17, O and P are the centers of the circles.

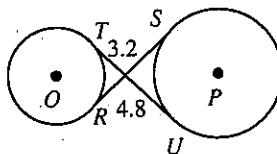
In Exercise 16, \overleftrightarrow{RS} and \overleftrightarrow{TU} are tangent to both circles and \overleftrightarrow{RS} divides \overleftrightarrow{TU} into segments whose lengths are shown.

15.



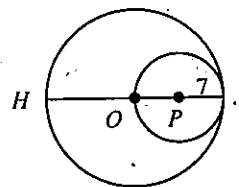
$OP =$ 15 ($5+10$)

16.



$RS =$ 8

17.



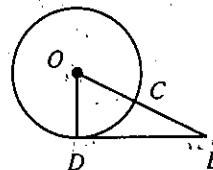
$HI =$ 28

In the diagram for Exercises 18-20, \overline{ED} is tangent to $\odot O$.

18. If $DE = 12$ and $DO = 9$, then $OE =$ 15.

19. If $m\angle DOE = 60$ and $OD = 9$, then $OE =$ 18.

20. If $DO = 5$ and $CE = 8$, then $DE =$ 12.



Exs. 18-20

(18) $12^2 + 9^2 = OE^2$

(20) $5^2 + DE^2 = (8+5)^2$