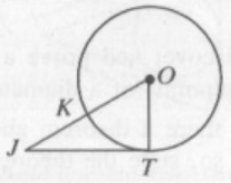
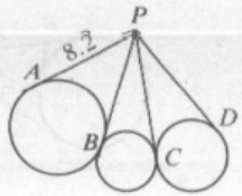
Written Exercises

$\overline{JT}$ is tangent to $\odot O$ at T. Complete.

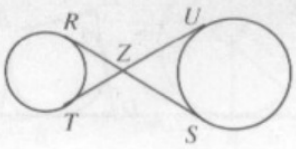
1. If $OT = 6$ and $JO = 10$, then $JT =$?.
2. If $OT = 6$ and $JT = 10$, then $JO =$?.
3. If $m\angle TOJ = 60$ and $OT = 6$, then $JO =$?.
4. If $JK = 9$ and $KO = 8$, then $JT =$?.



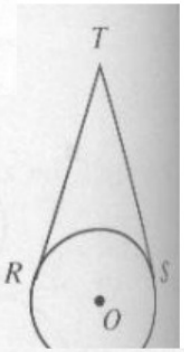
5. The diagram below shows tangent lines and circles. Find PD.



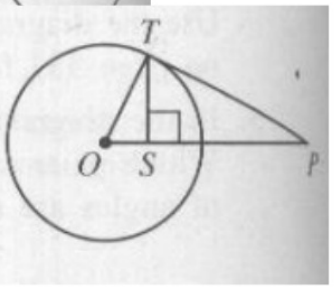
6. $\overline{RS}$ and $\overline{TU}$ are common internal tangents to the circles. If $RZ = 4.7$ and $ZU = 7.3$, find RS and TU.



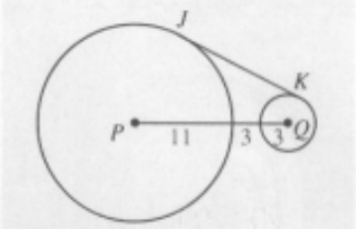
8. Given: $\overline{TR}$ and $\overline{TS}$ are tangents to $\odot O$ from T;
   $m\angle RTS = 36$
   a. Copy the diagram. Draw $\overline{RS}$ and find $m\angle TSR$ and $m\angle TRS$.
   b. Draw radii $\overline{OS}$ and $\overline{OR}$ and find $m\angle ORS$ and $m\angle OSR$.
   c. Find $m\angle ROS$.



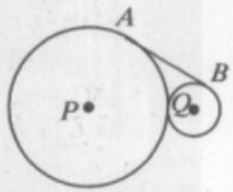
10. Given: $\overline{PT}$ is tangent to $\odot O$ at T; $\overline{TS} \perp \overline{PO}$
    Complete the following statements.
    a. TS is the geometric mean between ? and ?.
    b. TO is the geometric mean between ? and ?.
    c. If $OS = 6$ and $SP = 24$, $TS =$? and $TP =$?.



17. $\overline{JK}$ is tangent to $\odot P$ and $\odot Q$. $JK =$? (*Hint*: What kind of quadrilateral is $JPQK$?)



18. Circles P and Q have radii 6 and 2 and are tangent to each other. Find the length of their common external tangent $\overline{AB}$. (*Hint*: Draw $\overline{PQ}$, $\overline{PA}$, and $\overline{QB}$.)



HW 9.2

- Pg. 335 (CE)1-3, 5
- Pg. 335 (WE): # 1-6, 8a-c 10, 17, 18
- Pg. 337 (M-R-E): #1-3

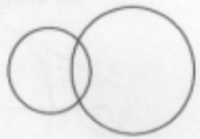
Classroom Exercises

1. How many common external tangents can be drawn to the two circles?

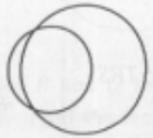
a.

b.

c.



d.



e.

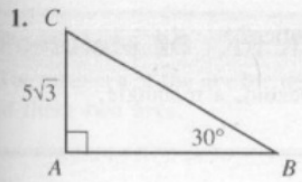
f.

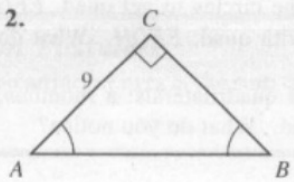
2. How many common internal tangents can be drawn to each pair of circles in Exercise 1 above?

3. **a.** Which pair of circles shown above are externally tangent?
   b. Which pair are internally tangent?

Mixed Review Exercises

Find *AB*. In Exercise 3, $\overline{CB}$ is tangent to $\odot A$.

1. 

2. 

3.