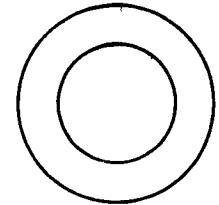
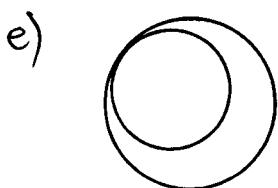
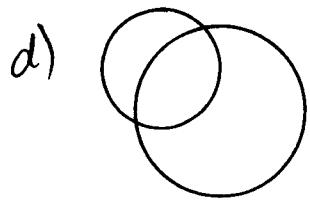
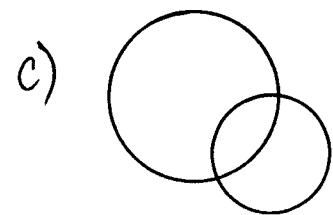
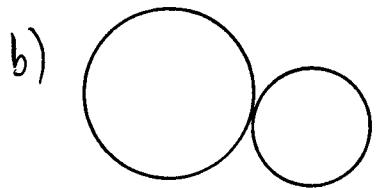
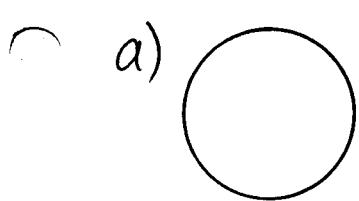
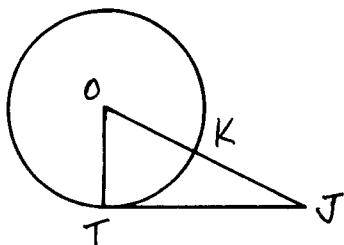


11-1

TANGENTS



1. How many common external tangents can be drawn to each pair of circles?
2. How many common internal tangents can be drawn to each pair of circles?
3. Which pair(s) of circles shown above is/are externally tangent to each other?
4. Which pair(s) of circles shown above is/are internally tangent to each other?



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

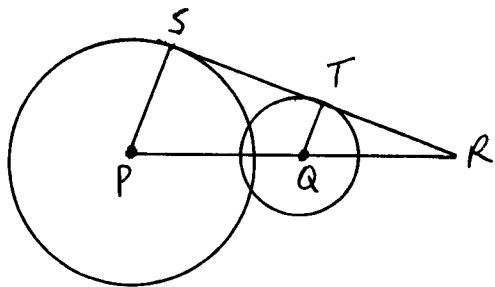
5. If $OT = 6$ and $JO = 10$ then $JT = \underline{\hspace{2cm}}$

6. If $OT = 6$ and $m\angle TOJ = 60^\circ$ then $JO = \underline{\hspace{2cm}}$

7. If $JK = 9$ and $KO = 8$ then $JT = \underline{\hspace{2cm}}$

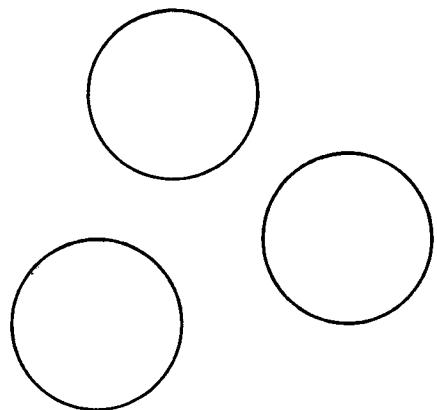
8. If $OT = 3$ and $TJ = 6$ then $KJ = \underline{\hspace{2cm}}$

9. \overline{SR} is tangent to $\odot P$ and $\odot Q$. $QT = 6$, $TR = 8$ and $PR = 30$:



$$PQ = \underline{\quad} \quad PS = \underline{\quad} \quad ST = \underline{\quad}$$

10. How many circles tangent to all 3 circles can be drawn?



* BONUS *

Find the radius of the inscribed circle:

