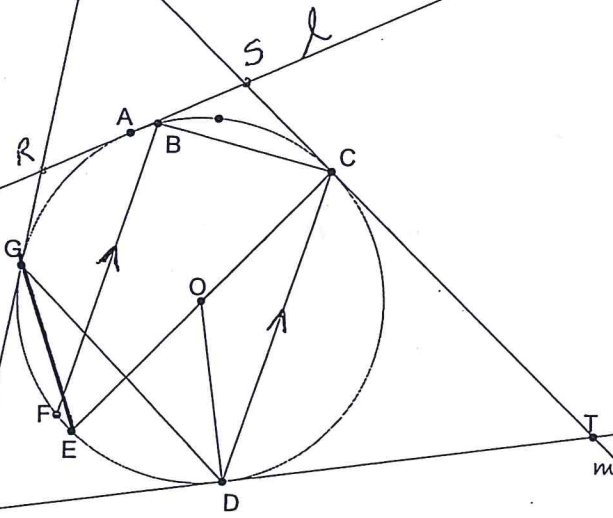


Lines l, m, n, and p are tangent to circle O (O is the center)

$$\begin{aligned} m\widehat{BC} &= 60^\circ \\ \overline{EC} &= 12 \text{ cm} \\ \overline{UR} &= 11 \text{ cm} \\ \overline{SC} &= 6 \text{ cm} \end{aligned}$$

$$\begin{aligned} m\widehat{DC} &= 125^\circ \\ \overline{DT} &= 10 \text{ cm} \\ \overline{RA} &= 4 \text{ cm} \end{aligned}$$



1) $m\angle DOC =$ _____

2) $m\widehat{FD} =$ _____

3) $m\widehat{FE} =$ _____

4) $m\angle DOE =$ _____

5) $m\angle CTD =$ _____

6) $m\angle ECB =$ _____

7) perimeter of DTCO = _____

8) Are \overline{FB} and \overline{CD} congruent?

Why or why not?

9) Are \overline{OC} and \overline{CB} congruent?

Why or why not?

10) perimeter of UTSR = _____

11) $m\angle EGD =$ _____

12) $m\angle DCB =$ _____

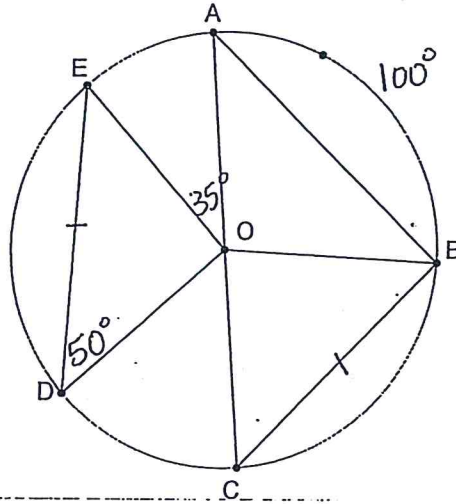
$m\angle EOD =$ _____

$m\angle OBC =$ _____

$m\angle ABC =$ _____

$m\widehat{DC} =$ _____

$m\angle ACB =$ _____



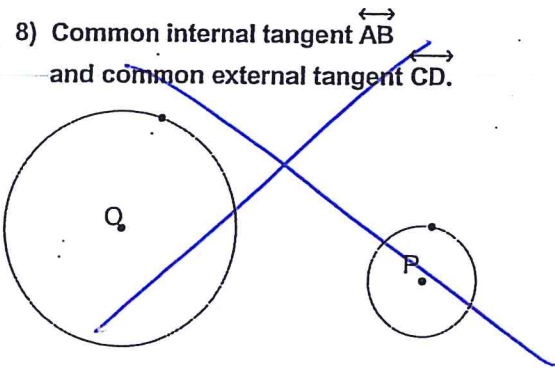
O is the center

Sketch the following:

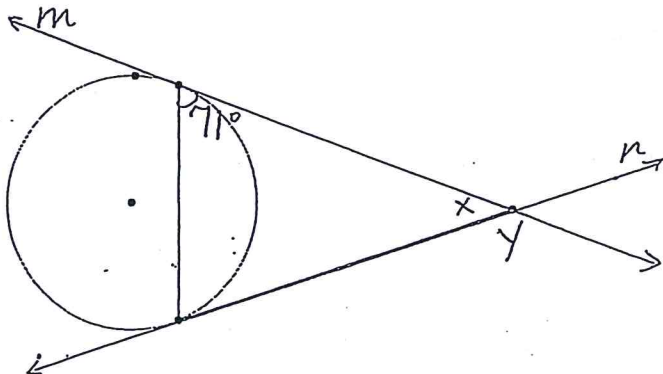
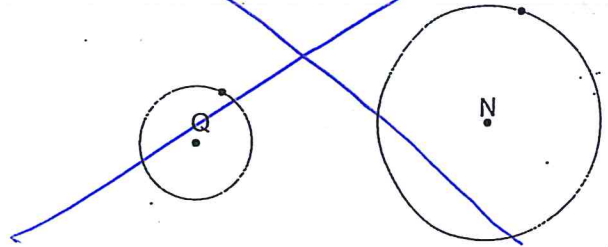
6) Externally tangent circles

7) Internally tangent circles

8) Common internal tangent AB and common external tangent CD.



9) Three externally common tangents to circles Q and N.



10) Lines m and n are tangent lines.

Find x and y.

x =

y =