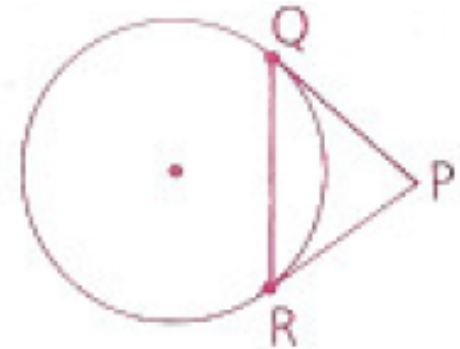


Homework

p. 481: 4, 5, 9, 12, 16, 17

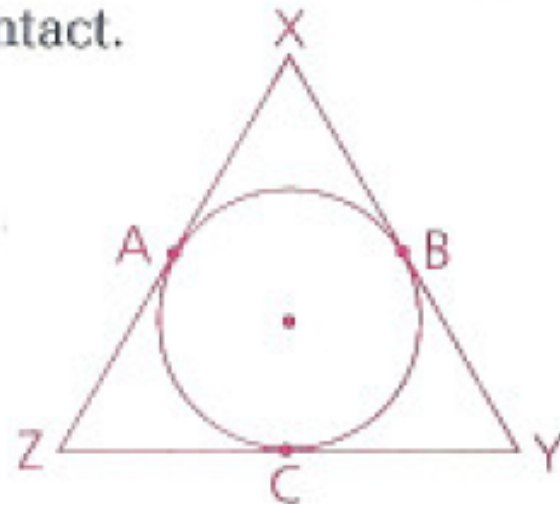
- 4 Given: \overline{PQ} and \overline{PR} are tangent segments.
 $\widehat{QR} = 163^\circ$

Find: **a** $\angle P$
b $\angle PQR$

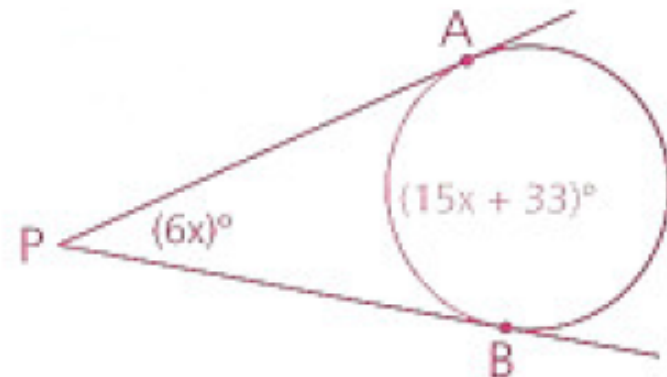


- 5 Given: A, B, and C are points of contact.
 $\widehat{AB} = 145^\circ$, $\angle Y = 48^\circ$

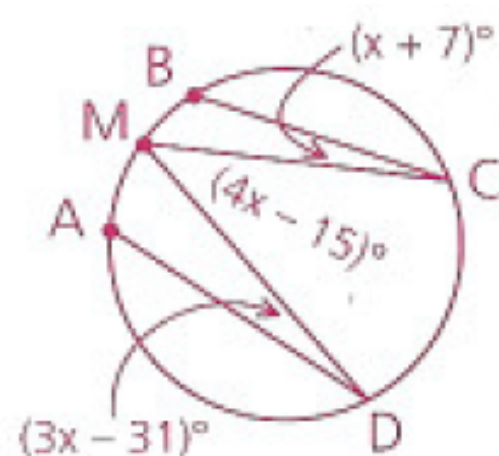
Find: $\angle Z$



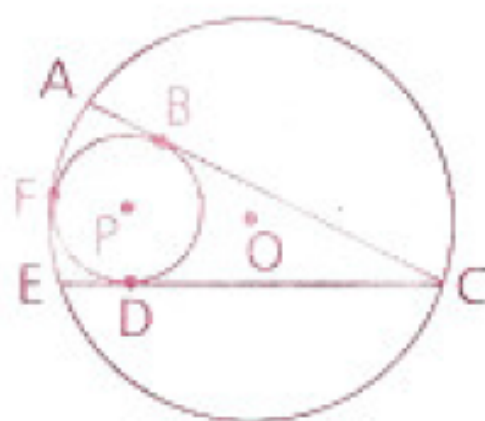
- 9 In the figure shown, find $m\angle P$.



12 M is the midpoint of \widehat{AB} . Find $m\widehat{CD}$.



16 Circles O and P are tangent at F. \overline{AC} and \overline{CE} are tangent to $\odot P$ at B and D. If $\widehat{DFB} = 223^\circ$, find \widehat{AE} .



17 Given: $\angle S = 88^\circ$, $\widehat{QT} = 104^\circ$, $\widehat{ST} = 94^\circ$,
tangent \overline{PQ}

Find: **a** $\angle P$
b $\angle STQ$

