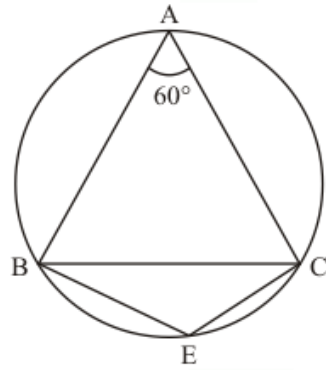




Circles Ex 16.5 Q1

Answer :

It is given that, $\triangle ABC$ is equilateral triangle



We have to find $m\angle BEC$

Since $\triangle ABC$ is equilateral

So $\angle A + \angle B + \angle C = 180^\circ$

And

$\angle A = \angle B = \angle C = 60^\circ \dots\dots (1)$

Now $\triangle BEC$ is a cyclic quadrilateral

So $\angle A + \angle E = 180^\circ$ (by property of cycle quadrilateral opposite angle is 180°)

$60^\circ + \angle E = 180^\circ$

$\angle E = 120^\circ$

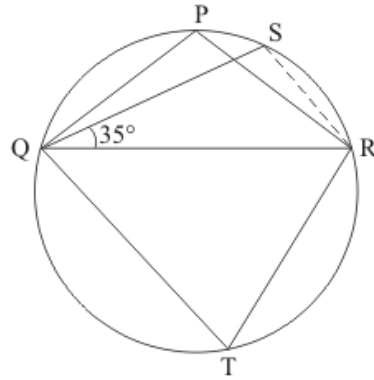
Hence

$$\boxed{m\angle BEC = 120^\circ}$$

Circles Ex 16.5 Q2

Answer :

It is given that $\triangle PQR$ is an isosceles triangle with $PQ = PR$ and $m\angle PQR = 35^\circ$



We have to find the $m\angle QSR$ and $m\angle QTR$

Since $\triangle PQR$ is an isosceles triangle

So $\angle PQR = \angle PRQ = 35^\circ$

Then

$$\begin{aligned}\angle QPR &= 180^\circ - (\angle PQR + \angle PRQ) \\ &= 180^\circ - (35^\circ + 35^\circ) \\ &= 180^\circ - 70^\circ \\ &= 110^\circ\end{aligned}$$

Since $PQTR$ is a cyclic quadrilateral

So

$$\begin{aligned}\angle P + \angle T &= 180^\circ \\ \angle T &= 180^\circ - 110^\circ \\ &= 70^\circ\end{aligned}$$

In cyclic quadrilateral $QSRT$ we have

$$\begin{aligned}\angle S + \angle T &= 180^\circ \\ \angle S &= 180^\circ - 70^\circ \\ &= 110^\circ\end{aligned}$$

Hence

$$\boxed{m\angle QSR = 110^\circ} \text{ and } \boxed{\angle QTR = 70^\circ}$$

***** END *****