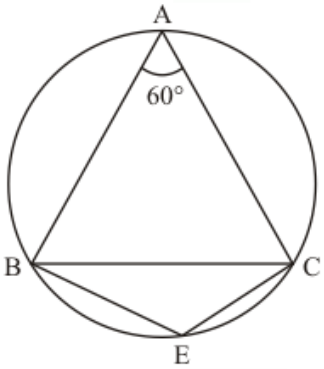
Circles Ex 16.5 Q1

Answer :

It is given that, ΔABC is equilateral triangle



We have to find $\text{m}\angle BEC$

Since ΔABC is equilateral

So $\angle A+\angle B+\angle C=180^0$

And

$\angle A=\angle B=\angle C=60^0$ ..... (1)

Now ΔBEC is a cyclic quadrilateral

So $\angle A+\angle E=180^0$ (by property of cycle quadrilateral opposite angle is 180^0)

$60^0+\angle E=180^0$

$\angle E=120^0$

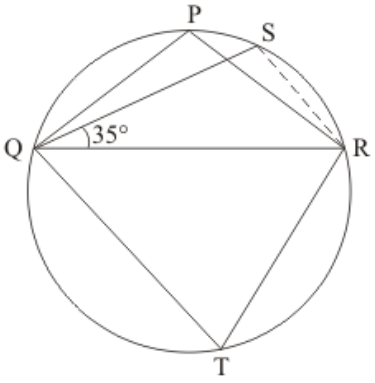
Hence

$\boxed{\text{m}\angle BEC=120^0}$

Circles Ex 16.5 Q2

Answer :

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



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

Since ΔPQR is an isosceles triangle

So $\angle PQR = \angle PRQ = 35°$

Then

$$\begin{aligned}\angle QPR &= 180^0 - (\angle PQR + \angle PRQ)\\ &= 180^0 - (35^0 + 35^0)\\ &= 180^0 - 70^0\\ &= 110^0\end{aligned}$$

Since $PQTR$ is a cyclic quadrilateral

So

$$\begin{aligned}\angle P + \angle T &= 180^0\\ \angle T &= 180^0 - 110^0\\ &= 70^0\end{aligned}$$

In cyclic quadrilateral $QSRT$ we have

$$\begin{aligned}\angle S + \angle T &= 180^0\\ \angle S &= 180^0 - 70^0\\ &= 110^0\end{aligned}$$

Hence

$$\boxed{m\angle QSR = 110^0} \text{ and } \boxed{\angle QTR = 70^0}$$

********** END **********