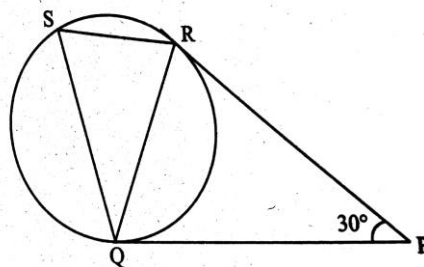


SUBJECT –MATHEMATICS ,CLASS –X

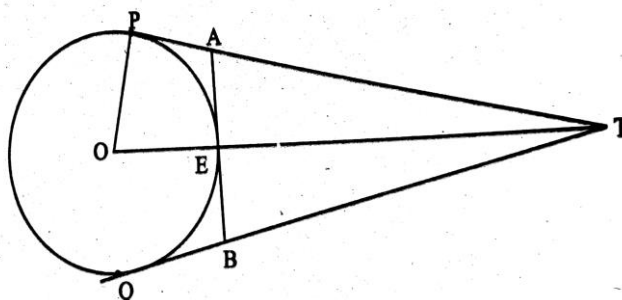
CHAPTER -10 (CIRCLES)

WORKSHEET (HOTS)

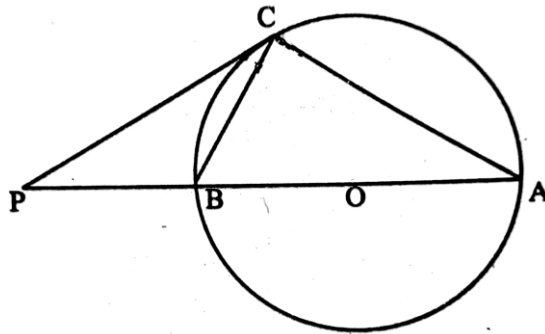
1. If TP AND TQ are tangents drawn from an external point T to a circle with centre O with $\angle TQP=60^\circ$ then $\angle OPQ$ is -
(a) 30° (b) 25° (c) 40° (d) 60° .
2. The tangent AB touches a circle , with centre O ,at the point O .If the radius of the circle is 5cm,OB=10cm and $OB=AB$, then find AP .
3. AB is the diameter of a circle and AC is the chord such that $\angle BAC=30^\circ$. If the tangent at C intersects AB extended at D, then prove that $BC =BD$.
4. In a right ΔABC in which $\angle B = 90^\circ$,a circle is drawn with AB as diameter intersecting the hypotenuse AC at P . Prove that the tangent to the circle at P bisects BC.
5. In the given fig. , tangents PQ and PR are drawn to a circle such that $\angle RPQ = 30^\circ$. A chord RS is drawn parallel to the tangent PQ. Find the $\angle RQS$.



6. In the given figure O is the centre of the circle of radius 5 cm . T is a point such that $OT = 13$ cm and OT intersect the circle at E . If AB is the tangent to the circle at E , find the length of AB.
[NCERT EXEMPLAR]



7. In the given figure , the tangent at a point C of the circle and a diameter AB when extended intersect at P. If $\angle PCA=110^\circ$ then find $\angle CBA$.
[NCERT EXEMPLAR]



8. Let s denotes the semi- perimeter of a ΔABC in which $BC = a$, $CA = b$ and $AB = c$. If a circle touches the sides BC, CA, AB at D, E, F respectively . Prove that $BD = s-b$.
9. Prove that opposites of quadrilateral circumscribing a circle subtend supplementary angles at the centre of the circle. [NCERT , CBSE 2012,14]
10. In the given figure two tangents AB and AC are drawn to a circle with centre O such that $\angle BAC = 120^\circ$. Prove that $AB = \frac{1}{2}OA$. [CBSE 2016]