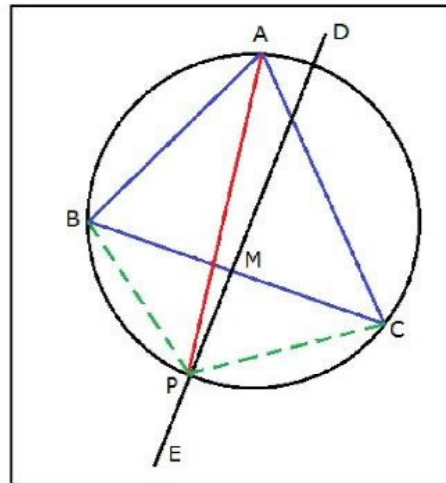


Exercise 10.6

Question 10 class IX

To Prove: Bisector of $\angle A$ and perpendicular bisector of BC intersect on the circumcircle of ΔABC



Const: Join BP and CP.

Proof: (i)

DE is perpendicular bisector of BC intersecting the circumcircle at P.

$\therefore BP = CP$ [\because any point on the perpendicular bisector of a line segment is equidistant from the end points.]

$\angle BAP = \angle CAP$ [\because any point on the perpendicular bisector of a line segment is equidistant from the end points.]

AP is bisector of $\angle A$.

\therefore Bisector of $\angle A$ and perpendicular bisector of BC intersect on the circumcircle of ΔABC

(ii)

Bisector of $\angle A$ intersects the semicircle at P. Join PM where M is midpoint of BC.

In isosceles triangle ABC PM is median to base BC.

\therefore PM is perpendicular bisector of BC. [\because In an isosceles triangle median to base is also perpendicular bisector of base.]

\therefore Bisector of $\angle A$ and perpendicular bisector of BC intersect on the circumcircle of ΔABC