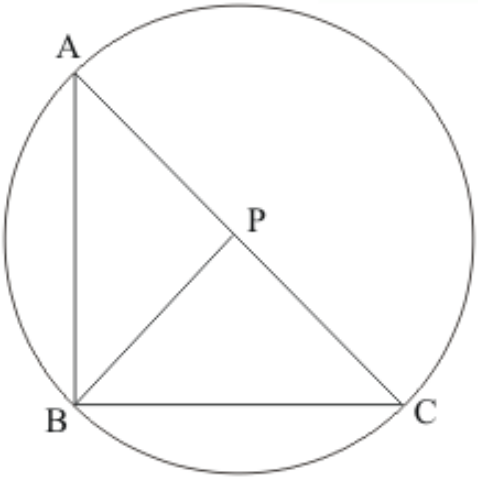
Circles Ex 16.5 Q28

Answer :

We have to prove that $BP = \frac{1}{2}AC$



Let ΔABC be a right angle at B and P be midpoint of AC

Draw a circle with center at P and AC diameter

Since $\angle ABC = 90^0$ therefore circle passing through B

So $BP = CP =$ radius

$\Rightarrow AP = BP = CP$

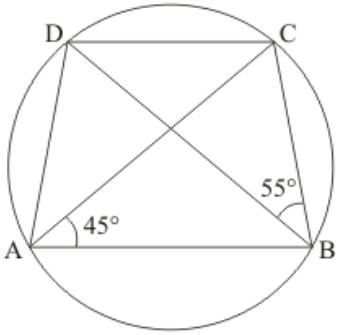
Hence

$\boxed{BP = \frac{1}{2}AC}$ Proved.

Circles Ex 16.5 Q29

Answer :

It is given that $ABCD$ is a cyclic quadrilateral with AC and DB are diagonal



We have to find $\angle BCD$

Since angles in the same segment of a circle are equal

So $\angle CAD = \angle DBC = 55^0$

$$\angle DAB = \angle CAD + \angle BAC$$
$$= 55^0 + 45^0$$
$$= 100^0$$

Since $\angle DAB + \angle BCD = 180^0$ (opposite angle of cyclic quadrilateral)

$$\angle BCD = 180^0 - 100^0$$
$$= 80^0$$

Hence $\boxed{\angle BCD = 80^0}$

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