Congruent Triangles Ex 10.1 Q12

Answer :

It is given that

ABC Is right angled triangle

And

$\angle A = 90^0$

$AB = AC$

We have to find $\angle B$ and $\angle C$

Since $AB = AC$

$\angle B = \angle C$ (Isosceles triangle)

Now

$\angle A + \angle B + \angle C = 180^0$ (Property of triangle)

$\Rightarrow 90^0 + 2\angle B = 180^0 \,(\angle B = \angle C)$

$\Rightarrow 2\angle B = 90^0$

$\Rightarrow \angle B = 45^0$

So $\angle B = \angle C = 45^0$

Hence

$$\boxed{\begin{array}{l} \angle B = 45^0 \\ \angle C = 45^0 \end{array}}$$

Congruent Triangles Ex 10.1 Q13

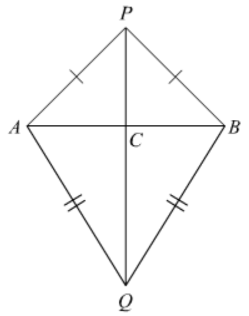
Answer :

It is given that

P and Q are equidistant from A and B that is

$PA = PB$, and $AQ = QB$

We are asked to show that line PO is perpendicular bisector of line AB.



First of all we will show that ΔAQP and ΔQBP are congruent to each other and ultimately we get the result.

Consider the triangles AQP and QBP in which

$AP=BP, AQ=BQ, PQ=PQ$

So by SSS property we have

$\Delta APQ \cong \Delta BPQ$

Implies that $\angle APQ = \angle BPQ$

Now consider the triangles ΔAPC and ΔPCB in which

$$AP = PB$$
$$\angle APC = \angle BPC$$

And $PC = PC$

So by SAS criterion we find that,

$\Delta APC \cong \Delta BPC$

So this implies that $AC=BC$ and $\angle ACP = \angle BCP$

But

$$\angle ACP + \angle BCP = 180$$
$$2\angle ACP = 180$$
$$\angle ACP = \angle BCP = 90$$

Hence PQ is perpendicular bisector of AB.

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