



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 $AB = AC$

$$\angle B = \angle C \text{ (Isosceles triangle)}$$

Now

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

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

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

$$\Rightarrow \angle B = 45^0$$

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

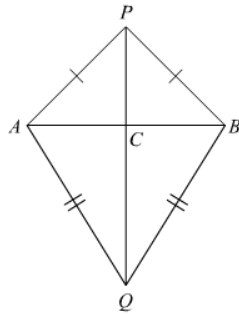
Answer :

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 PQ is perpendicular bisector of line AB .



First of all we will show that $\triangle AQP$ and $\triangle BQP$ are congruent to each other and ultimately we get the result.

Consider the triangles AQP and BQP in which

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

So by SSS property we have

$\triangle APQ \cong \triangle BPQ$

Implies that $\angle APQ = \angle BPQ$

Now consider the triangles $\triangle APC$ and $\triangle BPC$ in which

$$AP = PB$$

$$\angle APC = \angle BPC$$

And $PC = PC$

So by SAS criterion we find that,

$$\triangle APC \cong \triangle BPC$$

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 *****