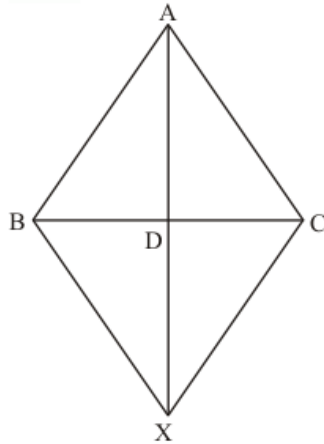




Quadrilaterals Ex 14.4 Q4

Answer :

$\triangle ABC$ is given with AD as the median extended to point X such that $AD = DX$



Join BX and CX .

We get a quadrilateral $ABXC$, we need to prove that it's a parallelogram.

We know that AD is the median.

By definition of median we get:

$$BD = CD$$

Also, it is given that

$$AD = DX$$

Thus, the diagonals of the quadrilateral $ABXC$ bisect each other.

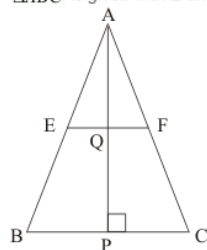
Therefore, quadrilateral $ABXC$ is a parallelogram.

Hence proved.

Quadrilaterals Ex 14.4 Q5

Answer :

$\triangle ABC$ is given with E and F as the mid points of sides AB and AC .



Also, $AP \perp BC$ intersecting EF at Q .

We need to prove that $AQ = QP$

In $\triangle ABC$, E and F are the mid-points of AB and AC respectively.

Theorem states, the line segment joining the mid-points of any two sides of a triangle is parallel to the third side and equal to half of it.

Therefore, we get: $EF \parallel BC$

Since, Q lies on EF .

Therefore, $FQ \parallel BC$

This means,

Q is the mid-point of AP .

Thus, $AQ = QP$ (Because, F is the mid point of AC and $FQ \parallel BC$)

Hence proved.

***** END *****

