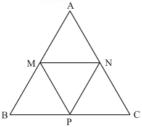


Quadrilaterals Ex 14.4 Q8

Answer:

We have $\triangle ABC$ as follows:



M, N and P are the mid-points of sides AB, AC and BC respectively.

Also, MN = 3 cm, NP = 3.5 cm and MP = 2.5 cm

We need to calculate BC, AB and AC.

In $\triangle ABC$, M and N 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,

$$MN = \frac{1}{2}BC$$

$$BC = 2MN$$

$$BC = 2(3 \text{ cm})$$

$$BC = 6 \text{ cm}$$

Similarly,

$$NP = \frac{1}{2}AB$$

$$AB = 2NP$$

$$AB = 2(3.5cm)$$

$$AB = 7$$
cm

And

$$MP = \frac{1}{2}AC$$

$$AC = 2MP$$

$$AC = 2(2.5cm)$$

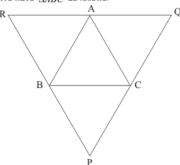
$$AB = 5$$
cm

Hence, the measure for *BC*, *AB* and *AC* is 6cm, 7cm and 5cm respectively.

Quadrilaterals Ex 14.4 Q9

Answer:

We have $\triangle ABC$ as follows:



Through A,B and C lines are drawn parallel to BC,CA and AB respectively intersecting at P,Q and Rrespectively.

We need to prove that perimeter of ΔPQR is double the perimeter of ΔABC .

 $AB \parallel CQ$ and $BC \parallel AQ$

Therefore, ABCQ is a parallelogram.

Thus, BC = AQ

Similarly,

ARBC is a parallelogram.

Thus, BC = AR

Therefore,

AQ = AR

Then, we can say that A is the mid-point of QR.

Similarly, we can say that ${\it B}$ and ${\it C}$ are the mid-point of ${\it PR}$ and ${\it PQ}$ respectively.

In
$$\Delta PQR$$
 , $AC \parallel PR$

Theorem states, the line drawn through the mid-point of any one side of a triangle is parallel to the another side, intersects the third side at its mid-point.

Therefore,
$$AC = \frac{1}{2}PR$$

PR = 2AC

Similarly,

$$BC = \frac{1}{2}QR$$

$$QR = 2BC$$

$$QR = 2BC$$
And $AB = \frac{1}{2}PQ$

$$PO = 2AB$$

$$PQ + QR + PR = 2AB + 2BC + 2CA$$

$$PQ + QR + PR = 2(AB + BC + AC)$$

Perimeter of ΔPQR is double the perimeter of ΔABC

Hence proved.

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