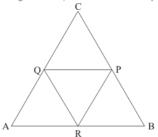


## Quadrilaterals Ex 14.4 Q3

## Answer:

It is given that P, Q and R are the mid-points of BC, CA and AB respectively



Also, we have AC = 21 cm, BC = 29 cm and AB = 30 cm

We need to find the perimeter of quadrilateral ARPQ

In  $\triangle ABC$ , P and R are the mid-points of CB and AB respectively.

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

Therefore, we get:

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

$$PR = \frac{1}{2}(21\text{cm})$$

$$PR = \frac{21}{2}$$
 cm

Similarly, we get

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

$$PQ = \frac{1}{2}(30\text{cm})$$

$$PQ = 15 \text{cm}$$

We have Q and R as the mid points of AC and AB respectively.

Therefore,

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

$$AQ = \frac{1}{2}(21\text{cm})$$

$$AQ = \frac{21}{2}$$
 cm

And

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

$$AR = \frac{1}{2}(30\text{cm})$$

$$AR = 15\text{cm}$$
Perimeter of  $ARPQ = AR + PR + AQ + PQ$ 

$$= 15\text{cm} + \frac{21}{2}\text{cm} + \frac{21}{2}\text{cm} + 15\text{cm}$$

$$= \boxed{51\text{cm}}$$

Hence, the perimeter of quadrilateral ARPQ is 51 cm

\*\*\*\*\*\*\*\*\*\* END \*\*\*\*\*\*\*\*