Triangles Ex 4.2 Q6

Answer :

(1)It is given that $PM = 4\text{cm}$, $QM = 4.5\text{cm}$, $PN = 4\text{cm}$ and $NR = 4.5\text{cm}$.

We have to check that $MN \| QR$ or not.

According to Thales theorem we have

$$\frac{PM}{QM} = \frac{PN}{NR}$$

$$\Rightarrow \frac{4}{4.5} = \frac{4}{4.5} \text{ (Proportional)}$$

Hence, $\boxed{MN \| QR}$

(2) It is given that PQ = 1.28 cm, PR = 2.56 cm, PM = 0.16 cm and PN = 0.32 cm.

We have to check that $MN \| QR$ or not.

According to Thales theorem we have

$$\frac{PM}{QM} = \frac{PN}{NR}$$

Now,

$$\frac{PM}{MQ} = \frac{0.16}{1.12} = \frac{1}{7}$$

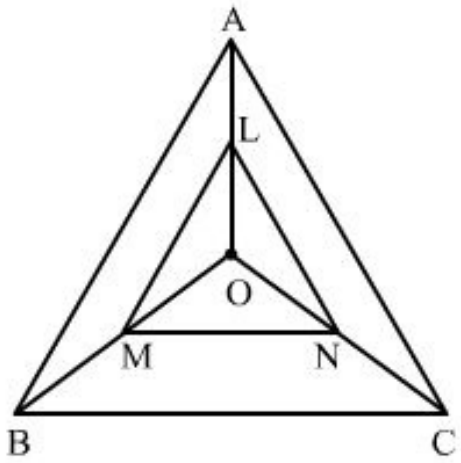
$$\frac{PN}{NR} = \frac{0.32}{2.24} = \frac{1}{7}$$

$$\therefore \frac{0.16}{1.12} = \frac{0.32}{2.24}$$

Hence, $\boxed{MN \| QR}$

Triangles Ex 4.2 Q7

Answer :



In $\triangle OAB$, since $LM \parallel AB$, then

$\frac{OL}{LA} = \frac{OM}{MB}$ (By BPT) .....(1)

In $\triangle OBC$, since $MN \parallel BC$, then

$\frac{OM}{MB} = \frac{ON}{NC}$ (By BPT)

$\Rightarrow \frac{ON}{NC} = \frac{OM}{MB}$ .....(2)

from (1) and (2), we get

$\frac{OL}{LA} = \frac{ON}{NC}$ .....(3)

In $\triangle OCA$, we have,

$\frac{OL}{LA} = \frac{ON}{NC}$

$\Rightarrow LN \parallel AC$ (By converse of BPT)

Triangles Ex 4.2 Q8

Answer :

It is given that in ΔABC, $DE \parallel BC$ and $BD = CE$.

We have to prove that ΔABC is isosceles.

By Thales theorem we have

$$\frac{AD}{BD} = \frac{AE}{EC}$$

$$\Rightarrow AD = AE$$

Now $BD = CE$ and $AD = AE$

So $AD + BD = AE + CE$

Hence $\boxed{AB = AC}$

So, ΔABC is isosceles

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