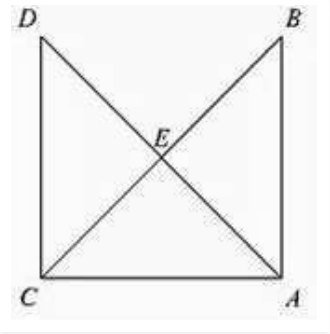
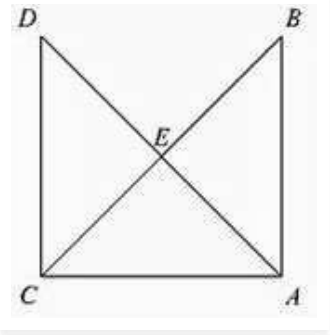
(1) In fig (10).9(2) It is given that AB = CD and AD = BC. Prove that $\Delta ADC \cong \Delta CBA$.



Solution:

Given that in the figure AB = CD and AD = BC.

We have to prove $\Delta ADC \cong \Delta CBA$



Now,

Consider Δ ADC and Δ CBA.

We have

AB = CD [Given]

BC = AD [Given]

And AC = AC [Common side]

So, by SSS congruence criterion, we have

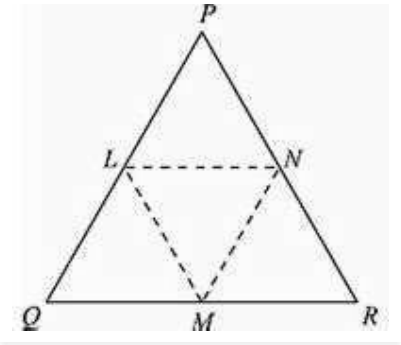
$\Delta ADC \cong \Delta CBA$

Hence proved

(2) In a Δ PQR. IF PQ = QR and L, M and N are the mid-points of the sides PQ, QR and RP respectively. Prove that LN = MN.

Sol: Given that in Δ PQR, PQ = QR and L, M and N are the mid-points of the sides PQ, QR and RP respectively

We have to prove LN = MN.



Join L and M, M and N, N and L

We have PL = LQ, QM = MR and RN = NP

[Since, L, M and N are mid-points of Pp. QR and RP respectively]

And also PQ = QR

PL = LQ = QM = MR = $\frac{PQ}{2} = \frac{QR}{2}$ .....(i) Using mid-point theorem,

We have

MN || PQ and MN = $\frac{PQ}{2}$

MN = PL = LQ .....(ii)

Similarly, we have

LN || QR and LN = (1/2)QR

LN = QM = MR .....(iii)

From equation (i), (ii) and (iii), we have

PL = LQ = QM = MR = MN = LN

LN = MN