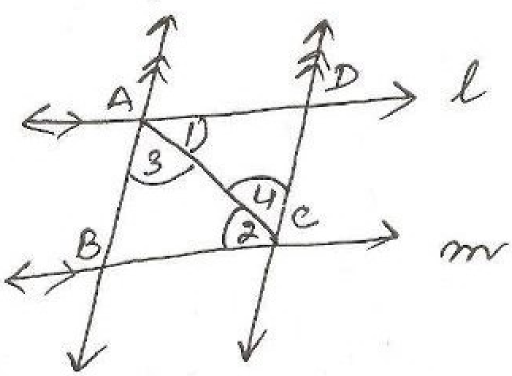
(4)



To show $\triangle ABC \cong \triangle CDA$

Proof In $\triangle ABC$ and $\triangle CDA$

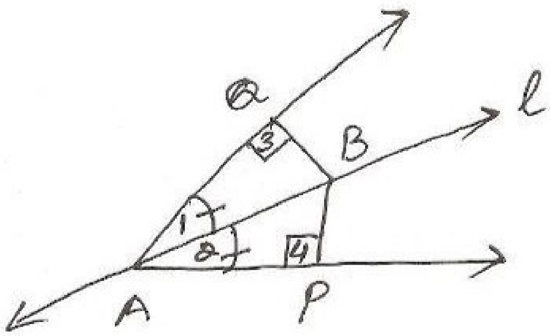
$\angle 1 = \angle 2$ (al. int. $\angle$s $\because l \parallel m$)

$AC = CA$

$\angle 4 = \angle 3$ (al. int. $\angle$s $\because p \parallel q$)

$\therefore \triangle ABC \cong \triangle CDA$ by ASA prop

(5)



To show $\triangle APB \cong \triangle AQB$

$BP = BQ$

Proof In $\triangle APB$ and $\triangle AQB$

$\angle 4 = \angle 3 = 90°$

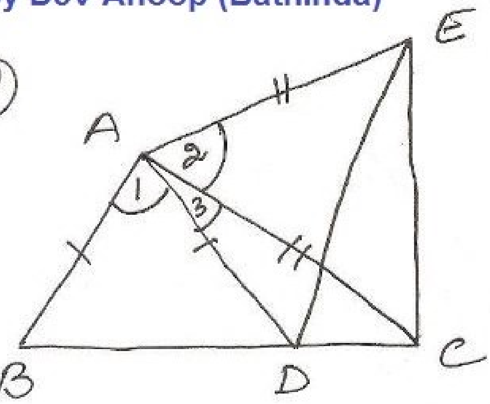
$\angle 2 = \angle 1$ [l is bisector of $\angle QAP$]

$AB = AB$ [Common]

$\therefore \triangle APB \cong \triangle AQB$ by AAS rule

$BP = BQ$ (cpct)

(6)



to prove $BC = DE$

proof $\angle 1 = \angle 2$ (given)

$\angle 1 + \angle 3 = \angle 2 + \angle 3$

$\Rightarrow \angle BAC = \angle DAE$

In $\triangle BAC$ and $\triangle DAE$

$AB = AD$ (given)

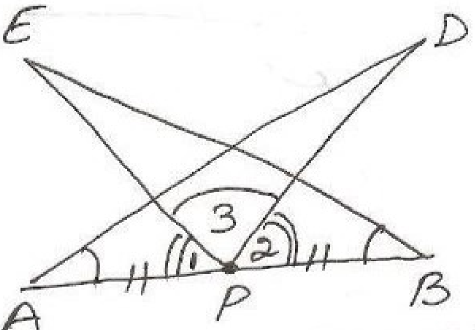
$\angle BAC = \angle DAE$ (proved)

$AC = AE$ (given)

$\therefore \triangle BAC \cong \triangle DAE$ by SAS prop

$BC = DE$ (cpct)

(7)



To Prove $\triangle DAP \cong \triangle EBP$

$AD = BE$

Proof $\angle 1 = \angle 2$ (given)

$\angle 1 + \angle 3 = \angle 2 + \angle 3$

$\Rightarrow \angle APD = \angle BPE$

In $\triangle DAP$ and $\triangle EBP$

$\angle A = \angle B$

$AP = BP$

$\angle APD = \angle BPE$

$\therefore \triangle DAP \cong \triangle EBP$

$AD = BE$ (cpct)