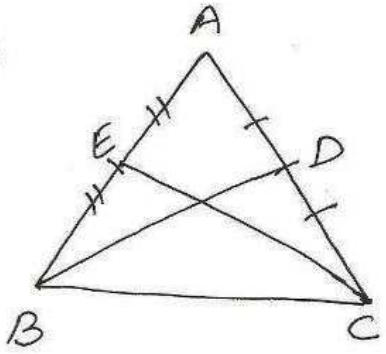
① 

to show $DD = CE$

proof In $\triangle ABD$ and $\triangle ACE$

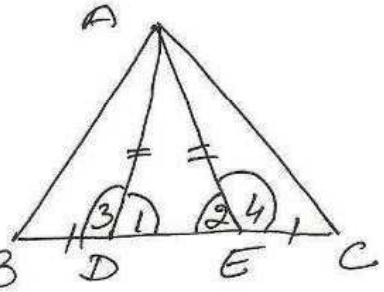
$AB = AC$ (given)

$\angle A = \angle A$

$AD = AE$ [$AB = AC$, $\frac{1}{2}AB = \frac{1}{2}AC$, $AE = AD$, $\because D$ is midpt of AC, E is midpt of AB]

$\therefore \triangle ABD \cong \triangle ACE$ by SAS property

$BD = CE$ (cpct)

② 

to show $\triangle ABD \cong \triangle ACE$

proof In $\triangle ADE$

$AD = AE$ (given)

$\angle 2 = \angle 1$ (isos. $\triangle$ prop)

$\angle 1 + \angle 3 = 180$ ---(i) [linear pair axiom]

$\angle 2 + \angle 4 = 180$ ---(ii) [linear pair axiom]

From (i), (ii)

$\angle 1 + \angle 3 = \angle 2 + \angle 4$

$[\because \angle 1 = \angle 2]$

$\Rightarrow \angle 3 = \angle 4$

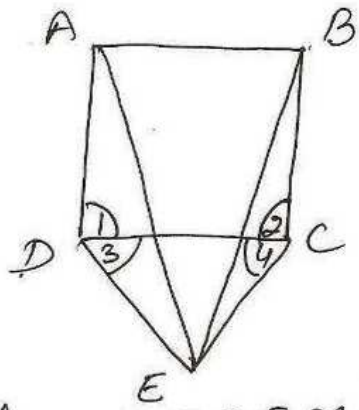
In $\triangle ABD$ and $\triangle ACE$

$AD = AE$ (given)

$\angle 3 = \angle 4$ (proved)

$BD = CE$ (given)

$\therefore \triangle ABD \cong \triangle ACE$ by SAS prop.

③ 

To show $\triangle ADE \cong \triangle BCE$

Proof $DE = CE$ (sides of equilateral $\triangle$)

$\angle ADE = \angle BCE$ [$\angle 1 = \angle 2 = 90$, $\angle 3 = \angle 4 = 60$, $\angle 1 + \angle 3 = \angle 2 + \angle 4$, $\Rightarrow \angle ADE = \angle BCE$]

$AD = BC$ (sides of Sq.)

$\therefore \triangle ADE \cong \triangle BCE$ by SAS property

NCERT Exemplar Sols. by Dev Anoop (Bathinda)