

Mathematics

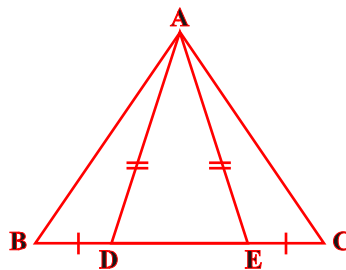
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(Chapter – 7) (Triangles)(Exemplar Problems)
(Class – IX)

Exercise 7.3

Question 2:

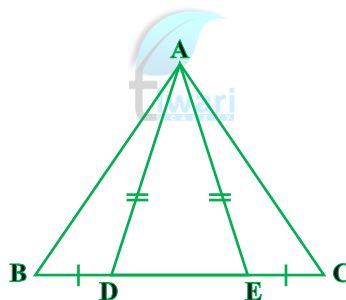
In Figure, D and E are points on side BC of a $\triangle ABC$ such that $BD = CE$ and $AD = AE$. Show that $\triangle ABD \cong \triangle ACE$.



Answer 2:

Given: In $\triangle ABC$, $BD = CE$ and $AD = AE$.

To Prove: $\triangle ABD \cong \triangle ACE$.



Proof: $\triangle ABC$, $AD = AE$

[\because Given]

$\Rightarrow \angle ADE = \angle AED$

[\because Angles opposite to equal sides]

$\Rightarrow 180 - \angle ADB = 180 - \angle AEC$

$\Rightarrow \angle ADB = \angle AEC$

Now, in $\triangle ABD$ & $\triangle ACE$

$AD = AE$

[\because Given]

$\angle ADB = \angle AEC$

[\because Proved above]



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(Chapter – 7) (Triangles)(Exemplar Problems)
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$$BD = CE$$

[∴ Given]

$$\triangle ABD \cong \triangle ACE$$

[∴ SAS rule]

Hence Proved.

