

RD Sharma Class 9 Solutions

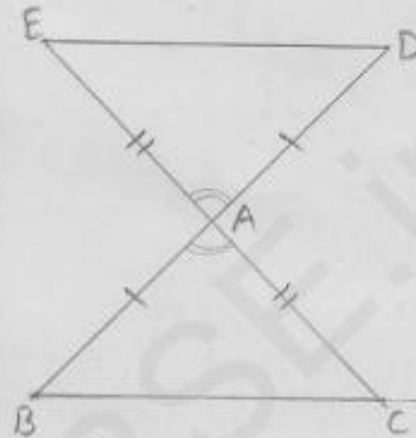
Congruent Triangles

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Solution-(1) :-

Given that, the
Sides BA and CA have
been produced such that
 $BA = AD$ and $CA = AE$

And given to prove $DE \parallel BC$



Consider ΔBAC and DAE ,

We have

$$BA = AD \text{ and } CA = AE. \quad [\because \text{given in the data}]$$

$$\text{and also } \angle BAC = \angle DAE \quad [\because \text{vertically opposite angles}].$$

So, by SAS Congruence Criterion, we have

$$\Delta BAC \cong \Delta DAE$$

$\Rightarrow BC = DE$ and $\angle DEA = \angle BCA$, $\angle EDA = \angle CBA$ LearnCBSE.in

[Corresponding parts of congruent triangles are equal]

Now, DE and BC are two lines intersected by a transversal DB such that $\angle DEA = \angle BCA$,
i.e., alternate angles are equal.

Therefore, $DE \parallel BC$

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