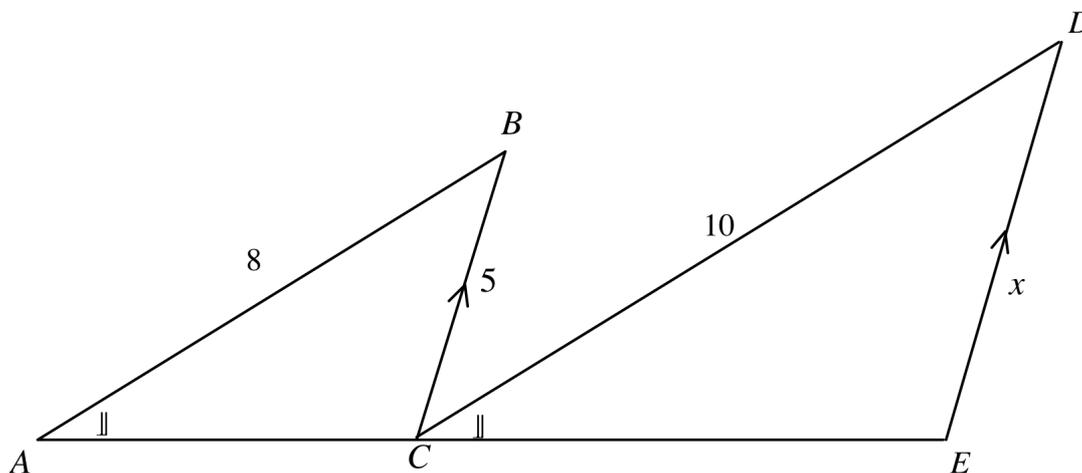


Simple similarity problem

<http://topdrawer.aamt.edu.au/Geometric-reasoning/Good-teaching/Writing-a-proof/Proving-Pythagoras-theorem/Dissected-proof>



1. Prove that $\triangle ABC$ is similar to $\triangle CDE$.
2. Hence, if $AB = 8$, $BC = 5$ and $CD = 10$, find DE .

Solution

In $\triangle ABC$ and $\triangle CDE$

$$\angle CAB = \angle ECD \quad (\text{given})$$

$$\angle ACB = \angle AED \quad (\text{corresponding angles, } BC \parallel DE)$$

$$\therefore \triangle ABC \sim \triangle CDE \quad (\text{AAA})$$

$$\therefore \frac{AB}{CD} = \frac{BC}{DE} = \frac{AC}{CE} \quad (\text{matching sides of similar triangles})$$

$$\therefore \frac{8}{10} = \frac{5}{x}$$

$$8x = 50$$

$$x = \frac{50}{8}$$

$$x = 12.5$$

