

Simple similarity problem

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



- 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 $\triangle CDE$ $\angle CAB = \angle ECD$ (given) $\angle ACB = \angle AED$ (corresponding angles, $BC \mid \mid DE$) $\therefore \triangle ABC \mid \mid \triangle CDE$ (AAA)

 $\therefore \frac{AB}{CD} = \frac{BC}{DE} = \frac{AC}{CE}$ $\therefore \frac{8}{10} = \frac{5}{x}$ 8x = 50 $x = \frac{50}{8}$ x = 12.5

(matching sides of similar triangles)

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