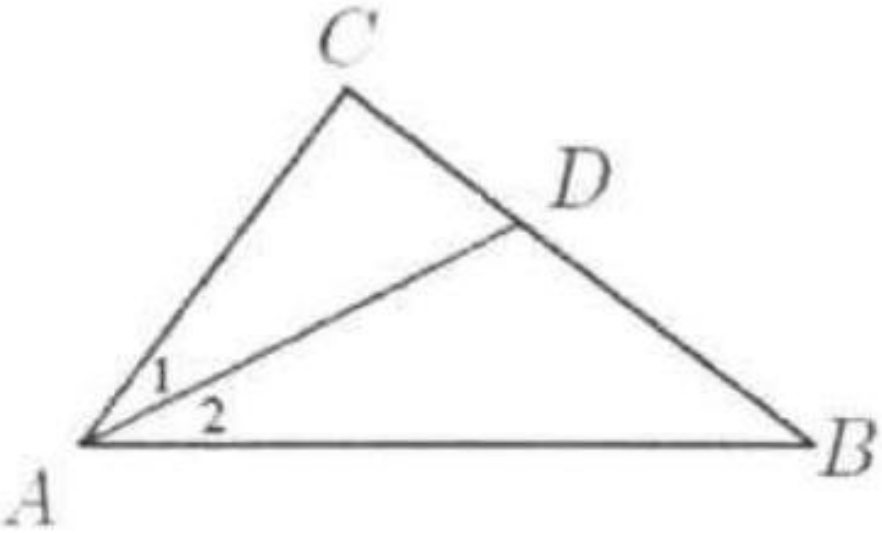
Example 1

In triangle $ABC, \angle C = 90°. \angle 1 = \angle 2. CD = 15$ mm, $BD = 25$ mm. Find AC.

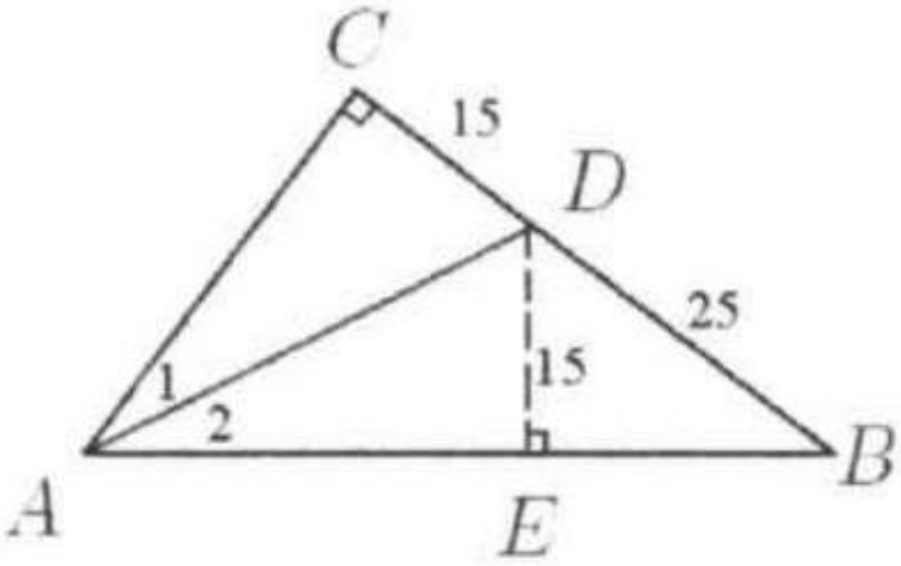
Solution: 30 mm .

Draw $DE \perp AB$ so that the perpendicular line meets AB at $E. \triangle CAD$ and $\triangle AED$ are congruent and $DE = CD =$



15 mm. $\triangle DBE$ is a $15 - 20 - 25$ right triangle and is similar to $\triangle ABC$.

$$\frac{AC}{CB} = \frac{DE}{EB} \Rightarrow \frac{AC}{15+25} = \frac{15}{25} \Rightarrow \quad AC = 30$$


C
15
D
25
15
1
2
A
E
B