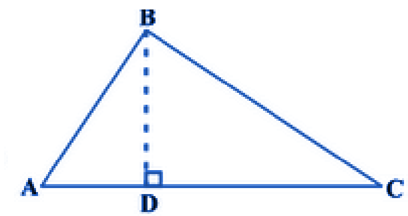

Now, $\triangle ADB \sim \triangle ABC$

So, $AD/AB = AB/AC$

or $AD. AC = AB^2$ ……………(i)

Also, $\triangle BDC \sim \triangle ABC$

So, $CD/BC = BC/AC$

or, $CD. AC = BC^2$ ……………(ii)

Adding (i) and (ii),

$AD. AC + CD. AC = AB^2 + BC^2$

$AC(AD + DC) = AB^2 + BC^2$

$AC(AC) = AB^2 + BC^2$

$\Rightarrow AC^2 = AB^2 + BC^2$

Hence, proved.