



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

So, $AD/AB = AB/AC$

or $AD \cdot AC = AB^2$ (i)

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

So, $CD/BC = BC/AC$

or, $CD \cdot AC = BC^2$ (ii)

Adding (i) and (ii),

$$AD \cdot AC + CD \cdot AC = AB^2 + BC^2$$

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

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

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

Hence, proved.

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Page 4 of 4