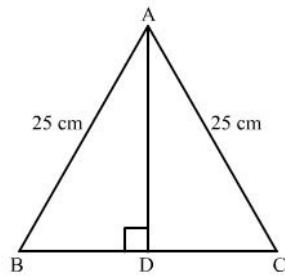




Triangles Ex 4.7 Q6

Answer :

We know that altitude that is a perpendicular drawn on the unequal side of the isosceles triangle bisects that side.



Therefore, $BD = DC = 7$ cm.

Let us use the Pythagoras theorem in right angled triangle ADB we get,

$$AB^2 = AD^2 + BD^2$$

Substituting the values we get,

$$25^2 = AD^2 + 7^2$$

$$\therefore 625 = AD^2 + 49$$

Subtracting 49 from both the sides we get,

$$625 - 49 = AD^2$$

$$\therefore AD^2 = 576$$

Let us take the square root we get,

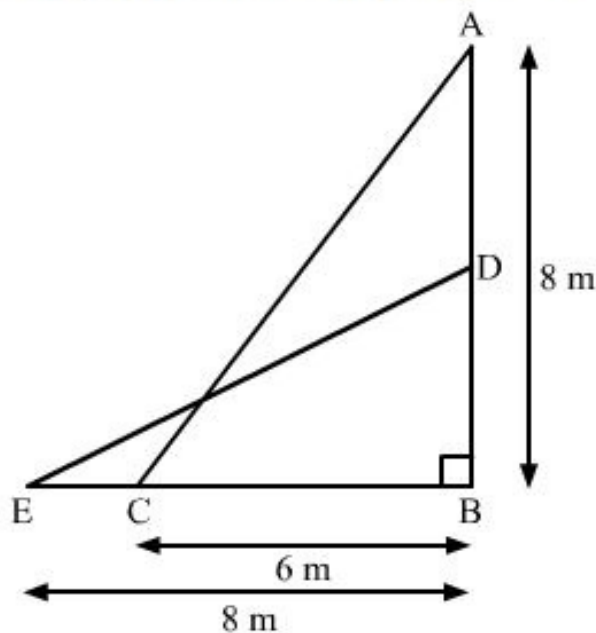
$$AD = 24 \text{ cm}$$

Therefore, the altitude of the isosceles triangle is 24 cm.

Triangles Ex 4.7 Q7

Answer :

The given information can be represented as follows.



Here, A is the position of the window and AC is the ladder.

Also, DE is the same ladder when it is shifted.

C and E are the original and final position of the foot of the ladder.

Now, applying Pythagoras theorem in $\triangle ABC$,

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

$$\Rightarrow AC^2 = (8 \text{ m})^2 + (6 \text{ m})^2 = (10 \text{ m})^2$$

$$\Rightarrow AC = 10 \text{ m}$$

Now, again applying Pythagoras theorem in $\triangle EBD$

$$DE^2 = EB^2 + BD^2$$

$$\Rightarrow (10 \text{ m})^2 = (8 \text{ m})^2 + BD^2$$

$$\Rightarrow BD^2 = 100 \text{ m}^2 - 64 \text{ m}^2 = 36 \text{ m}^2$$

$$\Rightarrow BD = 6 \text{ m}$$

Thus, the tip of the ladder is now at the height of 6 m above the ground.

***** END *****