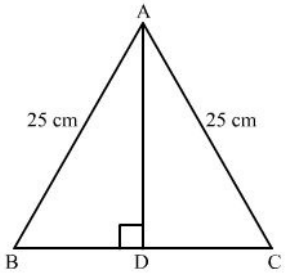
Triangles Ex 4.7 Q6

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,

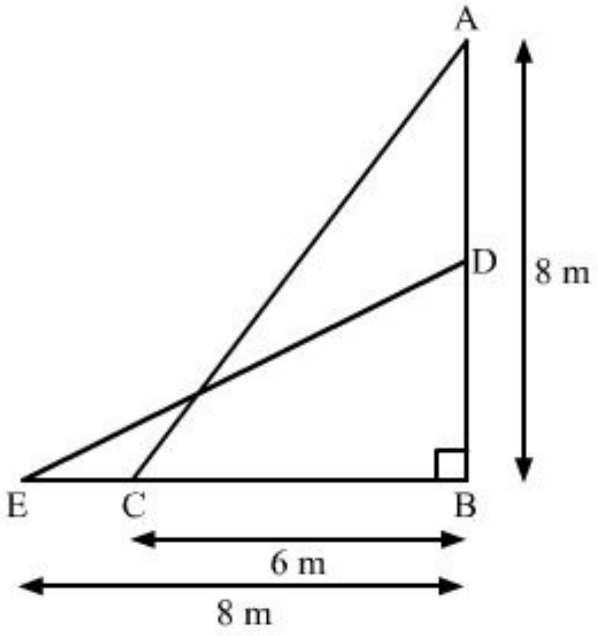
AD = 24 cm

Therefore, the altitude of the isosceles triangle is $\boxed{24\text{ cm}}$.

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 ΔABC,

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

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

$\Rightarrow AC = 10\ m$

Now, again applying Pythagoras theorem in ΔEBD

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

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

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

$\Rightarrow BD = 6\ m$

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

********** END **********