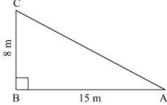


Triangles Ex 4.7 Q3 Answer:

Let us draw the diagram. Let A be the starting point. From point B he goes to the north. Therefore, we obtained the following drawing.



Now we have to find how far is he from the starting point that is we have to find l(AC).

Now we will use Pythagoras theorem to find the length of AC.

$$AC^2 = AB^2 + BC^2 \dots (1)$$

Let us substituting the values of AB and BC in equation (1) we get,

$$AC^{2} = 15^{2} + 8^{2}$$
$$= 225 + 64$$
$$= 289$$

Let us take the square root we get,

$$AC = \pm \sqrt{289}$$

$$AC = \pm 17$$

Since AC is the distance therefore it should be positive.

$$\therefore AC = 17 \text{ m}$$

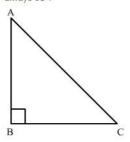
Therefore, he is 17 m from the starting point.

Triangles Ex 4.7 Q4

Answer:

Let us draw the diagram from the given information we get a right angled triangle ABC as shown below.

Let the window be at the point A. We know that angle formed between the building and ground is always 90° .



Given: AB = 15 m and CA = 17 m

Now we will use Pythagoras theorem to find l(BC).

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

Let us substitute the values we get,

$$17^2 = 15^2 + BC^2$$

$$\therefore 289 = 225 + BC^2$$

Subtracting 225 from both the sides of the equation we get,

$$\therefore 289 - 225 = BC^2$$

$$\therefore 64 = BC^2$$

Let us take the square root we get,

$$BC = \sqrt{64}$$

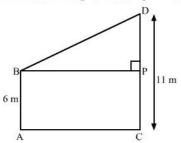
$$BC = 8$$

Therefore, the distance of the foot of the ladder from the building is $8\,m$.

Triangles Ex 4.7 Q5

Answer:

Let us draw the diagram from the given information.



Let us draw a perpendicular from B on CD which meets CD at P.

It is clear that BP = 12 m because it is given that distance between feet of the two poles is 12 m. After drawing the perpendicular we get a rectangle BACP such that AB = PC and BP = AC.

Because of this construction we also obtained a right angled triangle BPD.

Now we will use Pythagoras theorem,

$$BD^2 = BP^2 + PD^2$$

Let us substitute the values of BP and PD we get,

$$BD^2 = 12^2 + 5^2$$

$$BD^2 = 144 + 25$$

$$BD^2 = 169$$

Taking the square root we get, BD = 13

Therefore, distance between the top of the two poles is 13 m

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