



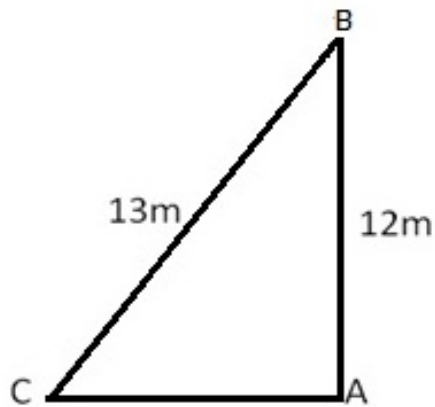
#### Exercise 4D

Question 4:

Let AB be the building and CB be the ladder.

Then,

$AB = 12 \text{ m}$ ,  $CB = 13 \text{ m}$  and  $\angle CAB = 90^\circ$



By Pythagoras theorem, we have

$$CB^2 = AB^2 + AC^2$$

$$AC^2 = [CB^2 - AB^2]$$

$$= [(13)^2 - (12)^2] \text{ m}^2$$

$$= (169 - 144) \text{ m}^2$$

$$= 25 \text{ m}^2$$

$$\Rightarrow AC = \sqrt{25} \text{ m} = 5 \text{ m}$$

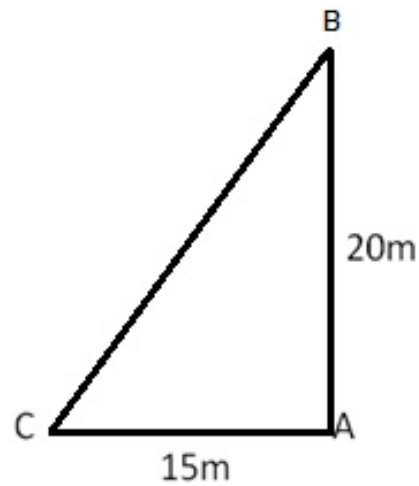
Hence, the distance of the foot of the ladder from the building is 5 m.

Question 5:

Let AB be the wall where window is at B, CB be the ladder and AC be the distance between the foot of the ladder and wall.

Then,

$AB = 20 \text{ m}$ ,  $AC = 15 \text{ m}$ , and  $\angle CAB = 90^\circ$



By Pythagoras theorem, we have

$$\begin{aligned} CB^2 &= AB^2 + AC^2 \\ &= [(20)^2 + (15)^2] \text{ m}^2 \\ &= (400 + 225) \text{ m}^2 \\ &= 625 \text{ m}^2 \end{aligned}$$

$$CB = \sqrt{625} \text{ m} = 25 \text{ m}$$

Hence, the length of ladder is 25 m.

\*\*\*\*\* END \*\*\*\*\*