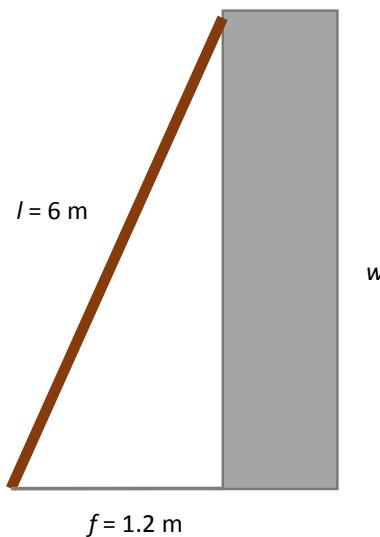


Answer on Question #37692 – Math - Other

Mary has a ladder 6 metres long. Mary places the ladder against a wall. The ladder is 1.2 metres from the wall. How far up the wall will the ladder reach, to the nearest centimetre?

Solution. This question can be answered by using the Pythagorean Theorem.



Let us make a drawing:

The wall is obviously placed at a right angle to the floor; thus, we have a right triangle with the floor f and wall surface w as its legs and the ladder l as its hypotenuse.

Now, according to the Pythagorean Theorem,

$$f^2 + w^2 = l^2.$$

Since we are given the length of the ladder ($l = 6$ m) and the distance from the ladder to the wall ($f = 1.2$ m), we can substitute these values into the formula above and obtain an equation for finding w :

$$1.2^2 + w^2 = 6^2$$

$$w^2 = 6^2 - 1.2^2$$

$$w^2 = 36 - 1.44$$

$$w^2 = 34.56$$

$$w \approx 5.878775 \text{ (m)} \approx 5 \text{ m } 88 \text{ cm.}$$

Answer. The ladder will reach approximately $5 \text{ m } 88 \text{ cm}$ up the wall.