

Answer on Question #76187 – Math – Geometry

Question

An inclined ramp rises 4 meters over a horizontal distance of 9 meters. How long is the ramp?

Solution

If inclined ramp rises over horizontal we will have the right triangle with legs equal 4 and 9 meters. Pythagoras' theorem says that the square of the hypotenuse is equal to the sum of the squares of the other two sides. So, we have:

$$a^2 + b^2 = c^2$$

$$4^2 + 9^2 = c^2$$

$$16 + 81 = c^2$$

$$97 = c^2$$

$$c = \pm \sqrt{97}$$

But we can't have non-positive length, so $c = \sqrt{97}$.

Answer: $\sqrt{97}$.