



Grade 8 - Mathematics

Measurement 2

Memo



- A. Solve the following problems using the Theorem of Pythagoras:
(round off your answers to two decimal places where necessary)

1. Joey made a sandwich. The slices of bread he used were 15cm long by 10cm wide. If he cut the sandwich diagonally in half, what is the length of the diagonal cut side of the sandwich?

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

$$c^2 = (10\text{cm})^2 + (15\text{cm})^2$$

$$c^2 = 100\text{cm}^2 + 225\text{cm}^2$$

$$c^2 = 325\text{cm}^2$$

$$c = \sqrt{325\text{cm}^2}$$

$$c = 18\text{cm}$$

2. Rashid won a laptop in a Maths competition. The screen of the laptop measured 35cm by 19cm. What would the screen measure diagonally from one corner to another.

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

$$c^2 = 35\text{cm}^2 + 19\text{cm}^2$$

$$c^2 = 1225\text{cm}^2 + 361\text{cm}^2$$

$$c^2 = 1586\text{cm}^2$$

$$c = \sqrt{1586\text{cm}^2}$$

$$c = 39,82\text{cm}$$



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3. The main mast of a fishing boat is supported by a sturdy rope, that extends from the top of the mast to the deck. If the mast is 6m tall and the rope is 7,5m long, how far does it extend away from the base of the mast?

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

$$7,5m^2 = (6m)^2 + b^2$$

$$56,25m = 36m^2 + b^2$$

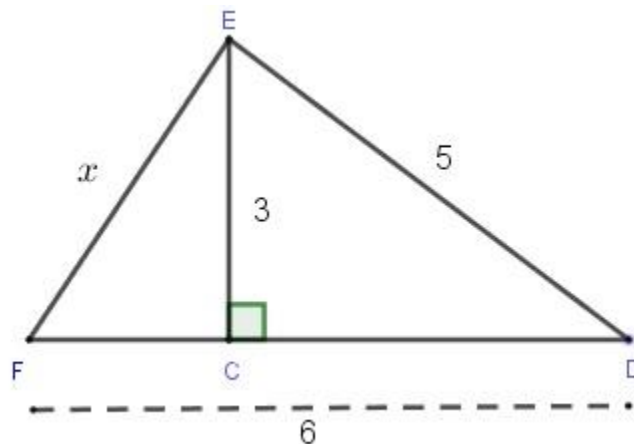
$$56,25m^2 - 36m^2 = b^2$$

$$20,25m^2 = b^2$$

$$\sqrt{20,25m^2} = b$$

$$4,5m = b$$

4.



Work out the value of x .

$$ED^2 = CD^2 + EC^2 \text{ (pythag)}$$

$$5^2 = CD^2 + 3^2$$

$$25 = CD^2 + 9$$

$$25 - 9 = CD^2$$

$$16 = CD^2$$

$$\sqrt{16} = CD$$

$$4 = CD$$

$$FC = FD - CD$$

$$FC = 6 - 4$$

$$FC = 2$$

$$x^2 = 3^2 + 2^2$$

$$x^2 = 9 + 4$$

$$x^2 = 13$$

$$x = \sqrt{13}$$

$$x = 3,6$$



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