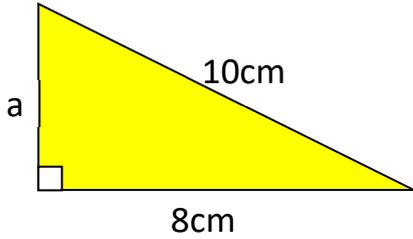
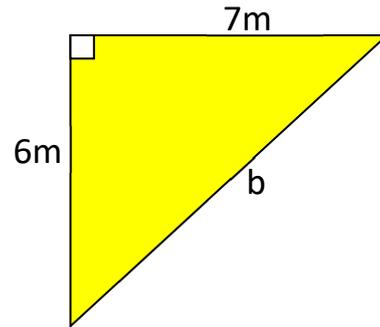


Pythagoras practice questions

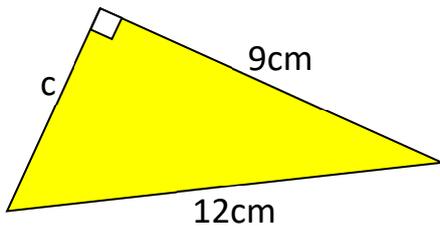
1.



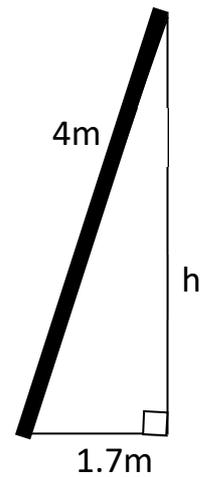
2.



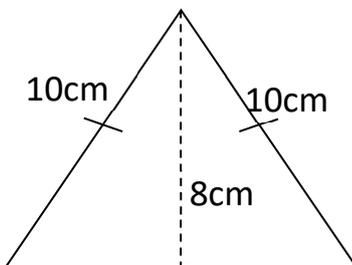
3.



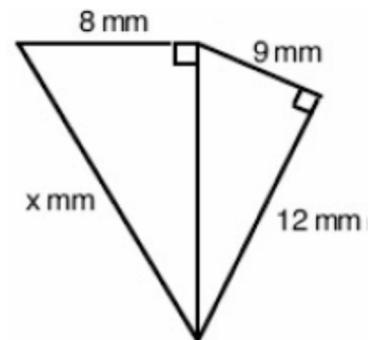
4. This ladder is 4m long and its base is 1.7m from the wall. How far up the wall will it reach?



5. Find length of base.



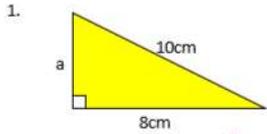
6. Find x.



7. A boat travels 45 miles east then 60 miles north. How far is it from where it started?

8. A rope of length 10m is stretched from the top of a vertical pole 3m high until it reaches the ground. How far is the end of the rope to the base of the pole?

Solutions:

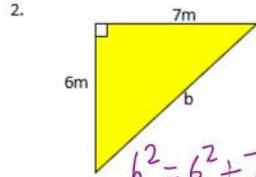


$$a^2 + 8^2 = 10^2$$

$$a^2 = 100 - 64 = 36$$

$$a = \underline{6\text{ cm}}$$

(6, 8, 10 Pythagorean triple)

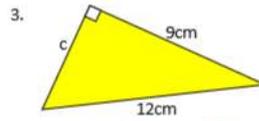


$$b^2 = 6^2 + 7^2$$

$$= 36 + 49$$

$$= 85$$

$$b = \underline{9.2\text{ m}}$$

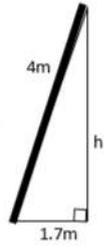


$$c^2 + 12^2 = 9^2$$

$$c^2 = 81 - 144 = -63$$

$$c = \underline{7.9\text{ cm}}$$

4. This ladder is 4m long and its base is 1.7m from the wall. How far up the wall will it reach?



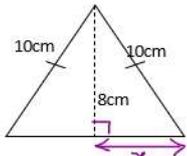
$$h^2 + 1.7^2 = 4^2$$

$$h^2 = 16 - 2.89$$

$$= 13.11$$

$$h = \underline{3.6\text{ m}}$$

5. Find length of base.

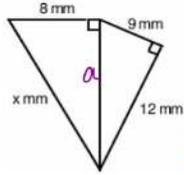


$$x^2 = 10^2 - 8^2 = 36$$

$$x = 6\text{ cm}$$

So base = $2 \times 6 = \underline{12\text{ cm}}$

6. Find x.

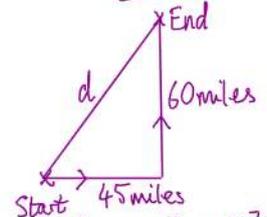


$$a^2 = 9^2 + 12^2 = 225$$

$$a = 15\text{ mm}$$

$$x^2 = 8^2 + 15^2 = 289$$

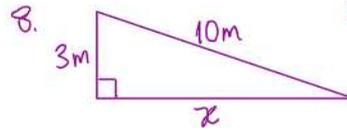
$$x = \underline{17\text{ mm}}$$



$$d^2 = 45^2 + 60^2$$

$$= 5625$$

$$d = \underline{75\text{ miles}}$$



$$x^2 + 3^2 = 10^2$$

$$x = 100 - 9 = 91$$

$$x = \underline{9.5\text{ m}}$$