Test - Pythagoras' theorem

Year: Year 9 · Duration: 45 minutes · /20

Name:	Date:	**Mark: /20**

Question	1	2	3	4	5	Total
marks	4	4	4	4	4	**20**
Mark						

Show your working.

Question 1 (4 marks)

Question 1 – Using the theorem

Find the lengths marked with a letter. Give answers to 1 decimal place if not exact.

a. A right-angled triangle has shorter sides 7 cm and 24 cm. Find the hypotenuse. (1 mark)
b. The shorter sides are 6 cm and 9 cm. Find the hypotenuse. (1 mark)
c. The hypotenuse is 15 cm and one side is 9 cm. Find the other side. (1 mark)
d. The hypotenuse is 8 cm and one side is 5 cm. Find the other side. (1 mark)

Question 2 (4 marks)

Question 2 – Right angle or not?

Decide whether each triangle is right-angled. Show your working.

a. Sides 8 cm, 15 cm, 17 cm. (2 marks)
b. Sides 5 cm, 6 cm, 8 cm. (2 marks)

Question 3 (4 marks)

Question 3 – Distance on a grid

Find the distance between each pair of points.

a. $A(2, 1)$ and $B(8, 9)$ (2 marks)
b. $C(-3, 4)$ and $D(5, -2)$ (2 marks)

Question 4 (4 marks)

Question 4 – Problem: the ladder

A ladder 6.5 m long rests against a vertical wall. The ladder reaches 6 m up the wall.

a. How far is the foot of the ladder from the wall? (2 marks)
b. The foot is moved out to 3.9 m from the wall. How high up the wall does it now reach? (2 marks)

Question 5 (4 marks)

Question 5 – Problem: the field

A rectangular field is 60 m long and 80 m wide. Dan walks along two sides from one corner to the opposite corner. Eve walks straight across along the diagonal.

a. Find the length of the diagonal. (1 mark)
b. How much further does Dan walk? (1 mark)
c. Both walk at 1.5 m per second. Find how long each takes, to the nearest second. (2 marks)