Pythagoras' theorem: 10 practice questions

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Name: _____ Date: _____

Attempt all questions and show your working. Suggested time: 15 to 20 minutes.

Section A: Consolidating (Questions 1-4)

Question 1

A right-angled triangle has shorter sides of 6 cm and 8 cm. Find the length of the hypotenuse.

Question 2

A right-angled triangle has shorter sides of 5 m and 12 m. Find the length of the hypotenuse.

Question 3

Triangle PQR has a right angle at Q. Which side is the hypotenuse? Write Pythagoras' theorem for this triangle using the side names.

Question 4

A triangle has sides of length 7 cm, 24 cm and 25 cm. Use Pythagoras' theorem to decide whether it is a right-angled triangle. Show your working.

Section B: Standard (Questions 5-10)

Question 5

A right-angled triangle has a hypotenuse of 17 cm and one shorter side of 8 cm. Find the length of the third side.

Question 6

A right-angled triangle has shorter sides of 9 mm and 12 mm. Find the length of the hypotenuse.

Question 7

A right-angled triangle has shorter sides of 4 cm and 7 cm. Find the length of the hypotenuse, correct to one decimal place.

Question 8

A right-angled triangle has a hypotenuse of 20 cm and one shorter side of 11 cm. Find the length of the third side, correct to one decimal place.

Question 9

A 5 m ladder leans against a vertical wall on flat ground. The foot of the ladder is 1.4 m from the base of the wall. How high up the wall does the ladder reach?

Question 10

A rectangular TV screen is 48 cm wide and 20 cm high. Find the length of its diagonal.

Pythagoras' theorem: answers

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Question 1

Answer: 10 cm (√(36 + 64))

Question 2

Answer: 13 m (√(25 + 144))

Question 3

Answer: PR (opposite the right angle); $PQ^2 + QR^2 = PR^2$

Question 4

Answer: Yes, right-angled: $7^2 + 24^2 = 49 + 576 = 625 = 25^2$

Question 5

Answer: 15 cm (√(289 - 64) = √(225))

Question 6

Answer: 15 mm

Question 7

Answer: 8.1 cm (√(65))

Question 8

Answer: 16.7 cm (√(400 - 121) = √(279))

Question 9

Answer: 4.8 m (√(25 - 1.96) = √(23.04))

Question 10

Answer: 52 cm (√(2304 + 400) = √(2704))