The Theorem of Pythagoras (Grade 8)

MEMORANDUM

Name: ..... Class: .....

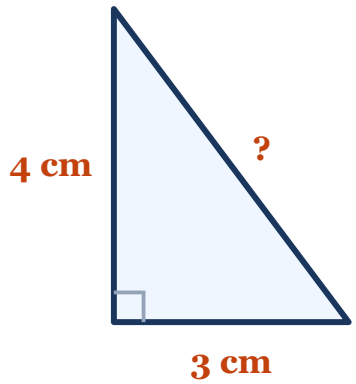
Date: .....

MARK ____ / 19

Answer all questions. Show all your working — marks are awarded for method as well as the final answer. **Teacher copy: accept any correct equivalent method.**

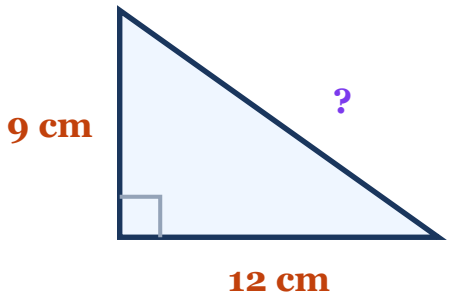
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1 Find the hypotenuse: sides 3 cm and 4 cm. (2)



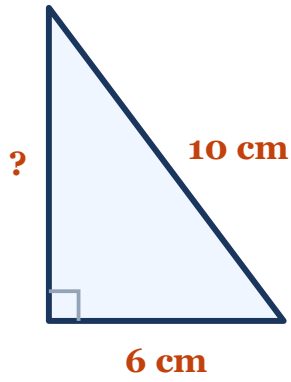
> $c^2 = 9 + 16 = 25 \rightarrow$ **5 cm** ✓✓ (2)

2 Find the hypotenuse: sides 9 cm and 12 cm. (2)



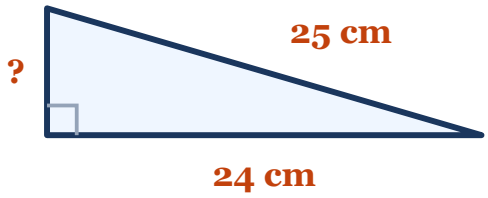
> $c^2 = 81 + 144 = 225 \rightarrow$ **15 cm** ✓✓ (2)

3 Find the missing side: hypotenuse 10 cm, one side 6 cm. (2)



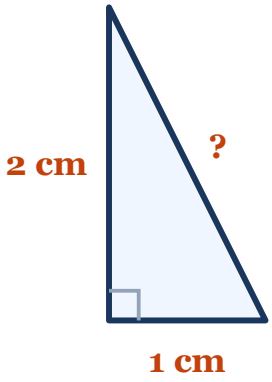
$b^2 = 100 - 36 = 64 \rightarrow$ **8 cm** ✓✓ (2)

4 Find the missing side: hypotenuse 25 cm, one side 24 cm. (2)



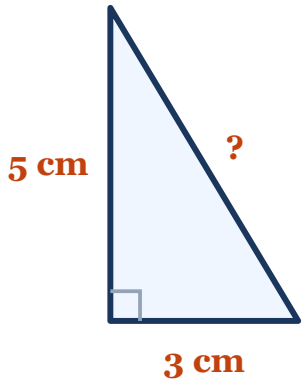
$b^2 = 625 - 576 = 49 \rightarrow$ **7 cm** ✓✓ (2)

5 Find the hypotenuse in surd form: sides 1 cm and 2 cm. (2)



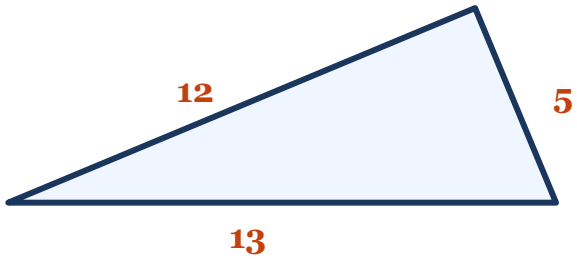
$c^2 = 1 + 4 = 5 \rightarrow$ **$\sqrt{5}$ cm** ✓✓ (2)

6 Find the hypotenuse in surd form: sides 3 cm and 5 cm. (2)



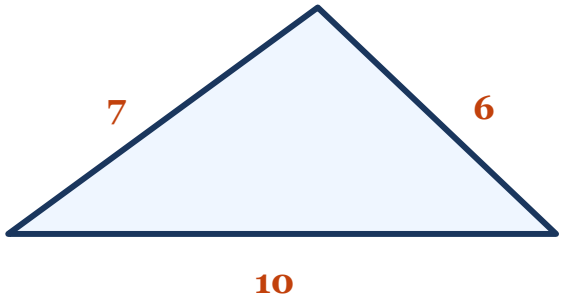
$c^2 = 9 + 25 = 34 \rightarrow \sqrt{34}$ **cm** ✓✓ (2)

7 Is a triangle with sides 5, 12, 13 right-angled? (2)



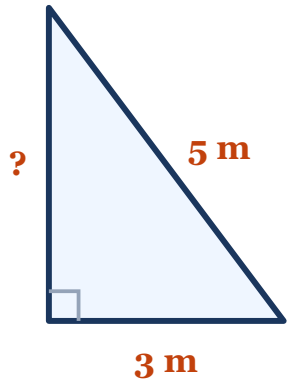
$13^2 = 169$; $25 + 144 = 169 \rightarrow$ **Yes** ✓✓ (2)

8 Is a triangle with sides 6, 7, 10 right-angled? (2)



100 vs $36 + 49 = 85 \rightarrow$ **No** ✓✓ (2)

9 A ladder 5 m long rests 3 m from a wall. How high up the wall does it reach? **(3)**



$h^2 = 25 - 9 = 16 \rightarrow$ **4 m** ✓✓✓ (3)

TOTAL: 19 marks

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