Pythagoras and Trigonometry - Practice paper 1

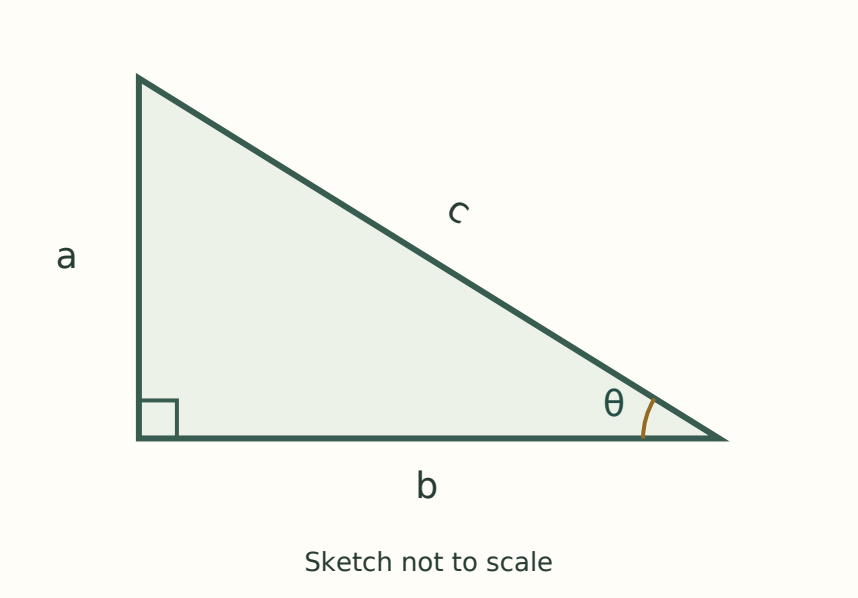
Name: _____ Date: _____

16 questions | 43 marks | 55 minutes

Apply right-triangle geometry to diagrams, lengths, angles and contextual decisions.

A scientific calculator may be used.

1. In the sketch, which side is the hypotenuse? [1 mark]



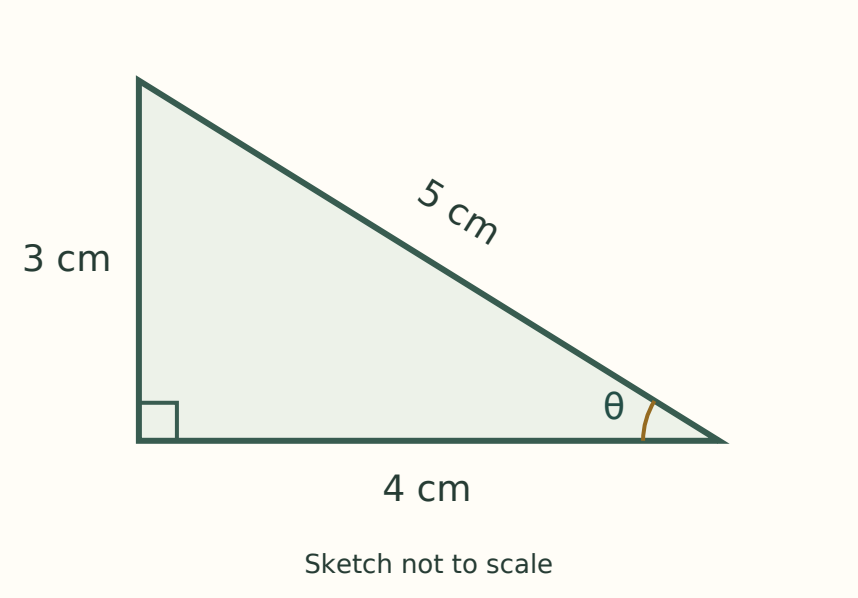
Sketch not to scale

2. Find the hypotenuse with legs 6 cm and 8 cm. [2 marks]

3. Hypotenuse = 17 cm and one leg = 15 cm. Find the other leg. [2 marks]

4. Find the hypotenuse with legs 3 m and 5 m, exactly and to two decimal places. [3 marks]

5. For θ in this sketch, name the opposite and adjacent lengths. [2 marks]



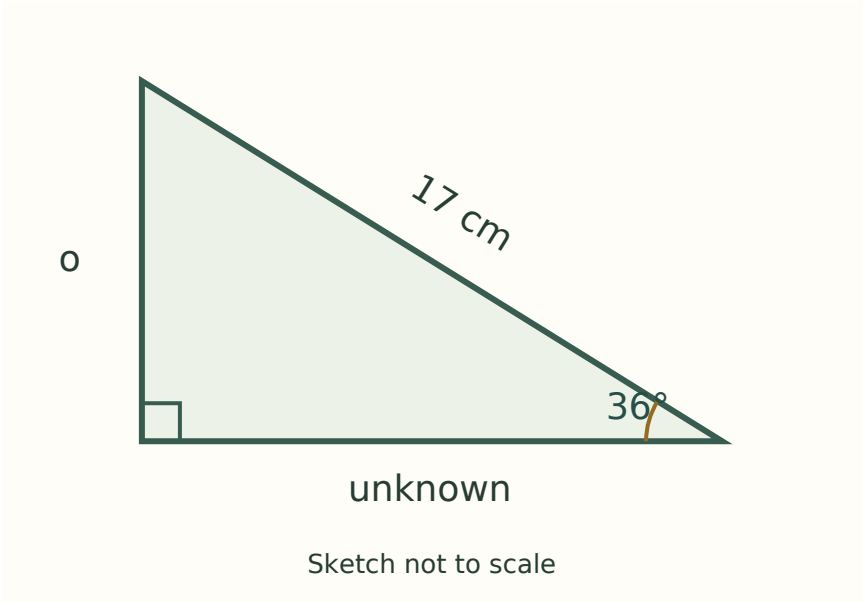
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6. Opposite, adjacent and hypotenuse are 5, 12 and 13. State sin θ, cos θ and tan θ. [3 marks]

7. Evaluate sin 30°. [1 mark]

8. Hypotenuse = 10 m and opposite = 6 m. Find adjacent. [2 marks]

9. Find opposite when hypotenuse = 17 cm and θ = 36°. Round to two decimal places. [3 marks]



Sketch not to scale

10. Find opposite when adjacent = 9 m and θ = 28°. Round to two decimal places. [3 marks]

11. Find hypotenuse when opposite = 7 cm and θ = 40°. Round to two decimal places. [3 marks]

12. Find θ when adjacent = 9 cm and hypotenuse = 15 cm. Round to two decimal places. [3 marks]

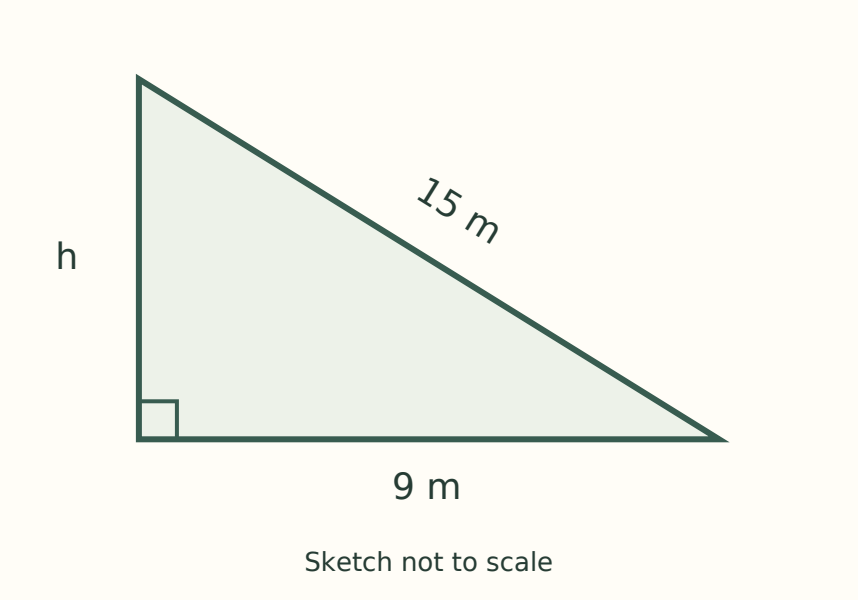
13. Similar right triangles have opposite/adjacent = 3/4. Find opposite when adjacent = 28 cm. [3 marks]

14. A rectangular field is 18 m by 24 m. Answer each part. [5 marks]

(a) Find the diagonal. [2 marks]

(b) Find the angle between the diagonal and the 24 m side, to two decimal places. [3 marks]

15. A 15 m ladder has its foot 9 m from a vertical wall. How high does it reach? [3 marks]



Sketch not to scale

16. A student writes tan 30° = x/10, then x = 10/tan 30°. Correct the rearrangement and find x to two decimal places. [4 marks]