Pythagoras and Trigonometry - Practice paper 2

Name: _____ Date: _____

16 questions | 44 marks | 55 minutes

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

A scientific calculator may be used.

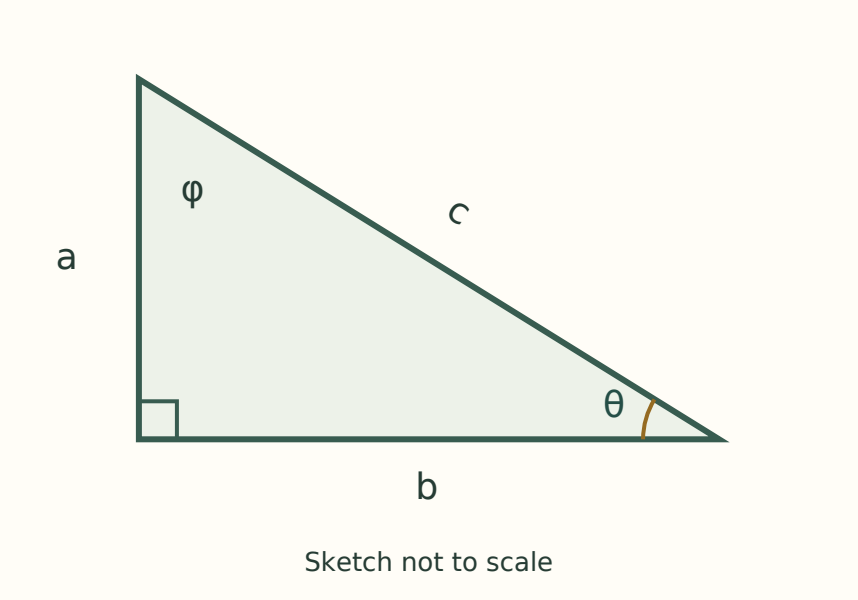
1. Triangle PQR is right-angled at R. Which side is the hypotenuse? [1 mark]

2. Find the hypotenuse with legs 9 cm and 40 cm. [2 marks]

3. Hypotenuse = 25 m and one leg = 7 m. Find the other leg. [2 marks]

4. Find the hypotenuse with legs 12 m and 13 m, exactly and to two decimal places. [3 marks]

5. Use upper angle φ instead of θ. Name opposite and adjacent. [2 marks]



Sketch not to scale

6. Enlarge a 5-12-13 triangle by 2.5. Find the three new side lengths and say whether the angles change. [3 marks]

7. You know adjacent and hypotenuse and need the acute angle. Which inverse function? [2 marks]

8. Explain why sin θ = 1.2 cannot describe an acute angle in a right triangle. [2 marks]

9. Find adjacent when h = 22 m and θ = 41°. Give two decimal places. [3 marks]

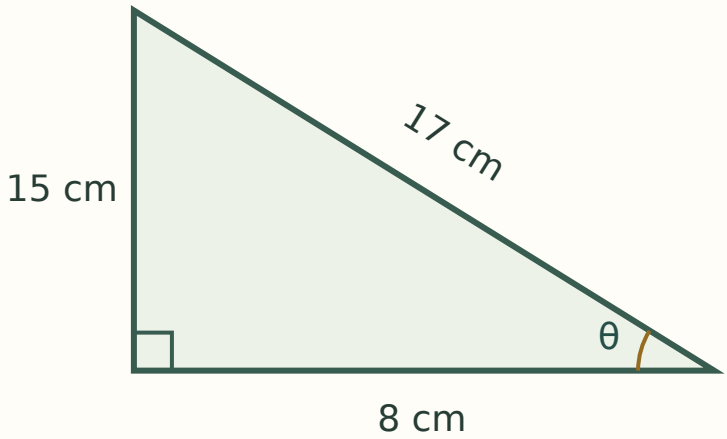
10. Find adjacent when o = 12 cm and θ = 32°. Give two decimal places. [3 marks]

11. Find hypotenuse when a = 7 cm and θ = 54°. Give two decimal places. [3 marks]

12. Find the acute angle opposite a 9 cm side when hypotenuse = 15 cm. Give two decimal places. [3 marks]

13. Find the angle with opposite 14 m and adjacent 20 m. Give two decimal places. [3 marks]

14. Find θ in the diagram to one decimal place. [3 marks]



Sketch not to scale

15. A ramp rises 0.8 m over a horizontal run of 6 m. Answer each part. [5 marks]

(a) Find the sloping length to two decimal places. [2 marks]

(b) Find the angle to horizontal to two decimal places. [3 marks]

16. A student says doubling all sides doubles the acute angles. Use side ratios to explain why this is false. [4 marks]