Perimeter, area and volume - topic test

Name: _____ Date: _____

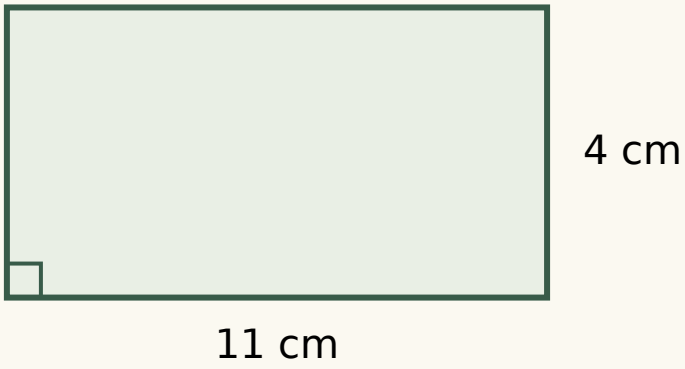
15 questions | 39 marks | 45 minutes

A progressive handwritten paper on units, boundary, area, circle circumference, prisms, nets and views.

No calculator needed.

1. Convert 4.2 m to centimetres. [1 mark]

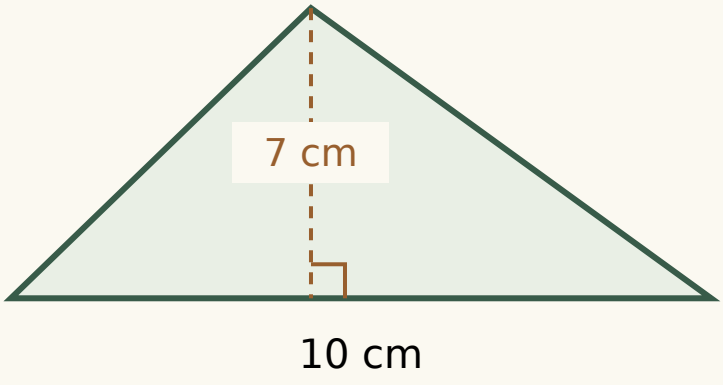
2. Find the perimeter of a rectangle 11 cm by 4 cm. [2 marks]



Sketch not to scale

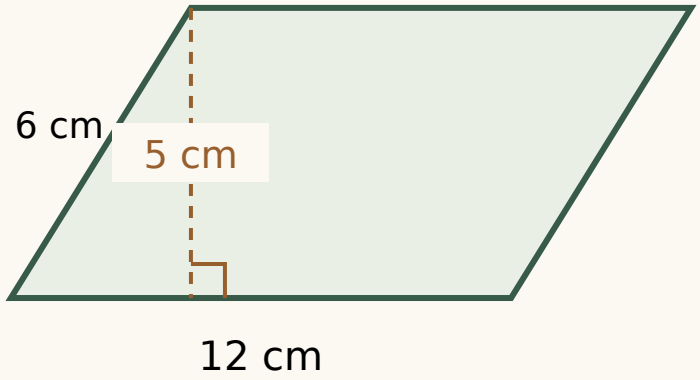
3. Find the area of a rectangle 8 m by 5 m. [1 mark]

4. A triangle has base 10 cm and perpendicular height 7 cm. Find its area. [2 marks]



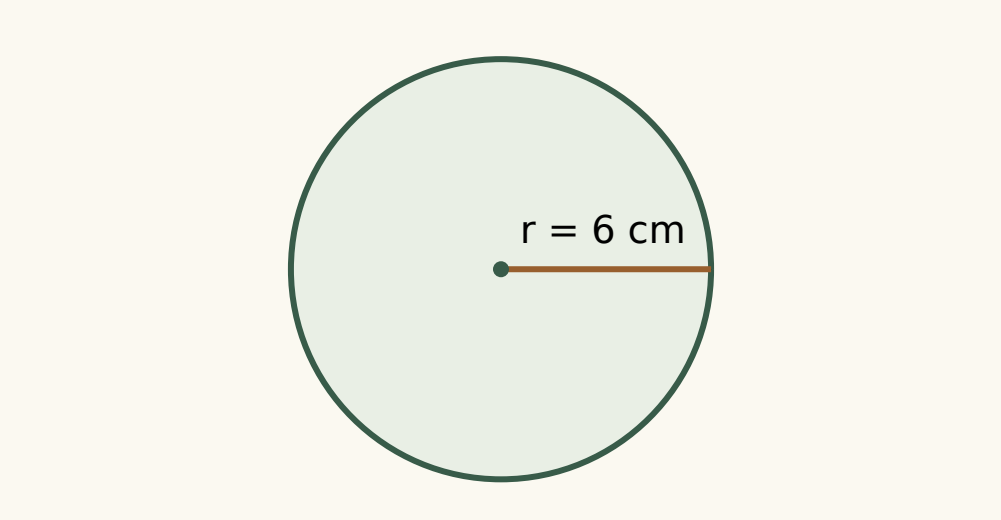
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5. The parallelogram has base 12 cm, perpendicular height 5 cm and sloping side 6 cm. Find its area. [2 marks]



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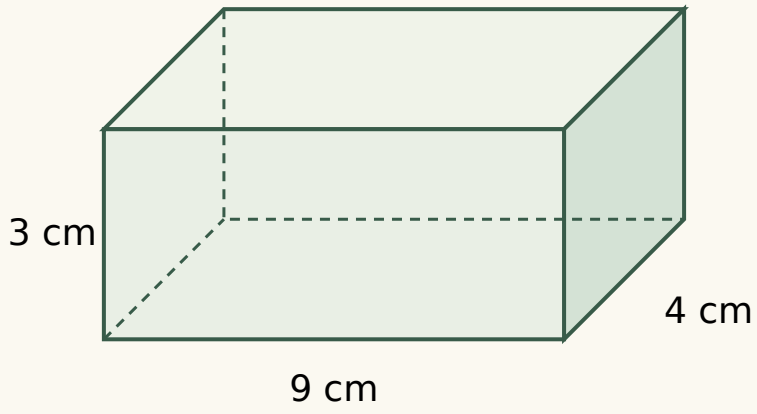
6. For a circle of radius 6 cm, find the diameter and exact circumference. [3 marks]



(a) Find the diameter. [1 mark]

(b) Find the circumference exactly. [2 marks]

7. Find the volume of a cuboid 9 cm by 4 cm by 3 cm. [2 marks]



Sketch not to scale

8. A bottle can hold 750 mL. Express this as a volume in cm^3 and as a capacity in litres. [2 marks]

(a) Give the volume in cm^3. [1 mark]

(b) Give the capacity in litres. [1 mark]

9. A cuboid is 8 cm by 5 cm by 2 cm. List the dimensions of its three pairs of opposite faces. [3 marks]

10. The diagram is a plan of cube stacks. Find the total number of cubes and draw the front elevation. [4 marks]

Top view: numbers show stack heights

1	2	1
1	0	0

RIGHT

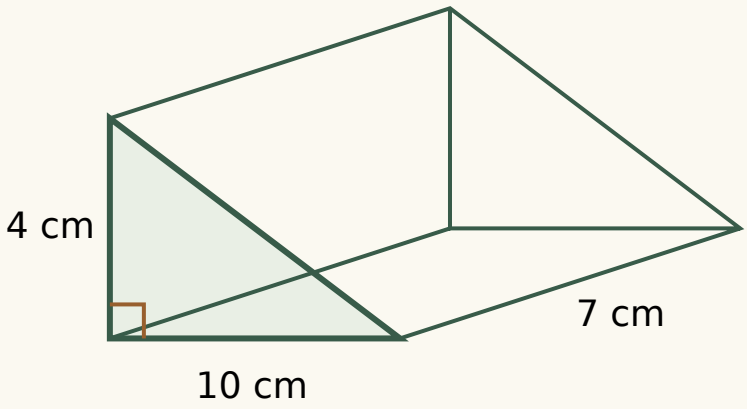
FRONT

(a) How many cubes are there? [2 marks]

(b) Draw the front elevation and state the column heights. [2 marks]

11. A rectangle has perimeter 46 m and length 15 m. Find its width. [3 marks]

12. Find the volume of the triangular prism. The end base is 10 cm, its perpendicular height is 4 cm, and the prism is 7 cm long. [3 marks]



Sketch not to scale

13. A semicircular border has diameter 8 m. Find the complete perimeter exactly, including the straight side. [3 marks]

14. A 14 m by 9 m rectangular garden has a 2 m gate. Find the fencing length and the garden area. [4 marks]

(a) How much fencing is needed? [2 marks]

(b) What is the garden area? [2 marks]

15. Two prisms have equal cross-section area. Prism A is 5 cm long and has volume 90 cm^3. Prism B is 12 cm long. Find the cross-section area and volume of B. Explain why doubling the prism length while keeping its cross-section unchanged would double its volume. [4 marks]

(a) Find the common cross-section area. [1 mark]

(b) Find the volume of B. [1 mark]

(c) Explain why doubling only the prism length, with its cross-section unchanged, doubles the volume. [2 marks]