Circles, area and volume - topic test

Name: _____ Date: _____

15 questions | 37 marks | 45 minutes

A progressive paper covering circle formulas, composite regions, units, cross-sections, volume and practical capacity.

No calculator needed.

1. A circle has radius 7 cm. State its diameter. [1 mark]

2. Find the circumference of a circle with radius 4 cm. Leave π in the answer. [2 marks]

3. A circle has diameter 12 m. Find its area exactly. [2 marks]

4. Convert 1.8 m² to cm². [2 marks]

5. A triangle has base 9 cm and perpendicular height 4 cm. Find its area. [2 marks]

6. Find the area of a semicircle with radius 5 cm. [2 marks]

7. Find the full perimeter of a semicircle with diameter 10 cm. [3 marks]

8. A 10 m by 7 m rectangle has a 3 m by 2 m corner removed. Find the remaining area. [2 marks]

9. Find the volume of a rectangular prism 6 cm by 5 cm by 4 cm. [2 marks]

10. A triangular prism has end base 8 cm, end perpendicular height 3 cm and length 5 cm. Find its volume. [3 marks]

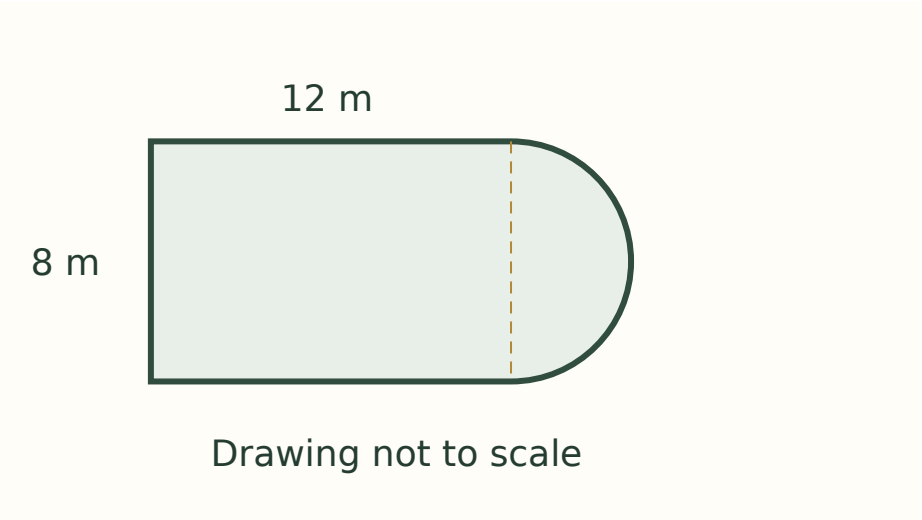
11. Find the volume of a cylinder with radius 3 cm and height 8 cm. Give an exact answer. [2 marks]

12. A prism has volume 84 cm^3 and cross-sectional area 12 cm^2. Find its length. [2 marks]

13. A tank has internal dimensions 1 m by 0.6 m by 0.5 m. It is half full. How many litres of water are in it? [3 marks]

14. A student converts 4 cm² to 40 mm². Explain the mistake and give the correct conversion. [3 marks]

15. A play area consists of a 12 m by 8 m rectangle with a semicircle attached along one 8 m side. Use the diagram. [6 marks]



(a) Find the total area exactly. [3 marks]

(b) Find the outside perimeter exactly. [3 marks]