Measurement and scale - Practice test 1

Name: _____ Date: _____

16 questions | 37 marks | 55 minutes

Composite solids, scale factors and reliable measurement.

A scientific calculator may be used.

1. Find surface area of a closed cube of edge 4 cm. [1 mark]

2. A $1:50$ drawing shows 7 cm. Find actual length in metres. [2 marks]

3. Similar solids have length factor 2. State their area factor. [1 mark]

4. A 16 cm reading is to the nearest centimetre. Give bounds. [2 marks]

5. Two 3 cm cubes share one whole face. Find outside area. [3 marks]

6. A 10 by 6 by 4 cm block has a 2 by 3 by 4 cm hole removed. Find remaining volume. [2 marks]

7. A similar solid has volume 15 cm^3 and length factor 3. Find new volume. [2 marks]

8. A 50 m measurement has error 0.5 m. Estimate percentage error using 50 m as reference. [2 marks]

9. Compare $9 \times (\frac{1}{9})$ exactly with 9×0.11. [2 marks]

10. A hollow cylinder has outer radius 4 cm, inner radius 2 cm, height 5 cm. Find material volume. [3 marks]

11. A cube of edge 4 cm supports a square-pyramid roof of slant height 3 cm. The square join is hidden. Find outside area. [3 marks]

12. A box measures 25 by 16 by 10 cm internally. Find capacity. [2 marks]

13. Similar shapes have areas 36 and 81 cm². A 10 cm side of the smaller matches what larger side? [3 marks]

14. Cut 2 cm corner squares from a 30 by 20 cm card and fold an open tray. Find capacity. [3 marks]

15. A design needs 4 m² plus 15% waste. Material costs 20 dollars per m². Find cost before whole-sheet constraints. [3 marks]

16. A tank model gives 493.67391 L from centimetre-rounded dimensions. Give sensible reporting and one limitation. [3 marks]