3D shapes and transformations topic test

Name: _____ Date: _____

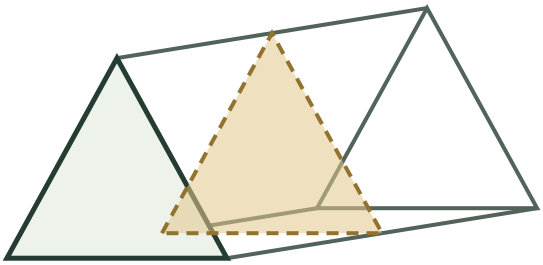
12 questions | 22 marks | 30 minutes

A handwritten review with shape diagrams, transformation reasoning and tessellation design.

No calculator needed.

1. What two features of the ends help identify a prism? [1 mark]

2. A triangular prism is cut parallel to its ends. Name the section. [1 mark]



Section parallel to the ends

Diagram not to scale

3. A rectangular prism has an end 4 cm by 2 cm. Find the area of a section parallel to the end. [2 marks]

4. Translate $(4, 2)$ by 2 right and 3 up. Give its image. [1 mark]

5. Reflect $(1, 3)$ in the line $x = 4$. Find its image. [2 marks]

6. Point $(2, 2)$ is translated 3 right and 1 down, then reflected in $x = 4$. Find its final position. [2 marks]

7. An equilateral triangle corner is 60°. How many such corners fill a point? [1 mark]

8. Explain why square tiles can meet four at a point. [2 marks]

9. A regular hexagon has 120° corners. Show how many corners fill one turn. [2 marks]

10. Three regular pentagons with 108° corners are put together at a point. How large is the gap? [2 marks]

11. Does reflecting a rectangle then translating it change its side lengths? Explain. [2 marks]

12. Design a rectangle tessellation in the space, with at least two rows and three columns. Mark one repeat unit and explain why the pattern is valid. [4 marks]



Draw a repeating tile pattern