Year 8 Coordinates and three-dimensional space - topic test

Name: _____ Date: _____

15 questions | 28 marks | 45 minutes

Work from short skills to connected reasoning and practical applications. Show enough working to explain each answer.

No calculator needed.

1. Write the x- and y-coordinates of $A(-2, 3)$. [1 mark]

2. Translate $(1, -2)$ three units left and four units up. [2 marks]

3. Reflect $(-3, 1)$ in the y-axis. [2 marks]

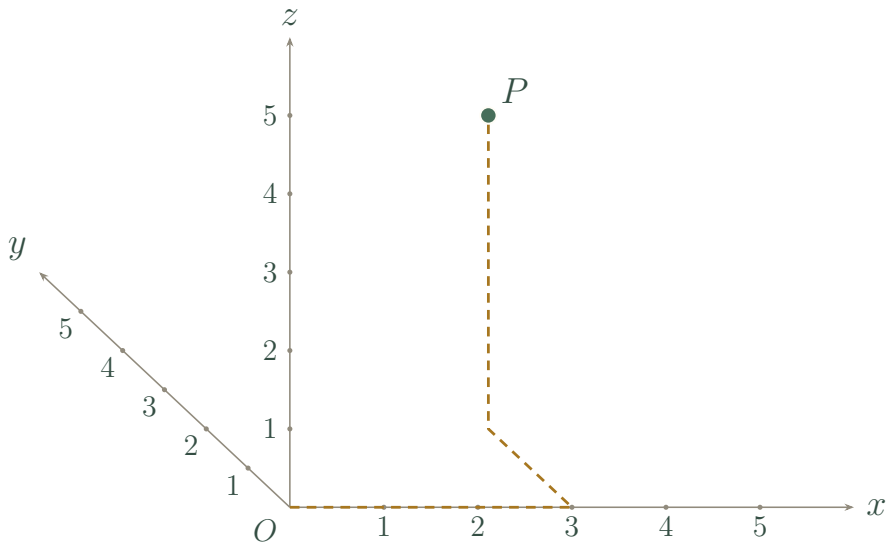
4. Rotate $(2, -1)$ 90° anticlockwise about the origin. [2 marks]

5. A crate is 4 units across, 3 units in depth and 2 units high. Write (x, y, z). [1 mark]

6. Which point lies on the xy-plane: $A(2, 0, 3)$, $B(3, 1, 0)$ or $C(0, 2, 1)$? Explain. [2 marks]

7. Which axis contains $(0, 4, 0)$? [1 mark]

8. State P's coordinates from the labelled 3D diagram. [2 marks]



9. From $(2, 3, 1)$, move parallel to z until the height is 5. Give the endpoint. [2 marks]

10. Start at $(1, 1, 0)$. Move 3 units in positive x, 2 in positive z and 1 in negative y. Give endpoint and route length. [3 marks]

11. A robot moves from $(2, 2, 1)$ to $(5, 1, 3)$, changing one coordinate at a time without reversing. Find the route length. [2 marks]

12. A camera's front view shows x, z. Find the front view of $(4, 2, 3)$. [1 mark]

13. A point has front view $(3, 5)$ on x, z and top view $(3, 2)$ on x, y. Find its triple. [2 marks]

14. $A(2, 1, 4)$ and $B(2, 3, 4)$ look like one point in the front view on x, z. Explain why that does not mean $A = B$. [2 marks]

15. A delivery robot starts at $(1, 2, 0)$, moves 4 units in positive x, 3 units in positive z, then returns along exactly the same route. State its final position and total distance. [3 marks]