Year 5 Coordinates and transformations topic test

12 questions | 21 marks | 30 minutes

Read, plot and move points, then explain transformations and symmetry. Grids use one-unit squares unless stated otherwise.

Equivalent correct methods earn the corresponding marks.

1. Name the horizontal and vertical axes. [2 marks]

The first coordinate is read on x and the second on y.

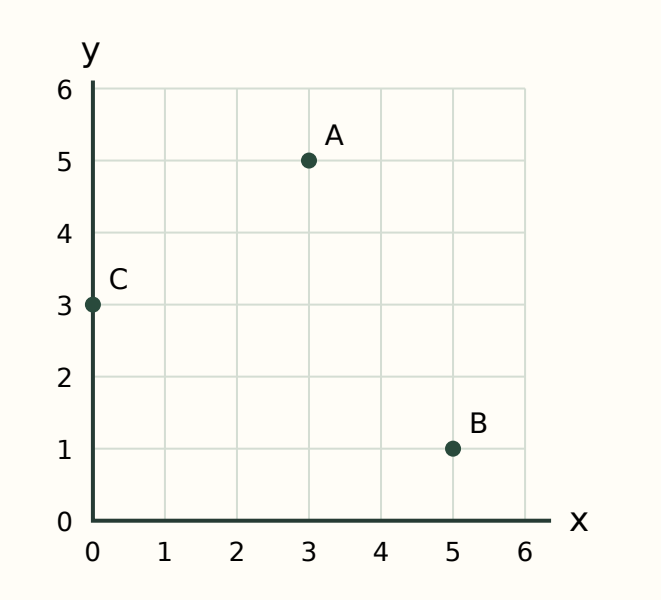
Answer: Horizontal: x-axis; vertical: y-axis.

2. An axis has equal intervals labelled 0, 2, 4, __, 8. Fill the gap. [1 mark]

Each interval increases by 2.

Answer: 6

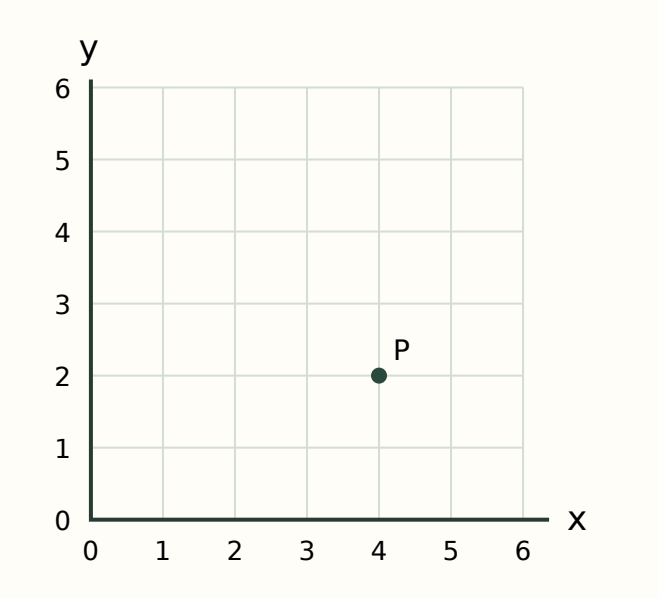
3. Read A from the supplied grid. [1 mark]



Read 3 along x, then 5 along y.

Answer: (3, 5)

4. Plot and label P(4, 2) on the one-unit grid. [1 mark]



Use x before y.

Answer: P at 4 across and 2 up.

5. Which lies on the y-axis: (3,0), (0,3) or (3,3)? [1 mark]

A y-axis point has x = 0.

Answer: (0, 3)

6. Start at (2, 1), then move 3 right and 4 up. Find the endpoint. [2 marks]

(2,1) → (5,1) → (5,5).

Answer: (5, 5)

7. Give a horizontal/vertical route from (5, 4) to (1, 2), and its length along grid lines. [2 marks]

4 + 2 = 6 grid-line units.

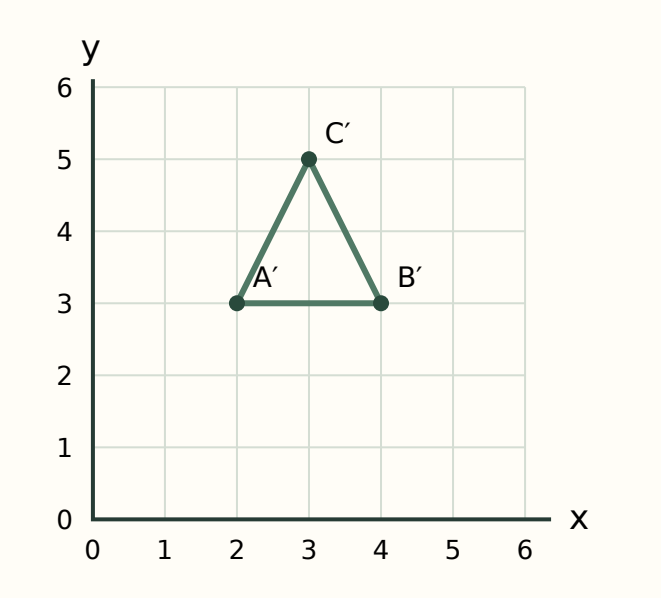
Answer: 4 left and 2 down; 6 units.

8. A robot finishes at (4, 2) after moving left 2 and down 3. Find its start. [2 marks]

Reverse the route: up 3, then right 2.

Answer: (6, 5)

9. Translate A(1,2), B(3,2), C(2,4) by 1 right and 1 up. Give all image coordinates. [3 marks]

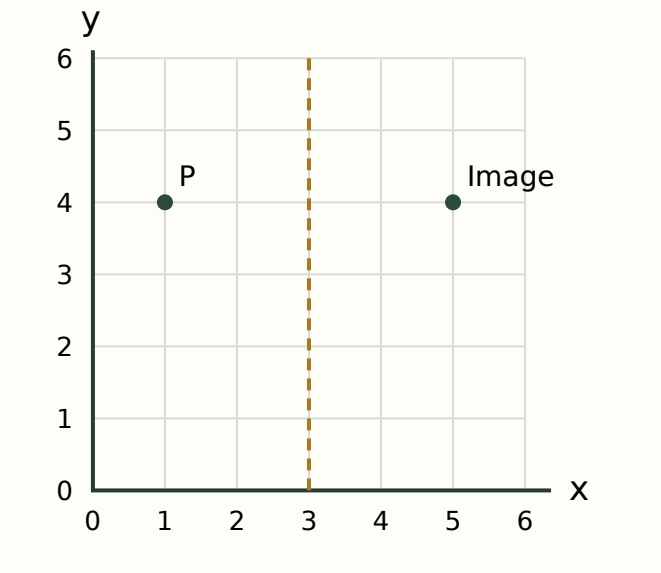


Add 1 to the x-coordinate and 1 to the y-coordinate of every vertex.

A: (1 + 1, 2 + 1) = (2,3). B: (3 + 1, 2 + 1) = (4,3). C: (2 + 1, 4 + 1) = (3,5).

Answer: A′(2,3), B′(4,3), C′(3,5).

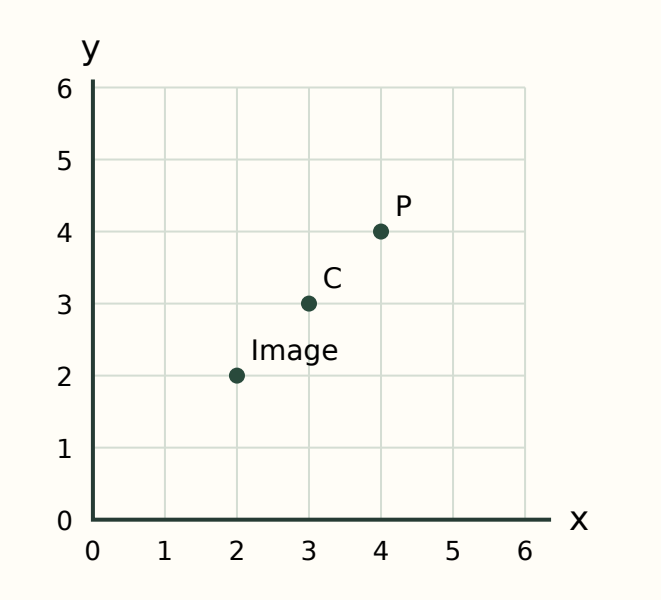
10. Reflect P(1, 4) across x = 3. Find the image coordinates. [2 marks]



P is 2 left of the mirror; the image is 2 right at the same height.

Answer: (5, 4)

11. Rotate P(4, 4) a half turn about C(3, 3). Give its image coordinates. [2 marks]



The offset 1 right and 1 up becomes 1 left and 1 down.

Answer: (2, 2)

12. A diagonal divides a non-square rectangle into equal areas. Does that make it a symmetry line? Explain. [2 marks]

The whole outline must match under reflection.

Answer: No. Reflection across the diagonal does not match the long and short sides.