Pumpkin Graph: First-Quadrant Coordinate Plotting

Original tasks 1, 2, 3 / complete keys

Task 1

Plot and connect in order: (2, 1), (5, 1), (5, 4), (2, 4). Describe the shape and state whether the path is closed.

Answer: A rectangle with corners (2, 1), (5, 1), (5, 4), (2, 4). The path is open because the list does not connect (2, 4) back to (2, 1).

Reason: The first segment is horizontal at y = 1 from x = 2 to x = 5. The second is vertical at x = 5 from y = 1 to y = 4. The third is horizontal at y = 4 from x = 5 to x = 2. No fourth segment is listed.

Check: Confirm each point by counting right then up from the origin, and trace the three segments in order.

Task 2

A list contains (3, 2), (3, 6), (6, 6). Plot and connect in order. What are the coordinates of the missing fourth corner that would complete a rectangle, and should it be connected to close the shape?

Answer: The missing corner is (6, 2). Connecting (6, 6) to (6, 2) and then to (3, 2) would close the rectangle, but only if the list instructs those connections.

Reason: The given points form a vertical left side from (3, 2) to (3, 6) and a top side from (3, 6) to (6, 6). A rectangle needs a right side down to y = 2 and a bottom side back to x = 3, giving (6, 2).

Check: Verify that (6, 2) shares x = 6 with (6, 6) and y = 2 with (3, 2), then confirm the list's closing instruction.

Task 3

Plot these points in order: (1, 3), (2, 5), (4, 6), (6, 5), (7, 3). Connect them. Is the path symmetric about x = 4? Explain using the coordinates.

Answer: The path is symmetric about x = 4 because (1, 3) mirrors (7, 3), (2, 5) mirrors (6, 5), and (4, 6) lies on the midline.

Reason: For a vertical midline x = 4, a point (a, b) mirrors to (8 - a, b). Checking: 8 - 1 = 7, 8 - 2 = 6, and 8 - 4 = 4, so the listed points pair correctly.

Check: For each point, compute 8 minus the x-value and confirm the mirrored point appears in the list with the same y-value.

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Original tasks 4 / complete keys

Task 4

Plot and connect in order: (2, 2), (2, 5), (5, 5), (5, 2), (2, 2). What shape is drawn, and how many segments are used?

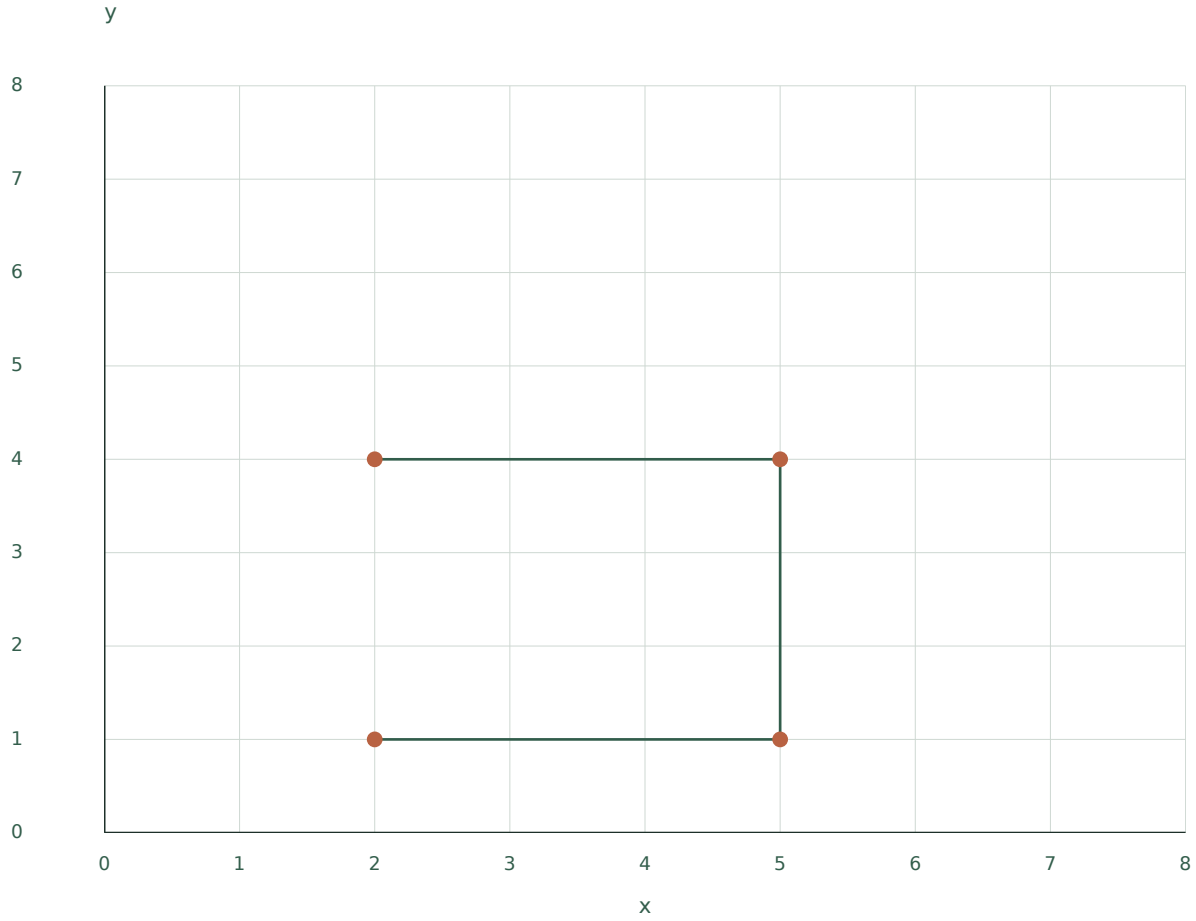
Answer: A square with corners (2, 2), (2, 5), (5, 5), (5, 2). Four segments are used, and the path is closed because the last point returns to the first.

Reason: The side lengths are 3 units each: vertical from y = 2 to y = 5, horizontal from x = 2 to x = 5, vertical down to y = 2, and horizontal back to x = 2. The repeated first point closes the shape.

Check: Count the four consecutive segments and confirm the last ordered pair equals the first.

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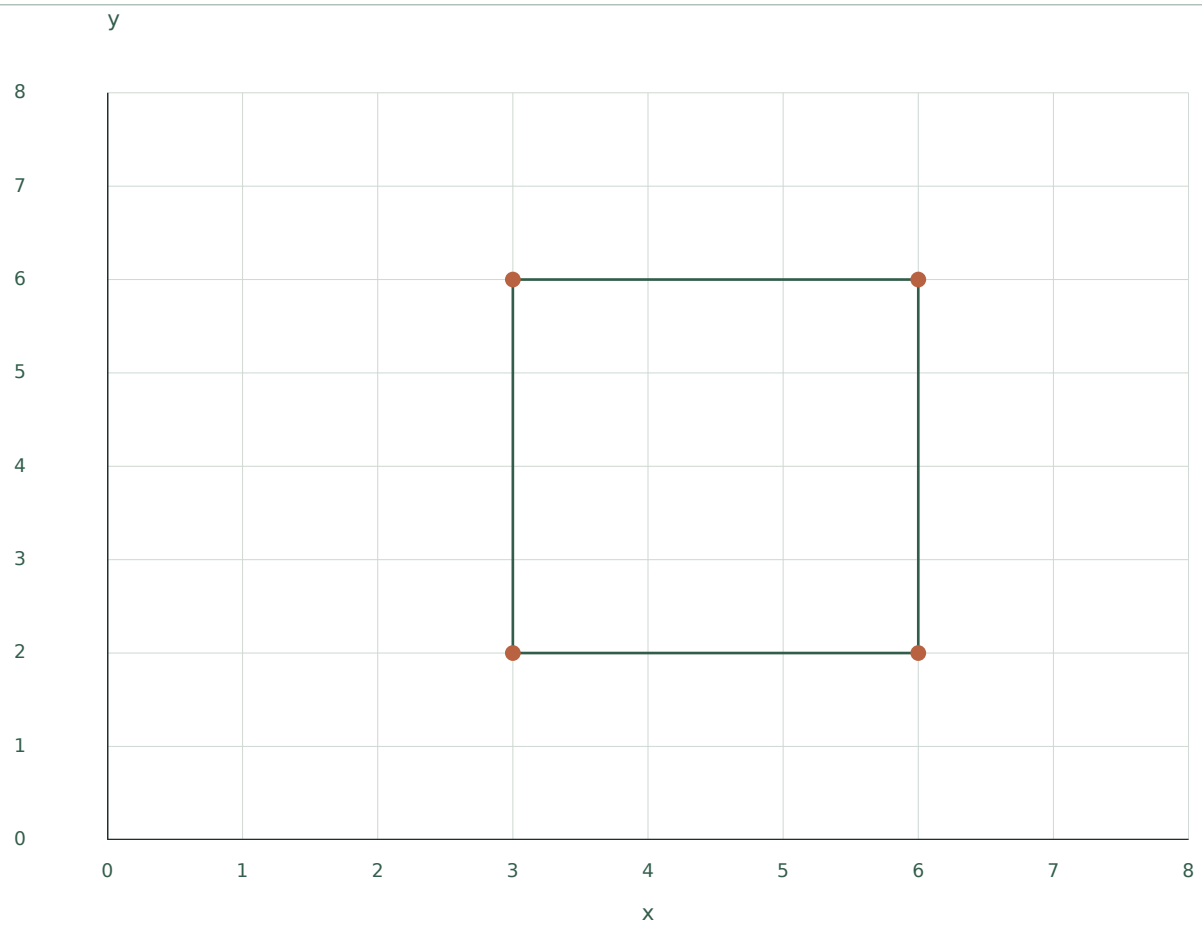
Task 1 / graph key



Connect only the specified ordered points; a path closes only when the final segment returns to its start.

Pumpkin Graph: First-Quadrant Coordinate Plotting

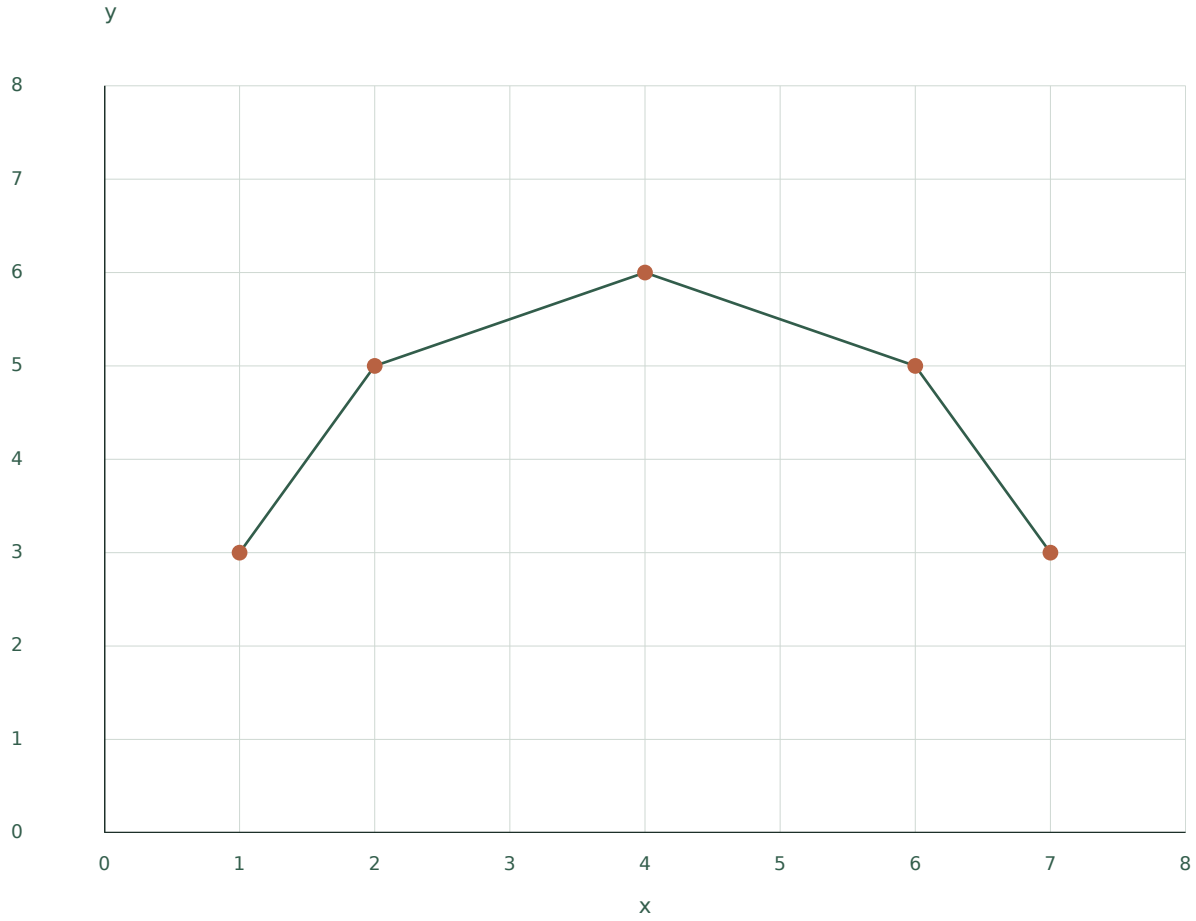
Task 2 / graph key



Completed rectangle after adding missing corner (6,2) and the two explicitly discussed closing segments. The original three-point input alone remains open.

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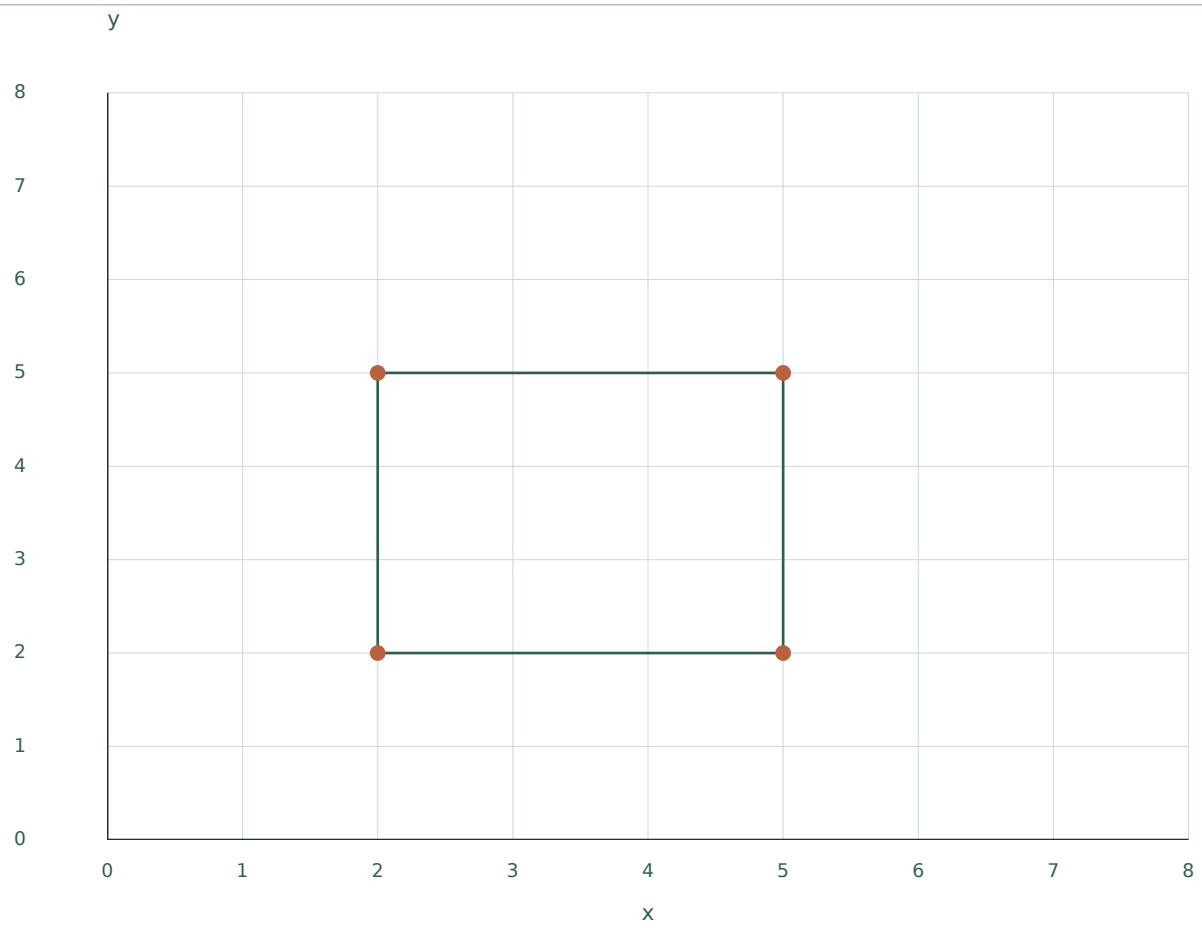
Task 3 / graph key



Connect only the specified ordered points; a path closes only when the final segment returns to its start.

Pumpkin Graph: First-Quadrant Coordinate Plotting

Task 4 / graph key



Connect only the specified ordered points; a path closes only when the final segment returns to its start.

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Source rubric / reflection

- [ ] All 30 ordered pairs are plotted on the correct grid intersections within one grid unit.
- [ ] Consecutive points are connected in the listed order with straight segments.
- [ ] The shape is closed only if the list explicitly instructs it.
- [ ] Labels or dots are clear enough to identify each plotted point.
- [ ] Valid alternative handwriting or letter styles are accepted; grading focuses on placement and order.

Reflection: What did you check, what did you change, and what will you try next?