Graphing Functions on Restricted Domains with Endpoint Marks

Original tasks 1, 2, 3 / complete keys

Task 1

Graph f(x) = x + 2 for the domain [0, 3]. State the endpoint coordinates and dot styles.

Answer: Closed dot at (0, 2); closed dot at (3, 5); straight segment connecting them.

Reason: Both brackets mean both endpoints are included. f(0) = 2 and f(3) = 5. The function is linear, so the segment is straight.

Check: Recompute f(0) and f(3); confirm both dots are filled and the segment does not extend past x = 0 or x = 3.

Task 2

Graph f(x) = x^2 for the domain (1, 3]. State endpoint coordinates and dot styles, and give one interior point.

Answer: Open dot at (1, 1); closed dot at (3, 9); interior point (2, 4); smooth curve connecting them.

Reason: Parenthesis at 1 means open; bracket at 3 means closed. f(1) = 1, f(3) = 9, f(2) = 4. The curve is part of a parabola.

Check: Verify f(1) = 1 and f(3) = 9; confirm open dot at x = 1 and closed dot at x = 3; check that (2, 4) lies on the plotted curve.

Task 3

Graph f(x) = 3 - x for the domain [2, 5). State endpoint coordinates and dot styles.

Answer: Closed dot at (2, 1); open dot at (5, -2); straight segment connecting them.

Reason: Bracket at 2 means closed; parenthesis at 5 means open. f(2) = 1 and f(5) = -2. Linear function gives a straight segment.

Check: Recompute f(2) = 1 and f(5) = -2; confirm closed dot at x = 2 and open dot at x = 5; ensure no extension beyond endpoints.

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Original tasks 4 / complete keys

Task 4

Graph f(x) = 2x - 1 for the domain (-2, 2). State endpoint coordinates and dot styles, and give one interior point.

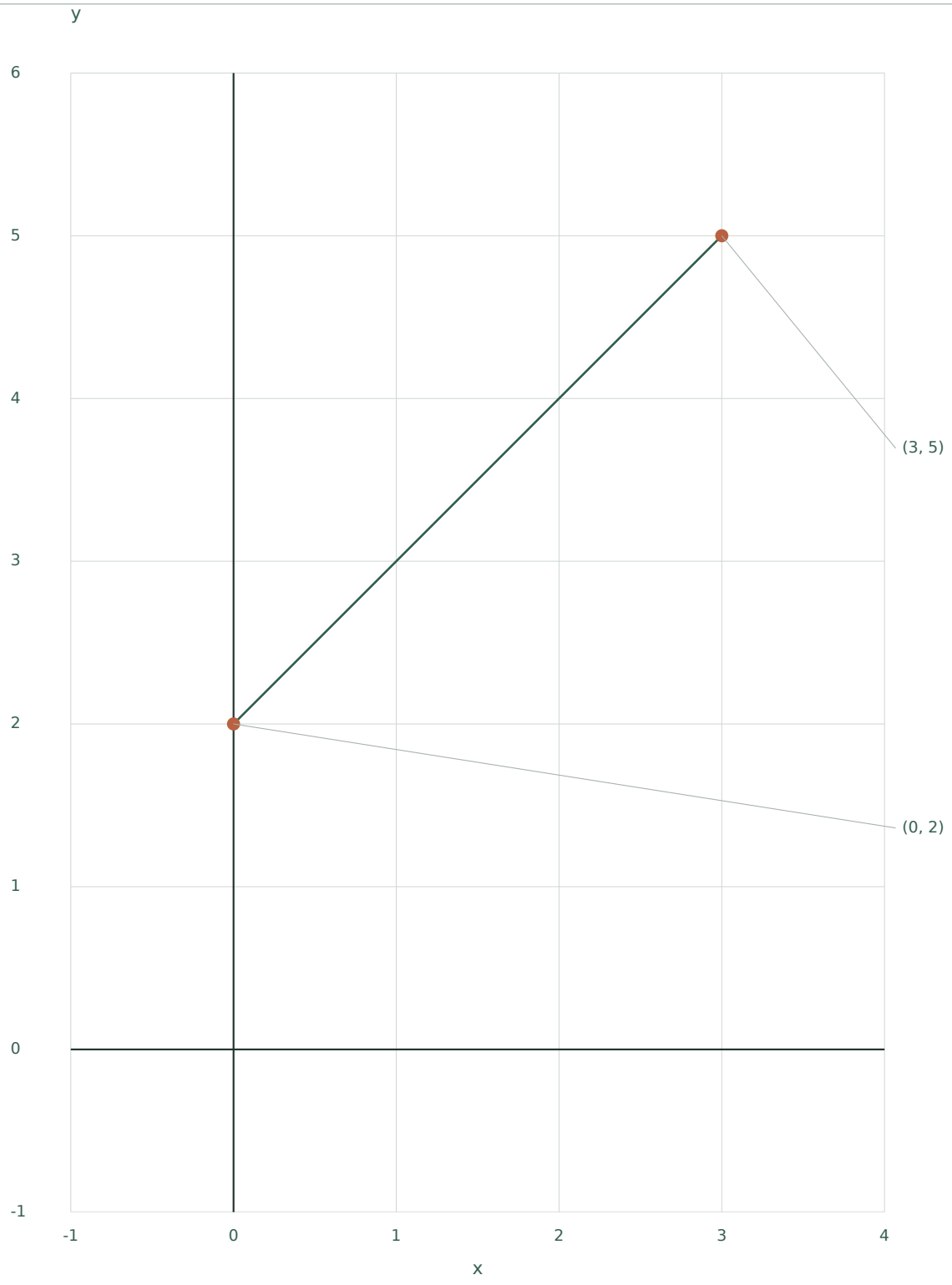
Answer: Open dot at (-2, -5); open dot at (2, 3); interior point (0, -1); straight segment connecting them.

Reason: Both parentheses mean both endpoints are excluded. f(-2) = -5, f(2) = 3, f(0) = -1. Linear function gives a straight segment.

Check: Verify f(-2) = -5 and f(2) = 3; confirm both dots are unfilled; check that (0, -1) lies on the segment and the graph stops at x = -2 and x = 2.

Graphing Functions on Restricted Domains with Endpoint Marks

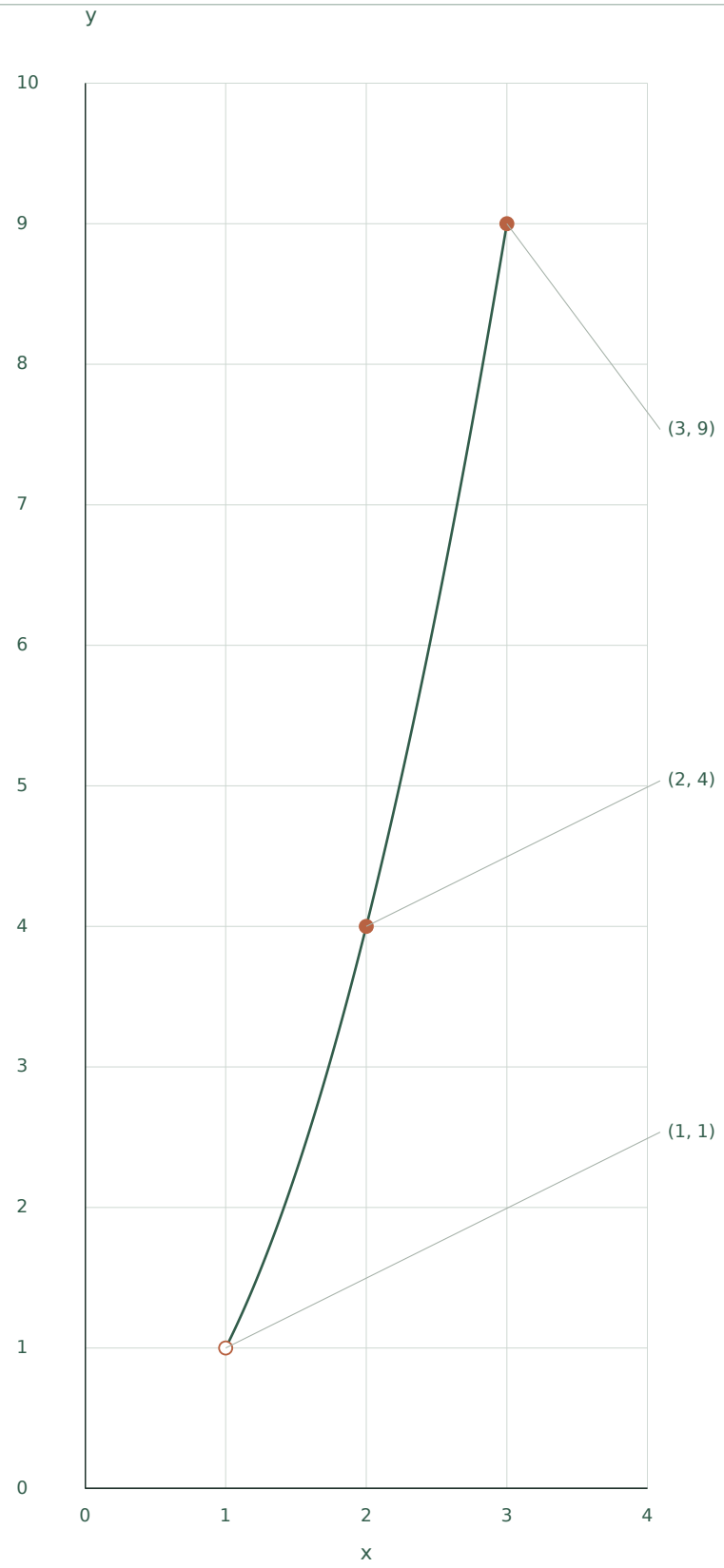
Answer graph: f(x) = x + 2 on [0, 3]



Answer key: closed dots at both endpoints; straight segment from (0, 2) to (3, 5). Coordinate labels sit outside the plot; thin grey leaders are annotations, not function curves.

Graphing Functions on Restricted Domains with Endpoint Marks

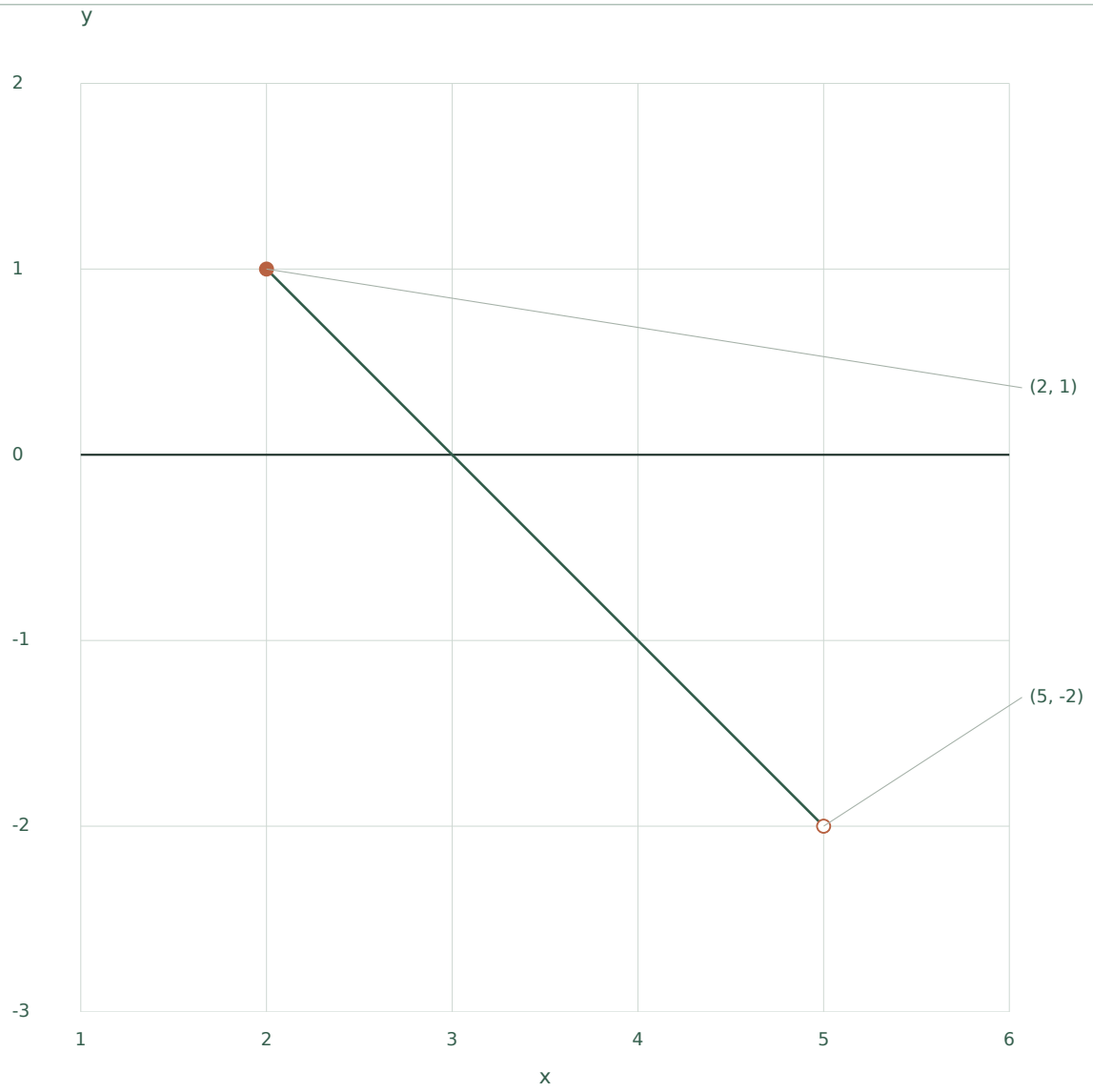
Answer graph: f(x) = x^2 on (1, 3]



Answer key: open dot at (1, 1), closed dot at (3, 9), interior point (2, 4), smooth parabolic arc. Coordinate labels sit outside the plot; thin grey leaders are annotations, not function curves.

Graphing Functions on Restricted Domains with Endpoint Marks

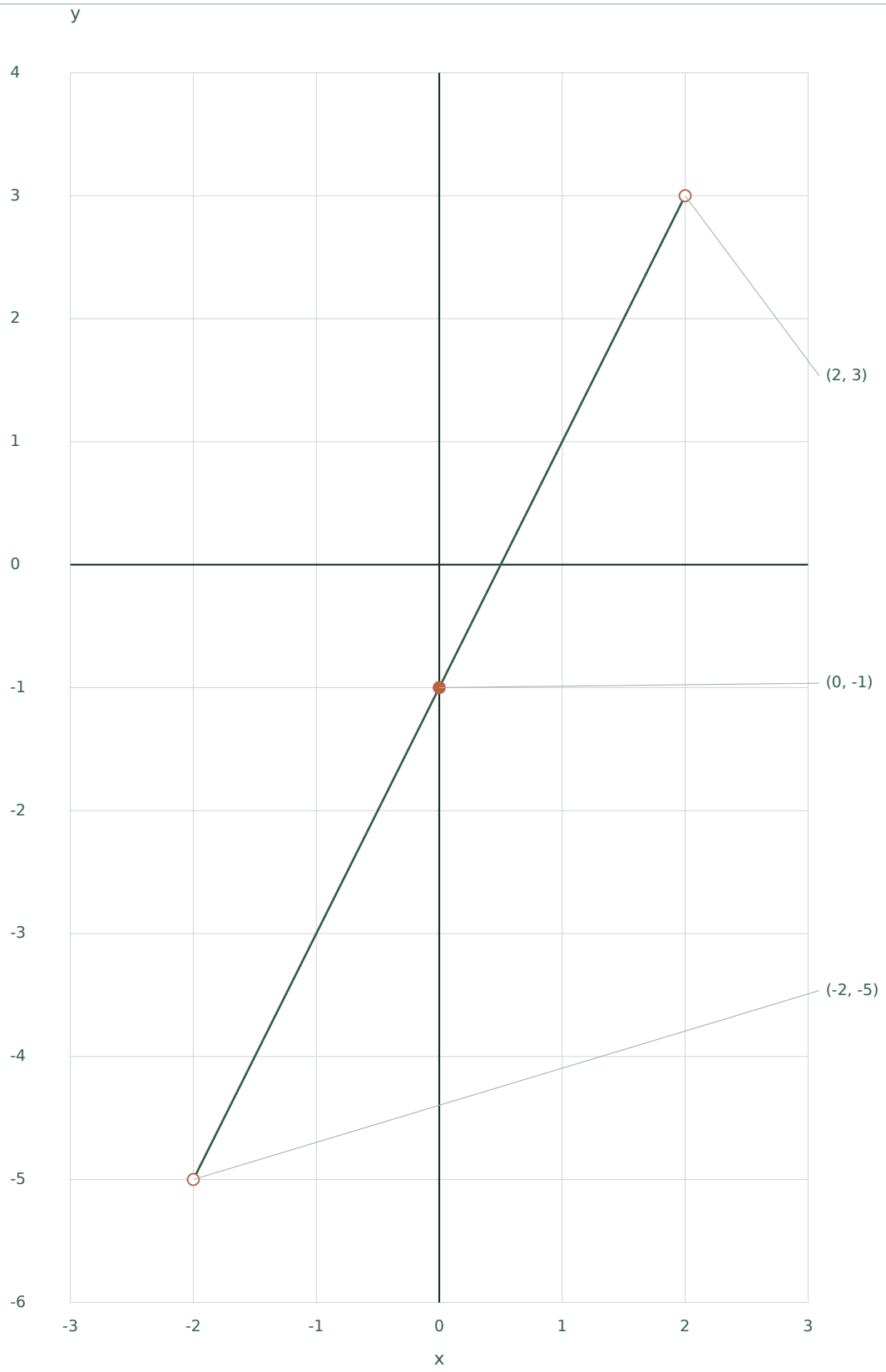
Answer graph: f(x) = 3 - x on [2, 5)



Answer key: closed dot at (2, 1), open dot at (5, -2), straight segment only between x = 2 and x = 5. Coordinate labels sit outside the plot; thin grey leaders are annotations, not function curves.

Graphing Functions on Restricted Domains with Endpoint Marks

Answer graph: f(x) = 2x - 1 on (-2, 2)



Answer key: open dots at both endpoints, interior point (0, -1), straight segment only between x = -2 and x = 2. Coordinate labels sit outside the plot; thin grey leaders are annotations, not function curves.

Graphing Functions on Restricted Domains with Endpoint Marks

Source rubric / reflection

- [ ] Endpoint x-values match the stated interval.
- [ ] Endpoint y-values are computed correctly from the function rule.
- [ ] Closed endpoints use filled dots; open endpoints use unfilled dots.
- [ ] Graph stays within the interval and does not extend beyond endpoints.
- [ ] Interior points are consistent with the function rule.
- [ ] Dot styles are visually unambiguous; valid alternative drawing styles are accepted if inclusion or exclusion is clear.

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