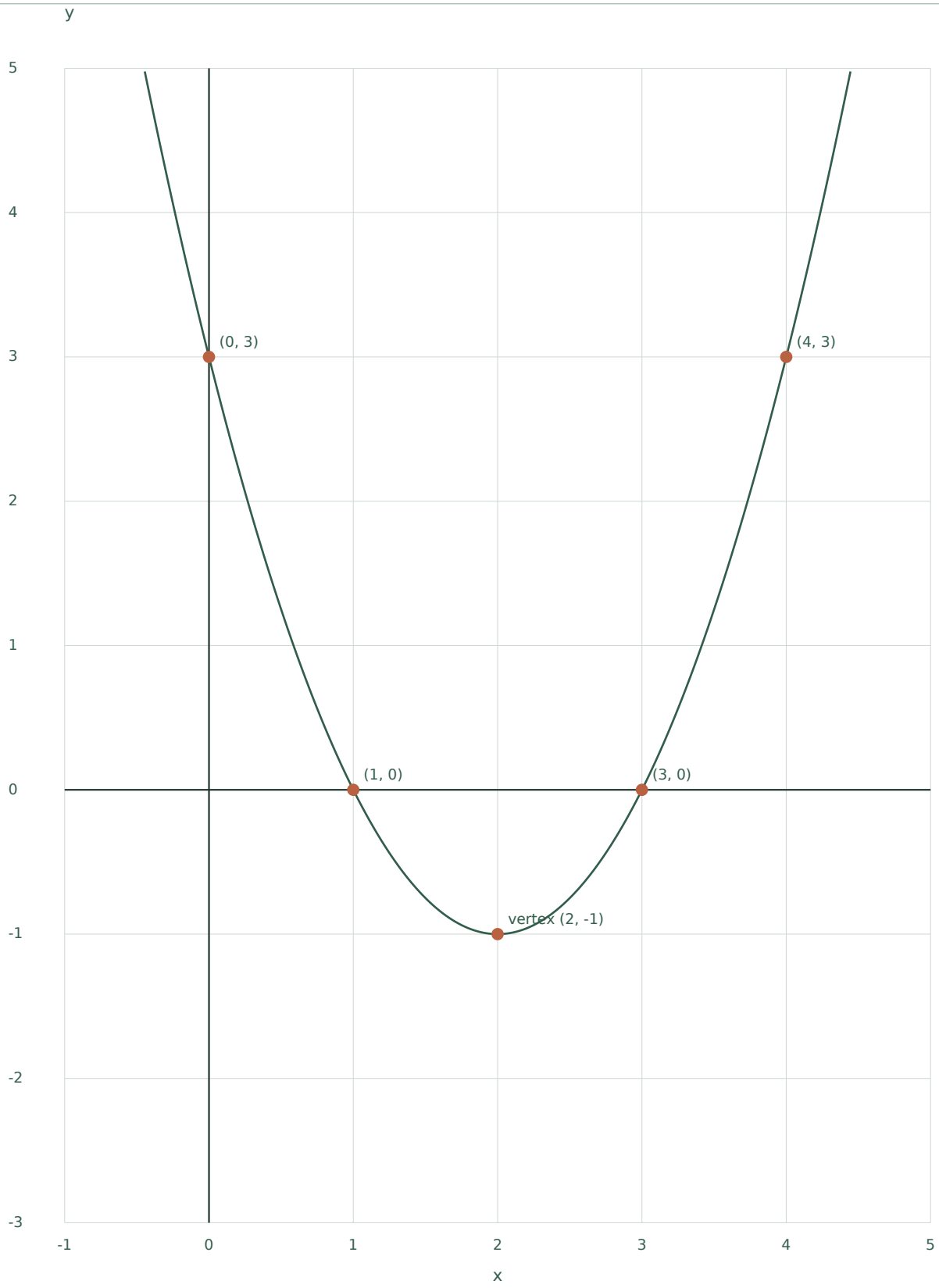
Graph Quadratics in Standard Form: Vertex, Intercepts, and Points

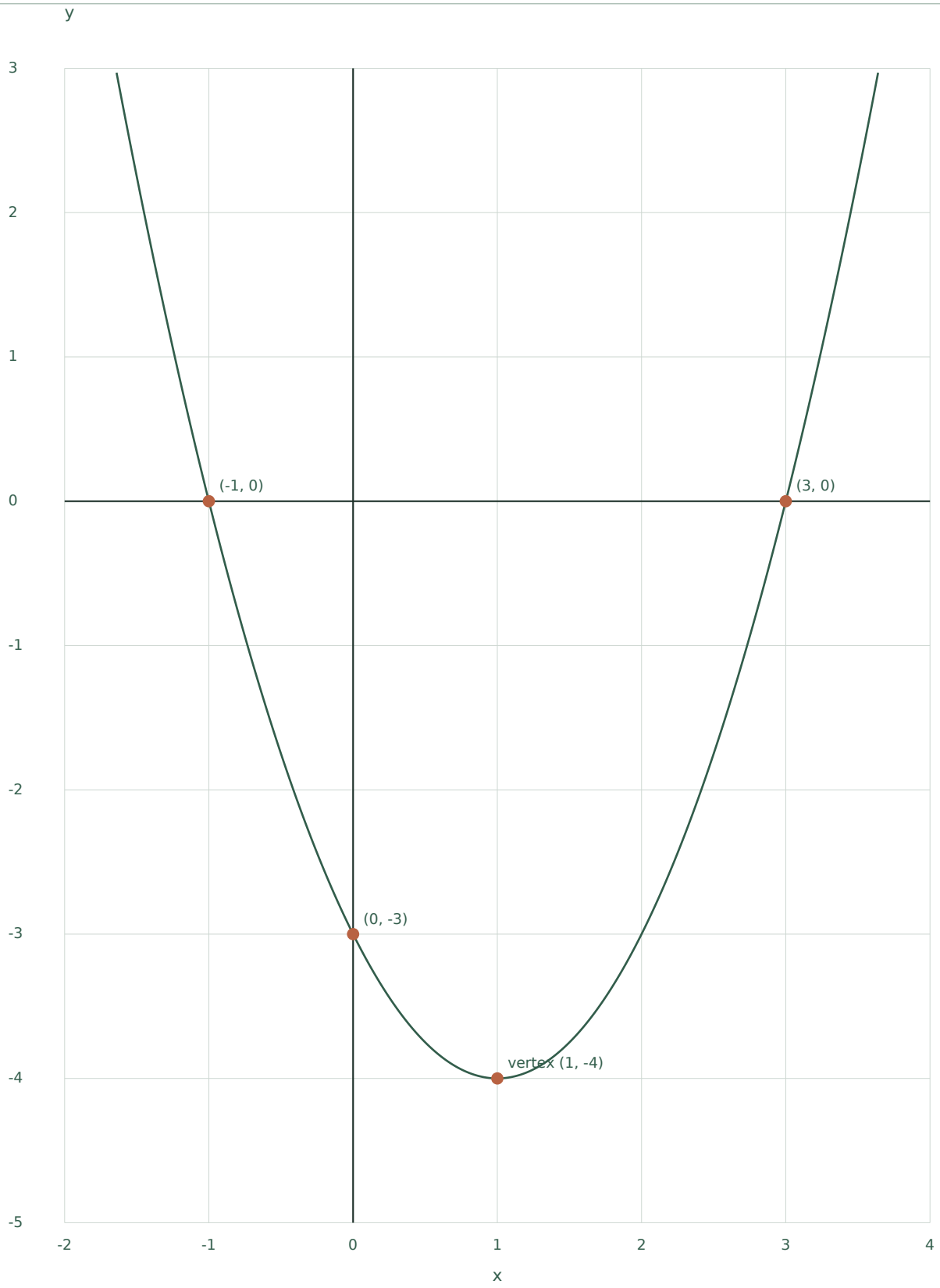
Worked example: y = x^2 - 4x + 3



Axis of symmetry x = 2 is the vertical line through the vertex; the symmetric pair (0, 3) and (4, 3) is equidistant from it.

Graph Quadratics in Standard Form: Vertex, Intercepts, and Points

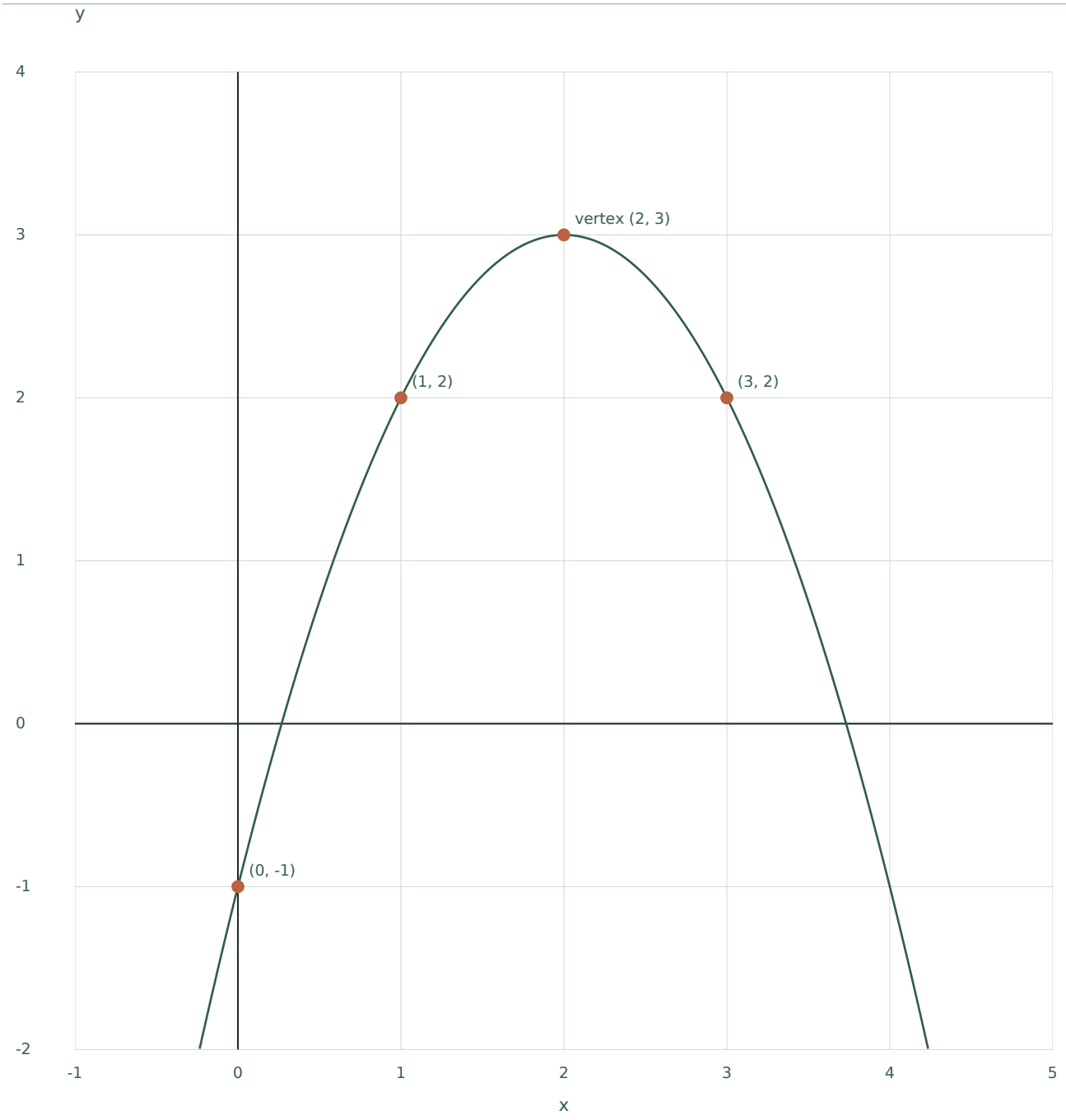
Answer graph: Task 1 y = x^2 - 2x - 3



Opens upward because a = 1 > 0.

Graph Quadratics in Standard Form: Vertex, Intercepts, and Points

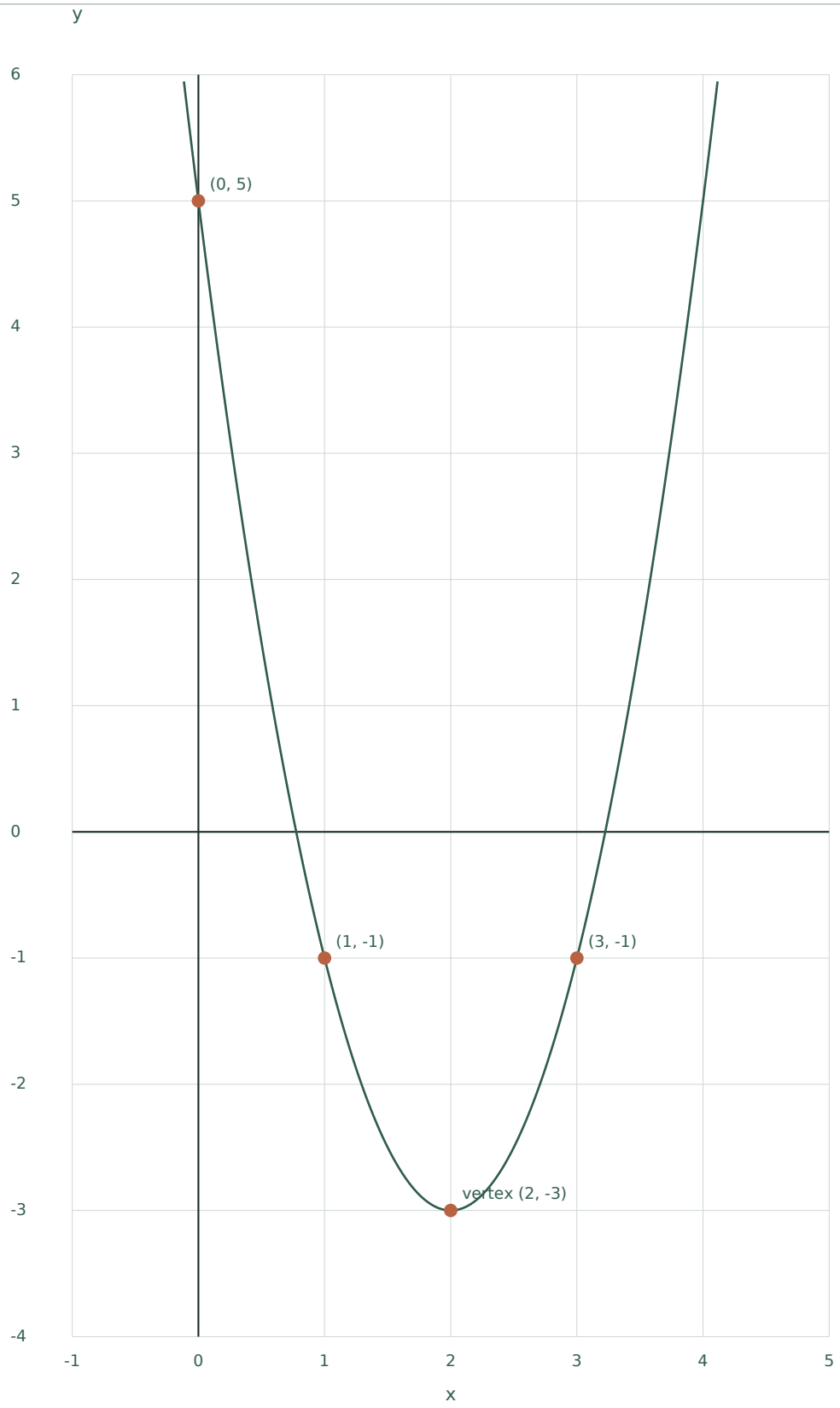
Answer graph: Task 2 y = -x^2 + 4x - 1



Opens downward because a = -1 < 0.

Graph Quadratics in Standard Form: Vertex, Intercepts, and Points

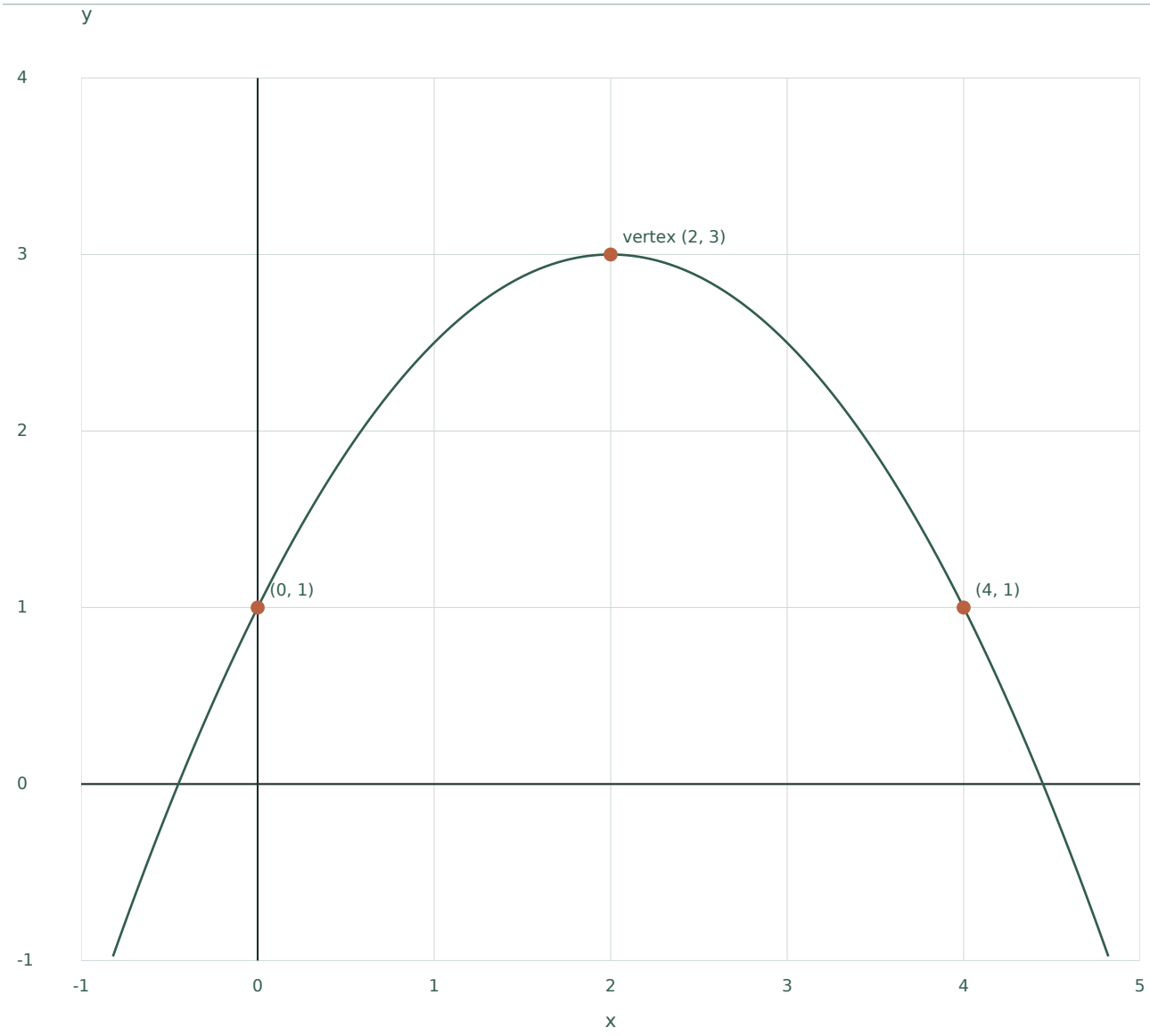
Answer graph: Task 3 y = 2x^2 - 8x + 5



Opens upward because a = 2 > 0.

Graph Quadratics in Standard Form: Vertex, Intercepts, and Points

Answer graph: Task 4 y = -0.5x^2 + 2x + 1



Opens downward because a = -0.5 < 0. Scale is consistent on both axes.

Graph Quadratics in Standard Form: Vertex, Intercepts, and Points

Answer key summary

Summary of axis, vertex, y-intercept, and symmetric points for each task.

Task	Axis	Vertex	y-intercept
1	x = 1	(1, -4)	(0, -3)
2	x = 2	(2, 3)	(0, -1)
3	x = 2	(2, -3)	(0, 5)
4	x = 2	(2, 3)	(0, 1)

Graph Quadratics in Standard Form: Vertex, Intercepts, and Points

Rubric key

Rubric criteria for grading the four tasks.

Axis of symmetry correctly computed as x = -b/(2a).

Vertex coordinates correctly found by substituting the axis value into the equation.

y-intercept correctly identified as (0, c).

x-intercepts correctly solved or explicitly noted as non-real.

At least one symmetric pair of points plotted and used to check the curve.

Curve is smooth and opens in the direction indicated by the sign of a.','Labels for vertex, axis of symmetry, and intercepts are clear and consistent with the graph.']}}],