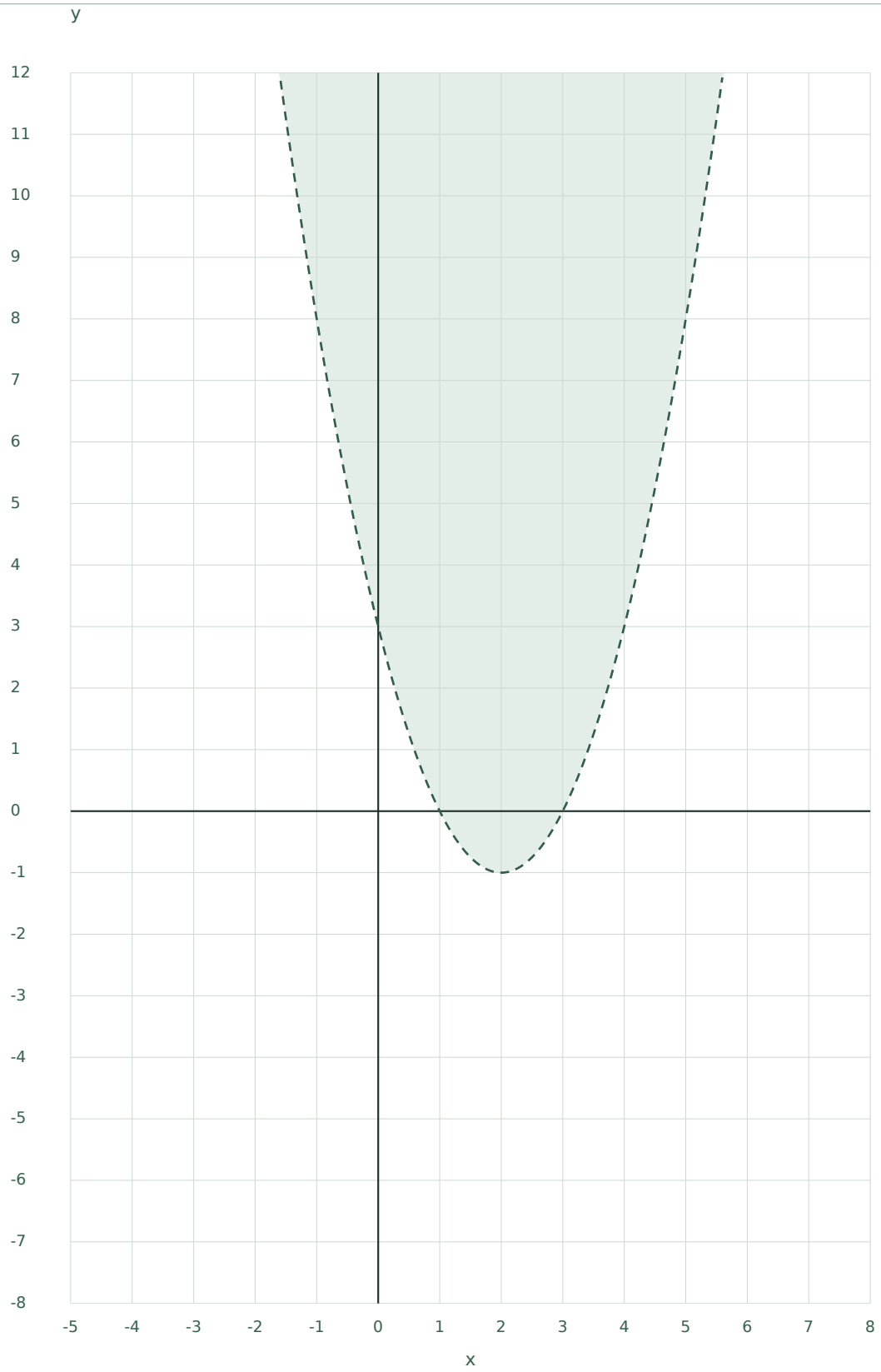
Graph Quadratic Inequalities: Shade the Solution Region

Worked graph



The shaded region is on the requested side of the parabola. Strict comparisons use a dashed boundary.

Graph Quadratic Inequalities: Shade the Solution Region

Original worked example / unchanged complete key

Prompt: Graph the inequality y > x^2 - 4x + 3. Find the vertex, intercepts, decide dashed or solid, and shade the solution region.

Answer: Related equation: y = x^2 - 4x + 3. Vertex x = -(-4)/(2*1) = 2; vertex y = 2^2 - 4*2 + 3 = -1, so vertex (2, -1). y-intercept (0, 3). Solve x^2 - 4x + 3 = 0: (x-1)(x-3)=0, so x-intercepts (1,0) and (3,0). Since inequality is strict (>), draw a dashed parabola opening upward. Test point (0,0): 0 > 0^2 - 4*0 + 3 = 3 is false, so shade the region not containing (0,0), which is above the parabola. The shaded region is above the dashed parabola.