Find the following and then sketch the graph of $f(x) = -(x-2)^2$

Opens down

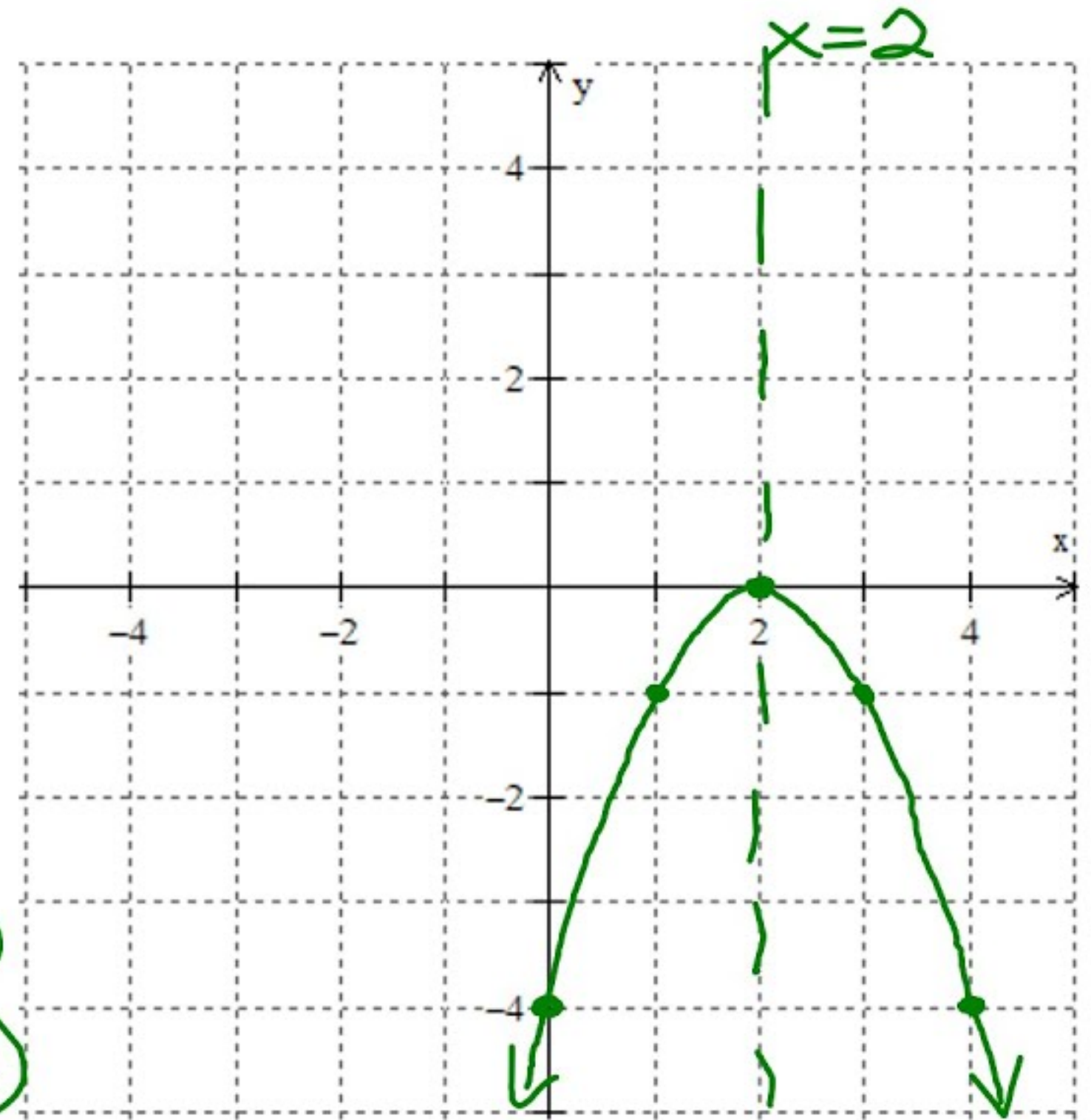Vertex $(2, 0)$

Axis of symmetry $x = 2$

y-intercept $(0, -4)$

x-intercept $(2, 0)$

$f(1) = -(1-2)^2 = -(-1)^2 = -1 \quad (1, -1)$

$f(3) = -(3-2)^2 = -(1)^2 = -1 \quad (3, -1)$

$f(4) = -(4-2)^2 = -(2)^2 = -4 \quad (4, -4)$

Domain $(-\infty, \infty)$ Range $(-\infty, 0]$