

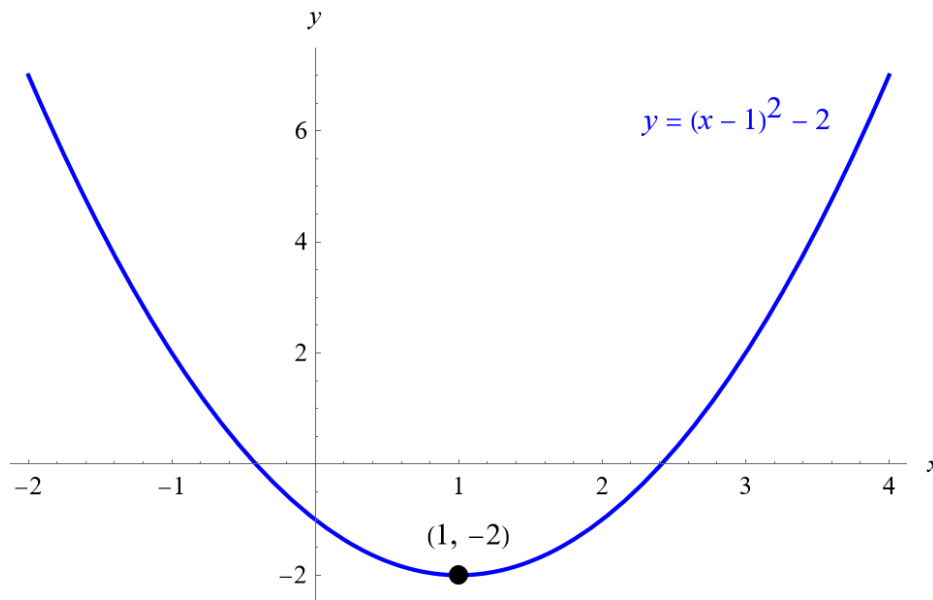
Exercise 75

For the following exercises, use the vertex of the graph of the quadratic function and the direction the graph opens to find the domain and range of the function.

Vertex $(1, -2)$, opens up.

Solution

One possible quadratic function with this vertex and orientation is shown below.



Any x -value can be plugged into a quadratic function, so the domain is

$$\{x \mid -\infty < x < \infty\}.$$

The lowest value the function has is -2 , and it has no highest value. Therefore, the range is

$$\{y \mid -2 \leq y < \infty\}.$$