

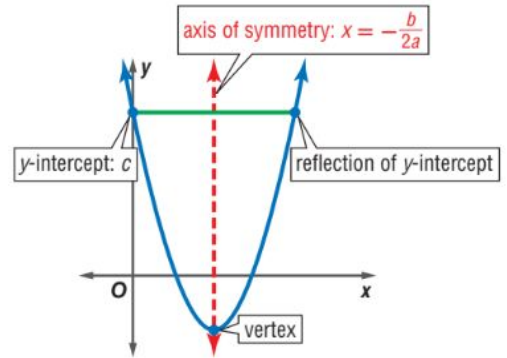
4.1 Graphing Quadratic Functions Honors Algebra 2

Quadratic Function

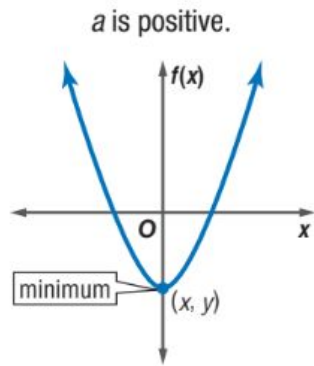
$$f(x) = ax^2 + bx + c, \text{ where } a \neq 0$$

quadratic term linear term constant term

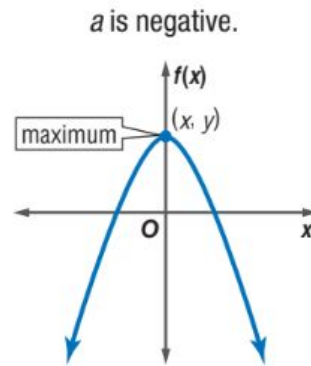
Axis of Symmetry:



Vertex:



The y -coordinate is the minimum value.

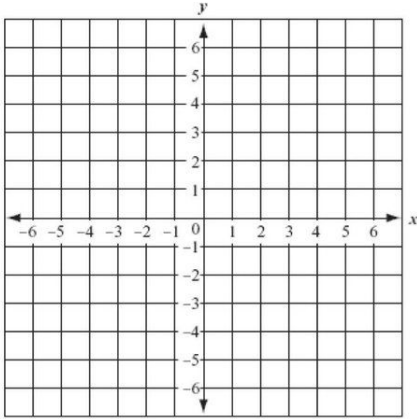


The y -coordinate is the maximum value.

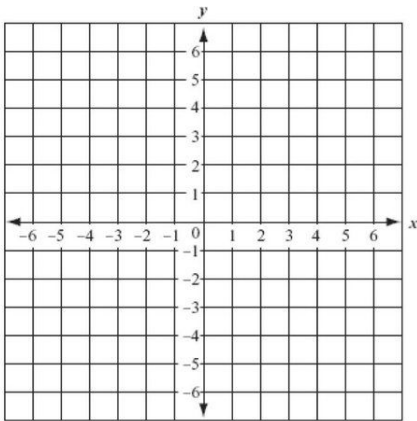
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1. Sketch the following functions. To do this find the axis of symmetry, vertex, and y-intercepts. Make a table of values if needed.

a. $f(x) = 3x^2$

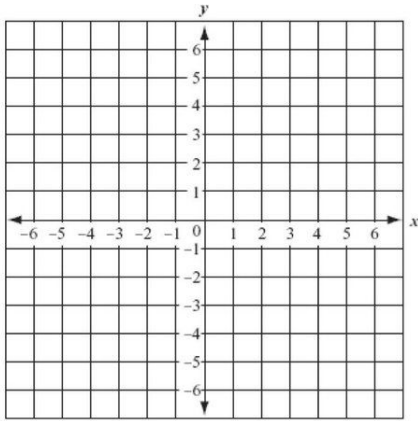


b. $f(x) = -x^2 - 4x$



c. $f(x) = 4x^2 - 6x - 3$

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2. Consider $f(x) = -4x^2 + 12x + 18$.
- Determine whether the function has a maximum or minimum.
 - Find the max/min value.
3. Consider $f(x) = 3x^2 + 8x + 5$.
- Determine whether the function has a maximum or minimum.
 - Find the max/min value.