

Determining the Y-Intercept of a Quadratic

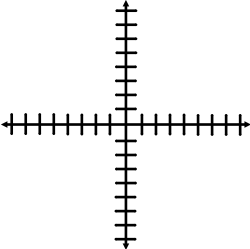
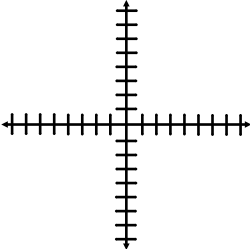
The y -intercept is the point where $x = 0$. Plug it in to determine the value of $f(0)$.

Don't forget the rules for determining the vertex, the axis of symmetry and the maximum/minimum.

<p>EXAMPLE $f(x) = -3(x - 4)^2 + 2$ $f(0) = -3(0 - 4)^2 + 2 = -3(-4)^2 + 2 = -3(16) + 2$ $f(0) = -48 + 2 = -46$ y-intercept: (0, -46) Vertex: (4, 2) Axis of Symmetry: $x = 4$ (Circle one) Maximum or Minimum: $y = 2$</p>	<p>EXAMPLE $f(x) = x^2 + 10x + 2$ $f(0) = (0)^2 + 10(0) + 2 = 2$ y-intercept: (0, 2) $x = -\frac{b}{2a} = -\frac{(10)}{2(1)} = -\frac{10}{2} = -5$ $f(-5) = (-5)^2 + 10(-5) + 2 = 25 - 50 + 2$ $f(-5) = -25 + 2 = -23$ Vertex: (-5, -23) Axis of Symmetry: $x = -5$ (Circle one) Maximum or Minimum: $y = -23$</p>
<p>1. $f(x) = 3(x - 2)^2 + 6$ y-intercept: _____ Vertex: _____ Axis of Symmetry: _____ (Circle one) Maximum or Minimum: _____</p>	<p>5. $f(x) = 5x^2 + 20x - 1$ y-intercept: _____ Vertex: _____ Axis of Symmetry: _____ (Circle one) Maximum or Minimum: _____</p>
<p>2. $f(x) = 2(x + 6)^2 - 3$ y-intercept: _____ Vertex: _____ Axis of Symmetry: _____ (Circle one) Maximum or Minimum: _____</p>	<p>6. $f(x) = -x^2 + 12x + 5$ y-intercept: _____ Vertex: _____ Axis of Symmetry: _____ (Circle one) Maximum or Minimum: _____</p>
<p>3. $f(x) = (x - 2)^2 + 4$ y-intercept: _____ Vertex: _____ Axis of Symmetry: _____ (Circle one) Maximum or Minimum: _____</p>	
<p>4. $f(x) = -6(x + 1)^2$ y-intercept: _____ Vertex: _____ Axis of Symmetry: _____ (Circle one) Maximum or Minimum: _____</p>	<p>Vertex: _____ Axis of Symmetry: _____ (Circle one) Maximum or Minimum: _____</p>

<p>7. $f(x) = -4(x)^2 - 3$</p> <p>y-intercept: _____</p> <p>Vertex: _____ Axis of Symmetry: _____</p> <p>(Circle one) Maximum or Minimum: _____</p>	<p>13. $f(x) = 4x^2 + 24x + 32$</p> <p>y-intercept: _____</p> <p>Vertex: _____ Axis of Symmetry: _____</p> <p>(Circle one) Maximum or Minimum: _____</p>
<p>8. $f(x) = (x - 5)^2 + 2$</p> <p>y-intercept: _____</p> <p>Vertex: _____ Axis of Symmetry: _____</p> <p>(Circle one) Maximum or Minimum: _____</p>	<p>14. $f(x) = x^2 + 4x + 1$</p> <p>y-intercept: _____</p> <p>Vertex: _____ Axis of Symmetry: _____</p> <p>(Circle one) Maximum or Minimum: _____</p>
<p>9. $f(x) = -3(x + 2)^2 - 5$</p> <p>y-intercept: _____</p> <p>Vertex: _____ Axis of Symmetry: _____</p> <p>(Circle one) Maximum or Minimum: _____</p>	<p>10. $f(x) = (x + 3)^2 + 3$</p> <p>y-intercept: _____</p> <p>Vertex: _____ Axis of Symmetry: _____</p> <p>(Circle one) Maximum or Minimum: _____</p>

Graph the given points.

<p>15. $f(x) = (x + 3)^2 + 3$</p> <p>$f(-5) = 7$ $f(-4) = 4$ $f(-3) = 3$ $f(-2) = 4$ $f(-1) = 7$</p> 	<p>16. $f(x) = x^2 + 4x + 1$</p> <p>$f(-4) = 1$ $f(-3) = -2$ $f(-2) = -3$ $f(-1) = -2$ $f(0) = 1$</p> 
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