

### Homework: Quadratic Functions - Key

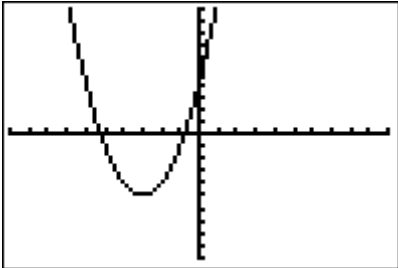
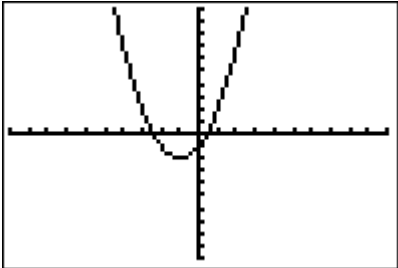
In Problems 1-4, the graph of a quadratic function is given. Write the function's equation, selecting from the given functions

1. $h(x) = (x - 2)^2 - 3$	2. $g(x) = (x + 2)^2 + 3$
3. $j(x) = x^2 + 3$	4. $f(x) = (x + 3)^2$

In Problems 5-8, find the coordinates of the vertex for the parabola defined by the given quadratic function

5. (1,4)	6. (-2,-3)
7. (4,-31)	8. (1,-1)

In Problems 9-19, find the vertex, axis of symmetry, min or max, and the graph of the function

<p>9.</p> <p><i>Vertex</i> : (-3,-5) <i>AOS</i> : <math>x = -3</math> <i>Min</i> : -5</p> 	<p>10.</p> <p><i>Vertex</i> : (-1,-2) <i>AOS</i> : <math>x = -1</math> <i>Min</i> : -2</p> 
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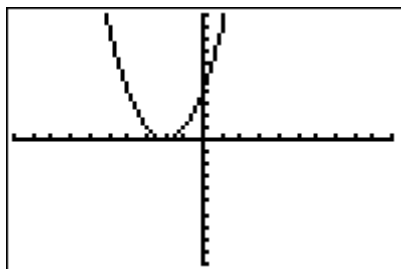
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11.

Vertex:  $(-2, 0)$

AOS:  $x = -2$

Min: 0

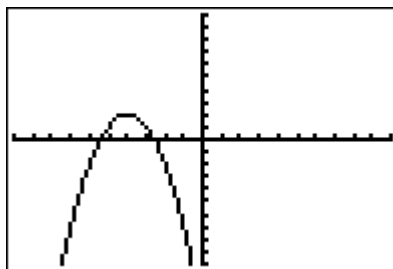


12.

Vertex:  $(-4, 2)$

AOS:  $x = -4$

Max: 2

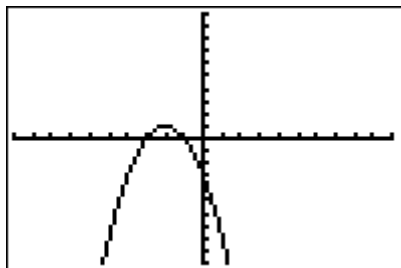


13.

Vertex:  $(-2, 1)$

AOS:  $x = -2$

Max: 1

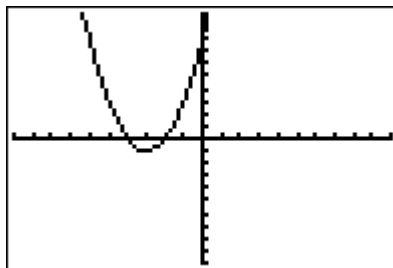


14.

Vertex:  $(-3, -1)$

AOS:  $x = -3$

Min: -1



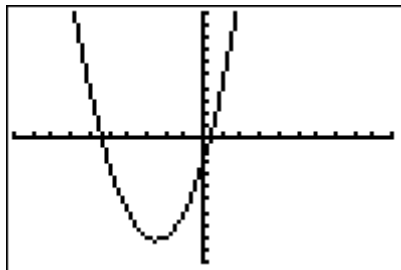
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15.

$$\text{Vertex: } \left( \frac{-5}{2}, \frac{-33}{4} \right)$$

$$\text{AOS: } x = \frac{-5}{2}$$

$$\text{Min: } \frac{-33}{4}$$

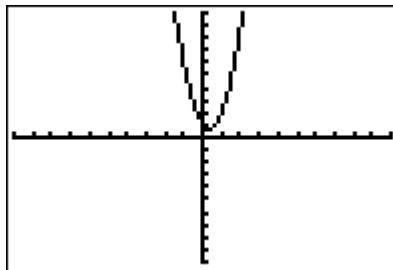


16.

$$\text{Vertex: } \left( \frac{1}{3}, \frac{2}{3} \right)$$

$$\text{AOS: } x = \frac{1}{3}$$

$$\text{Min: } \frac{2}{3}$$

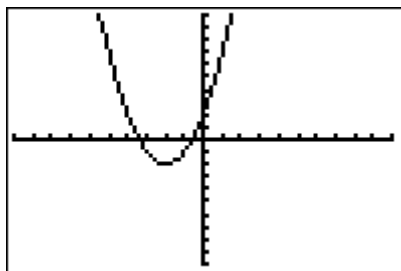


17.

$$\text{Vertex: } (-2, -2)$$

$$\text{AOS: } x = -2$$

$$\text{Min: } -2$$

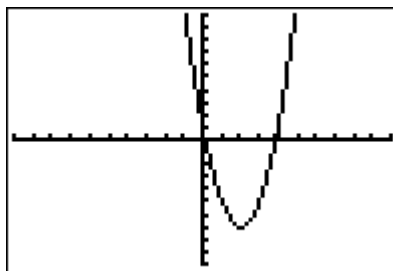


18.

$$\text{Vertex: } (2, -7)$$

$$\text{AOS: } x = 2$$

$$\text{Min: } -7$$



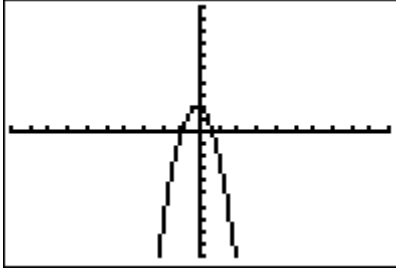
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19.

$$\text{Vertex: } \left( -\frac{1}{6}, \frac{25}{12} \right)$$

$$\text{AOS: } x = -\frac{1}{6}$$

$$\text{Max: } \frac{25}{12}$$



In Problems 20-22, find the minimum or maximum value of the function

20.  $\frac{-37}{4}$

21.  $\frac{-37}{4}$

22.  $-2$