

Graphing Parabolas Given the Vertex Form of the Equation

Identify the vertex, axis of symmetry, and direction of opening of each. Then sketch the graph.

1) $x = y^2$

2) $y = -2x^2$

3) $y = 2x^2$

4) $y = -x^2$

5) $x = -y^2$

6) $y = x^2$

7) $y = -\frac{1}{2}x^2$

8) $x = -3y^2$

9) $x = -3(y - 1)^2 - 6$

10) $x = 2(y + 4)^2 - 2$

11) $x = -2(y + 1)^2 + 1$

12) $y = -(x + 5)^2 + 4$

13) $x = 2y^2 - 2$

14) $y = -x^2 - 2$

15) $x = -2(y - 2)^2 + 1$

16) $y = -(x + 5)^2 - 4$

17) $y = 2(x - 3)^2 - 3$

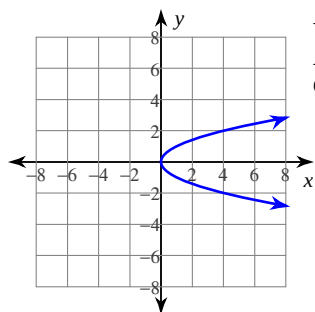
18) $x = -2(y + 5)^2 + 2$

19) $x = \frac{1}{2}(y - 5)^2 + 6$

20) $x = -(y + 1)^2 - 1$

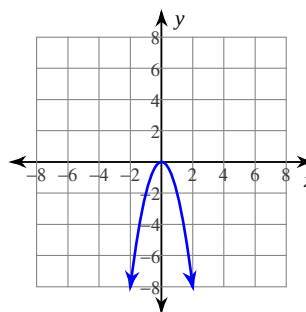
Answers to Graphing Parabolas Given the Vertex Form of the Equation

1)



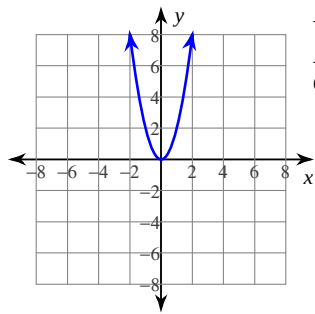
Vertex: $(0, 0)$
Axis of Sym.: $y = 0$
Opens: Right

2)



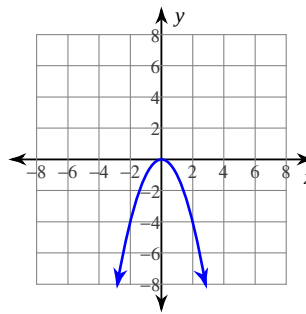
Vertex: $(0, 0)$
Axis of Sym.: $x = 0$
Opens: Down

3)



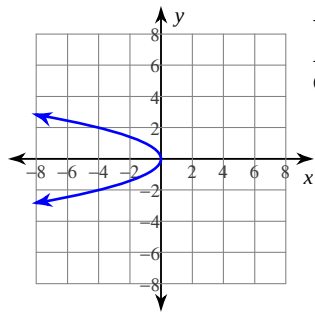
Vertex: $(0, 0)$
Axis of Sym.: $x = 0$
Opens: Up

4)



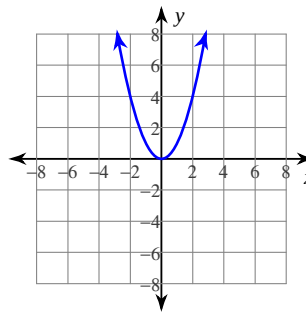
Vertex: $(0, 0)$
Axis of Sym.: $x = 0$
Opens: Down

5)



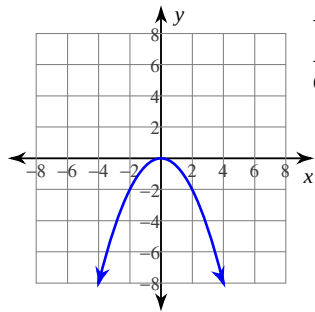
Vertex: $(0, 0)$
Axis of Sym.: $y = 0$
Opens: Left

6)



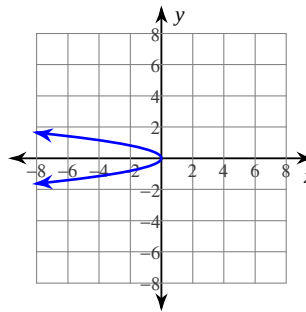
Vertex: $(0, 0)$
Axis of Sym.: $x = 0$
Opens: Up

7)



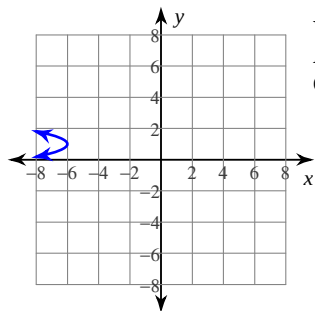
Vertex: $(0, 0)$
Axis of Sym.: $x = 0$
Opens: Down

8)



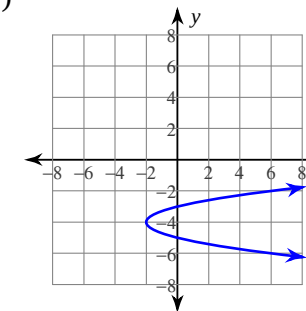
Vertex: $(0, 0)$
Axis of Sym.: $y = 0$
Opens: Left

9)



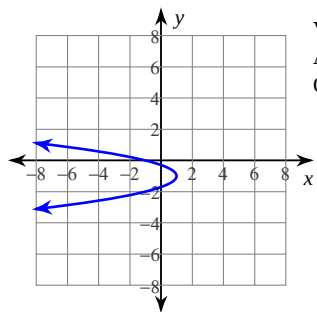
Vertex: $(-6, 1)$
Axis of Sym.: $y = 1$
Opens: Left

10)



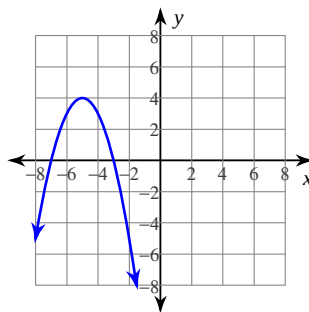
Vertex: $(-2, -4)$
Axis of Sym.: $y = -4$
Opens: Right

11)



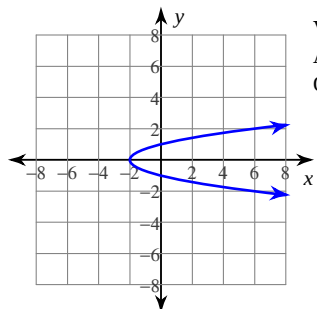
Vertex: $(1, -1)$
 Axis of Sym.: $x = 1$
 Opens: Left

12)



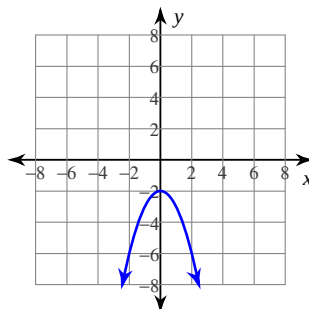
Vertex: $(-5, 4)$
 Axis of Sym.: $x = -5$
 Opens: Down

13)



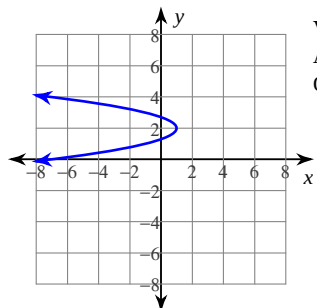
Vertex: $(-2, 0)$
 Axis of Sym.: $x = -2$
 Opens: Right

14)



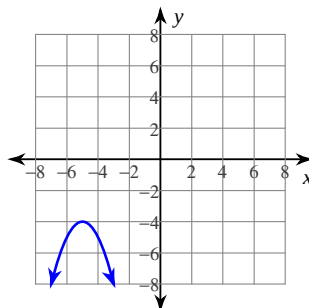
Vertex: $(0, -2)$
 Axis of Sym.: $x = 0$
 Opens: Down

15)



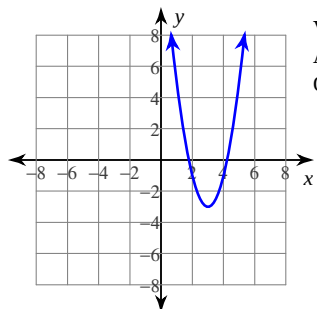
Vertex: $(1, 2)$
 Axis of Sym.: $x = 1$
 Opens: Left

16)



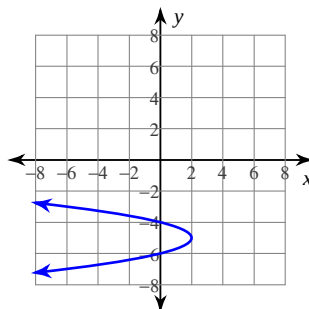
Vertex: $(-5, -4)$
 Axis of Sym.: $x = -5$
 Opens: Down

17)



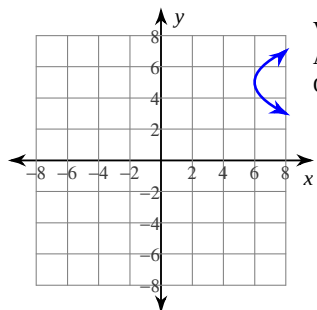
Vertex: $(3, -3)$
 Axis of Sym.: $x = 3$
 Opens: Up

18)



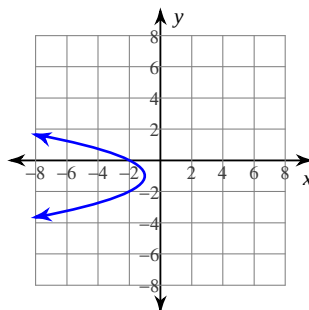
Vertex: $(2, -5)$
 Axis of Sym.: $x = 2$
 Opens: Left

19)



Vertex: $(6, 5)$
 Axis of Sym.: $x = 6$
 Opens: Right

20)



Vertex: $(-1, -1)$
 Axis of Sym.: $x = -1$
 Opens: Left