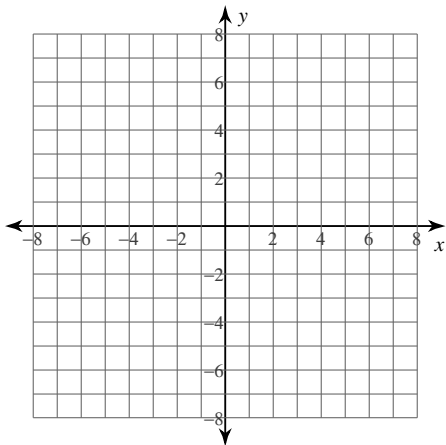


Standard and Vertex Form

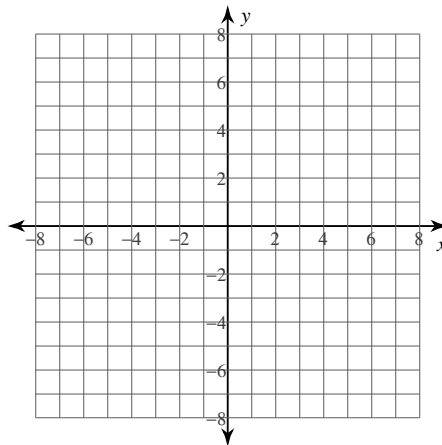
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Identify the vertex, axis of symmetry, and direction of opening of each. Then sketch the graph.

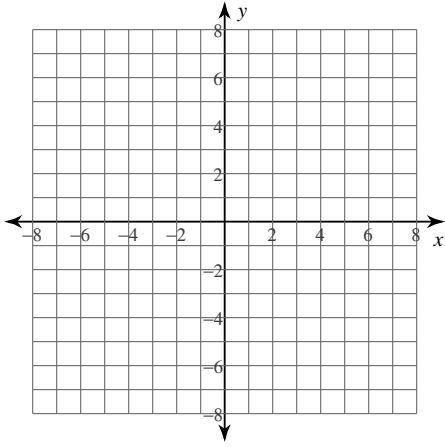
1) $y = -x^2$



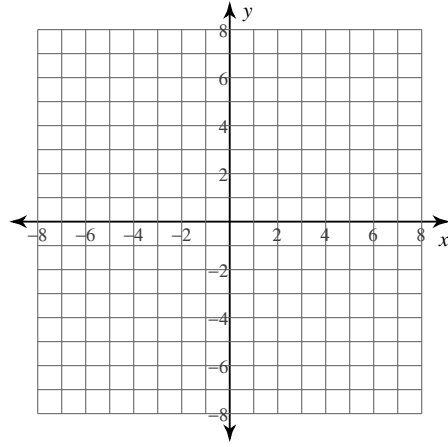
2) $y = -x^2 + 12x - 37$



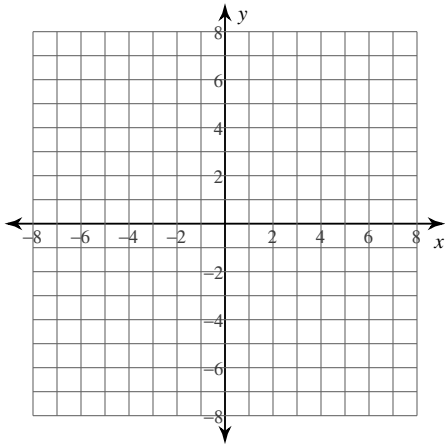
3) $y = -x^2 - 8x - 19$



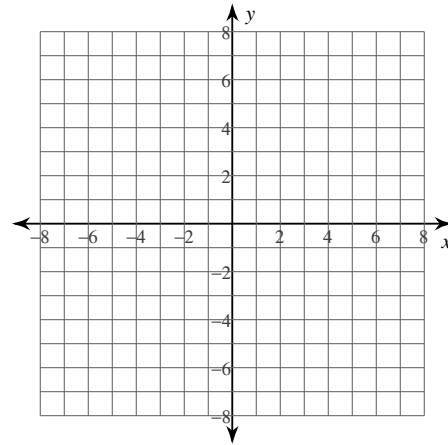
4) $y = -2x^2 - 4x - 2$



5) $y = 2x^2 - 8x + 3$

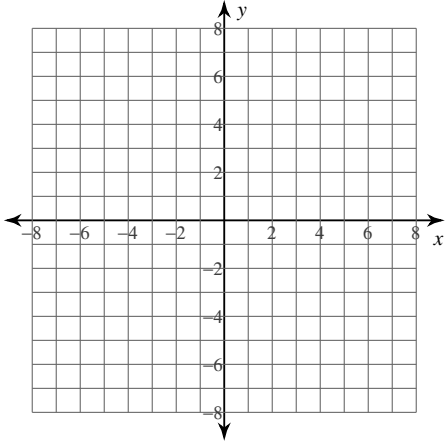


6) $y = x^2 - 2$

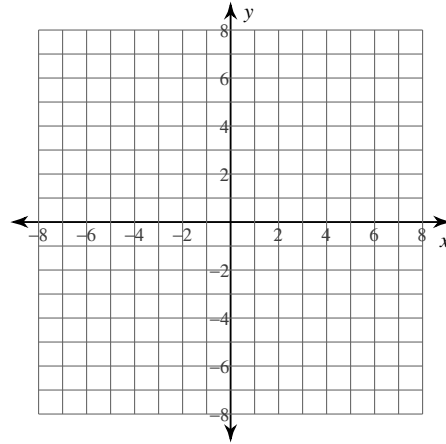


Identify the vertex, axis of symmetry, direction of opening, and min/max value of each. Then sketch the graph.

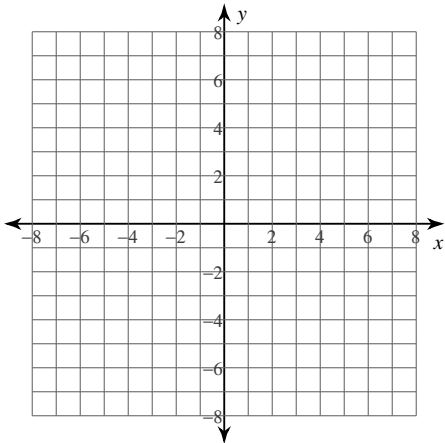
7) $y = -x^2$



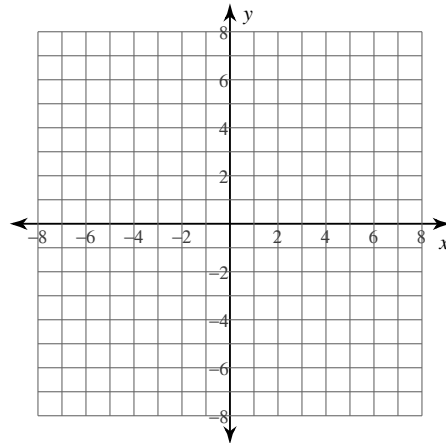
8) $y = -\frac{1}{2}(x+3)^2 + 6$



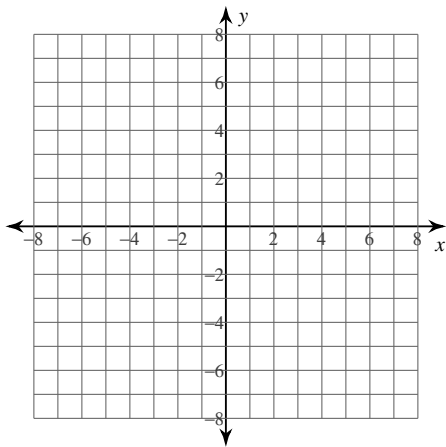
9) $y = x^2 + 3$



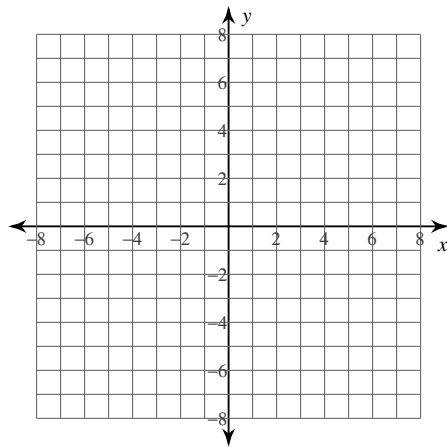
10) $y = -x^2 + 3$



$$11) y = (x - 3)^2 - 2$$



$$12) y = -3(x + 2)^2 - 6$$



Find the y intercept

$$13) y = 2x^2 + 16x + 26$$

$$14) y = -x^2 - 8x - 14$$

$$15) y = x^2 - 8x + 18$$

$$16) y = -x^2 - 8x - 17$$

$$17) y = -(x + 2)^2 - 1$$

$$18) y = -\frac{1}{3}(x - 1)^2 + 1$$

$$19) y = 3(x + 6)^2 - 5$$

$$20) y = -(x - 3)^2 - 5$$

Describe the transformations from the parent function $y=x^2$

$$21) y = -2(x + 1)^2 + 1$$

$$22) y = -2(x - 2)^2 + 3$$

$$23) y = (x - 2)^2 - 2$$

$$24) y = -(x + 1)^2 - 3$$

$$25) y = 2(x - 3)^2 - 1$$

$$26) y = (x + 4)^2 + 1$$

$$27) y = -2(x + 3)^2 + 4$$

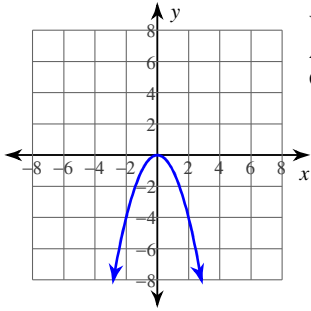
$$28) y = 2(x + 2)^2 - 3$$

$$29) y = 2(x - 2)^2 + 1$$

$$30) y = -(x - 4)^2 + 4$$

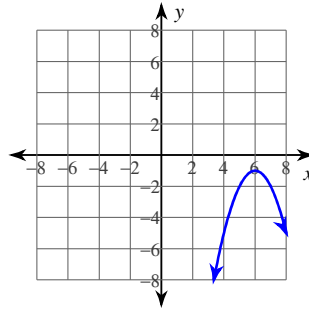
Answers to Standard and Vertex Form (ID: 1)

1)



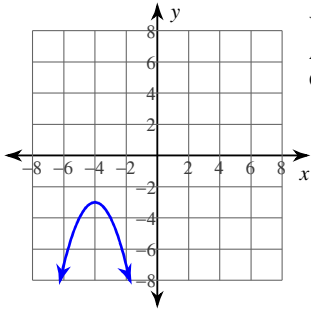
Vertex: $(0, 0)$
 Axis of Sym.: $x = 0$
 Opens: Down

2)



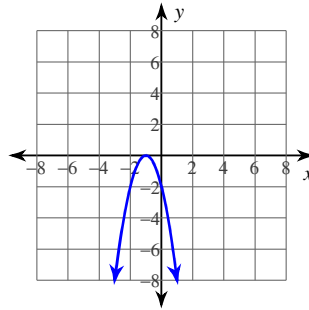
Vertex: $(6, -1)$
 Axis of Sym.: $x = 6$
 Opens: Down

3)



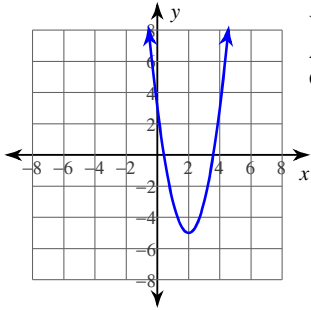
Vertex: $(-4, -3)$
 Axis of Sym.: $x = -4$
 Opens: Down

4)



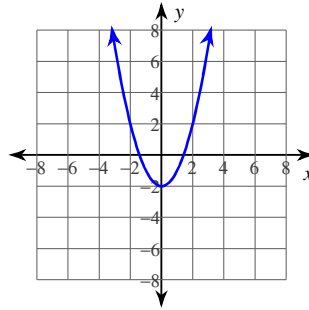
Vertex: $(-1, 0)$
 Axis of Sym.: $x = -1$
 Opens: Down

5)



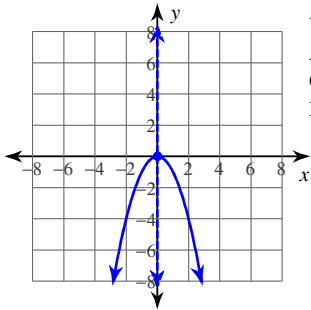
Vertex: $(2, -5)$
 Axis of Sym.: $x = 2$
 Opens: Up

6)



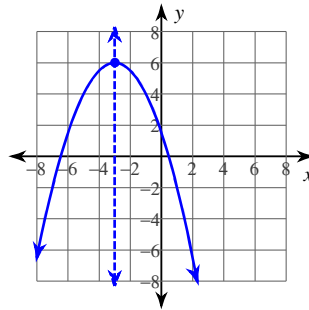
Vertex: $(0, -2)$
 Axis of Sym.: $x = 0$
 Opens: Up

7)



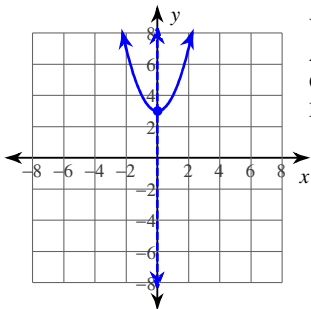
Vertex: $(0, 0)$
 Axis of Sym.: $x = 0$
 Opens: Down
 Max value = 0

8)



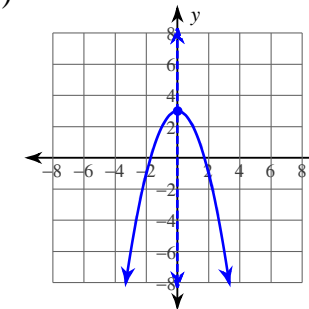
Vertex: $(-3, 6)$
 Axis of Sym.: $x = -3$
 Opens: Down
 Max value = 6

9)



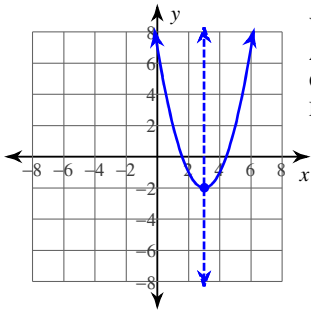
Vertex: $(0, 3)$
 Axis of Sym.: $x = 0$
 Opens: Up
 Min value = 3

10)

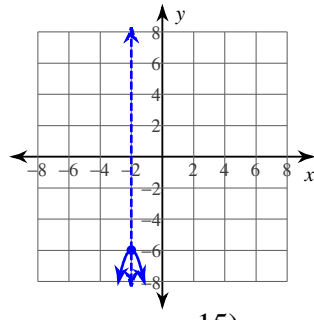


Vertex: $(0, 3)$
 Axis of Sym.: $x = 0$
 Opens: Down
 Max value = 3

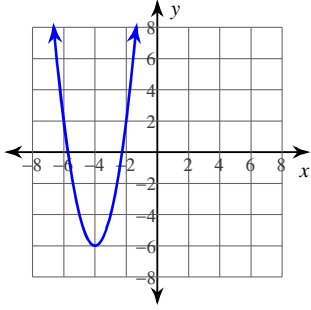
11)



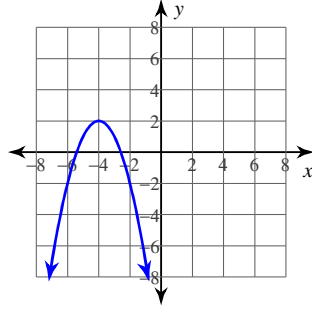
12)



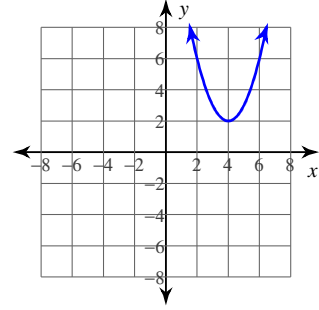
13)



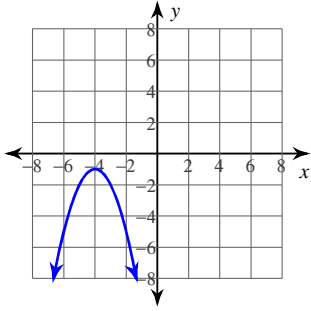
14)



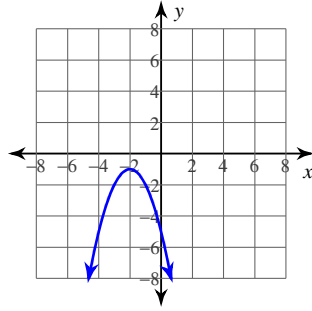
15)



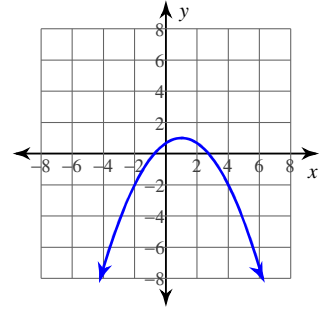
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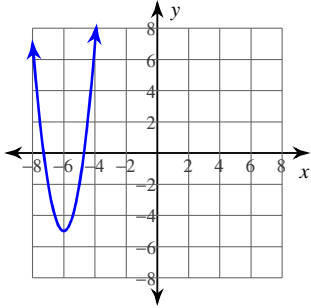
17)



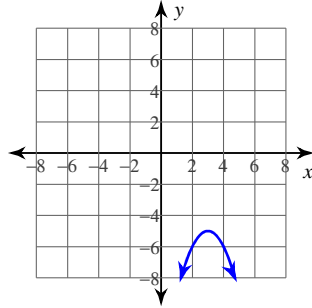
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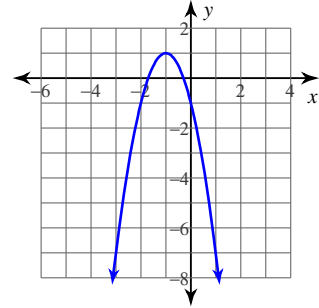
19)



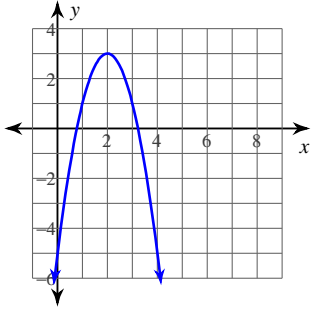
20)



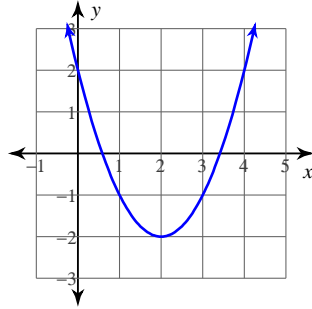
21)



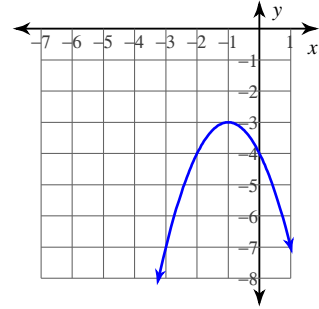
22)



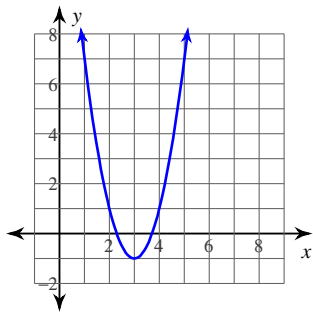
23)



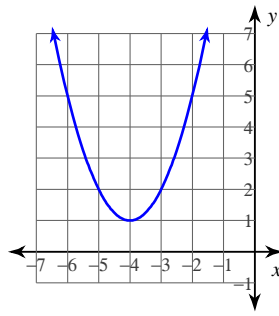
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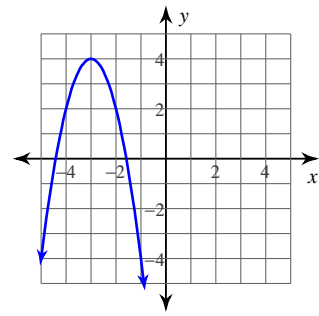
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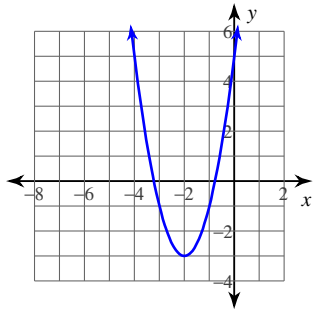
26)



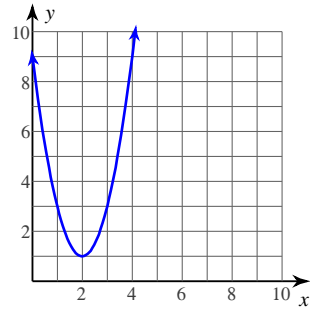
27)



28)



29)



30)

