Unit 5 Quadratics
Review Day 9 – Day 14

Name: _____
Date: _____ **Hour:** _____

Practice 10-1

Exploring Quadratic Graphs

Identify the vertex of each graph. Tell whether it is a minimum or a maximum.

1. $y = -3x^2$

2. $y = -7x^2$

3. $y = 0.5x^2$

Order each group of quadratic functions from widest to narrowest graph.

7. $y = x^2, y = 5x^2, y = 3x^2$

8. $y = -8x^2, y = \frac{1}{2}x^2, y = -x^2$

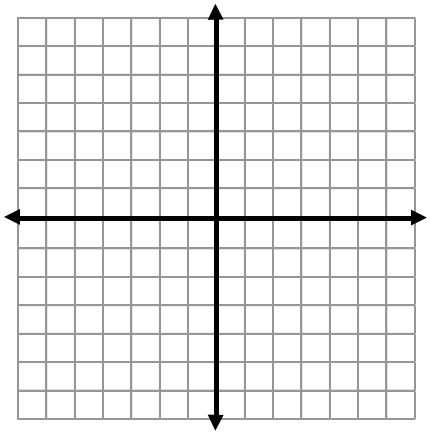
9. $y = 5x^2, y = -4x^2, y = 2x^2$

10. $y = -\frac{1}{2}x^2, y = \frac{1}{3}x^2, y = -3x^2$

Graph each function.

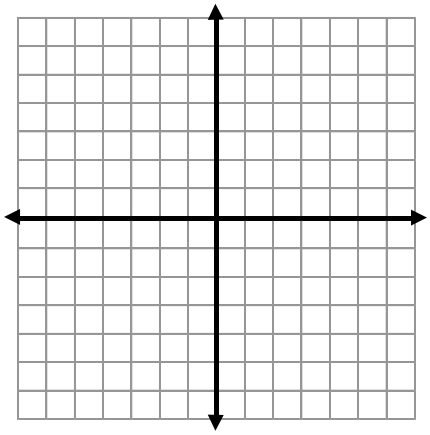
13. $y = x^2$

x	y



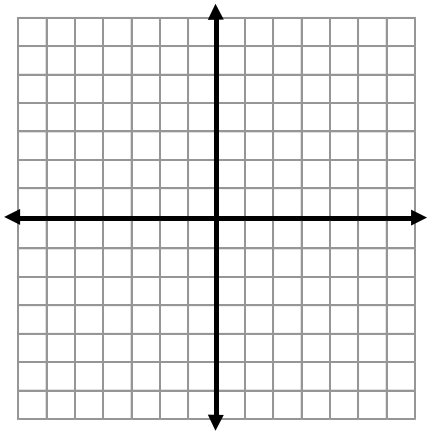
14. $y = 4x^2$

x	y



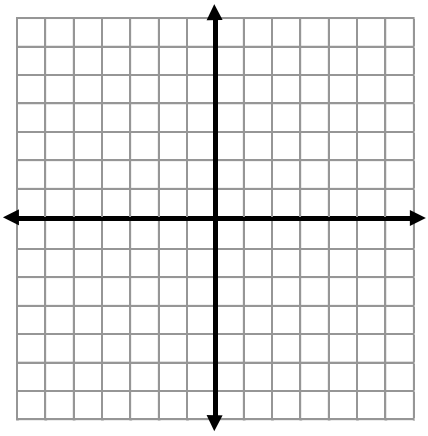
15. $y = -3x^2$

x	y



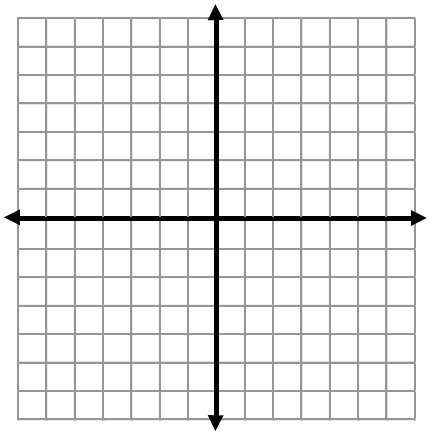
16. $y = -x^2 - 4$

x	y



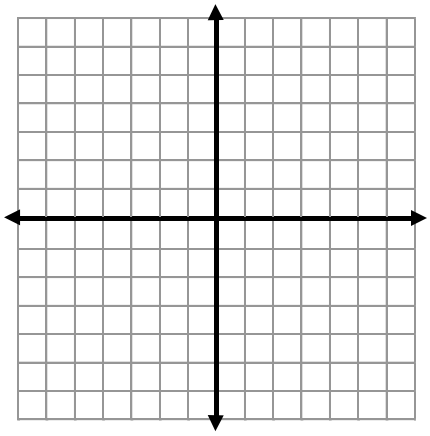
17. $y = 2x^2 - 2$

x	y



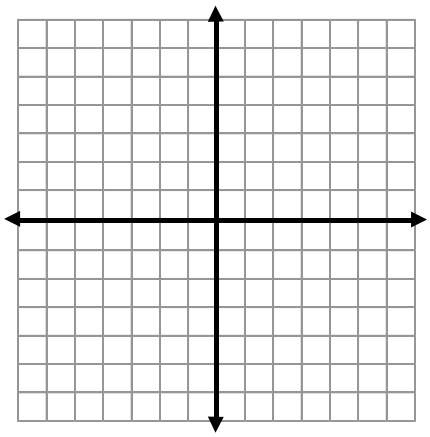
18. $y = 2x^2 + 3$

x	y



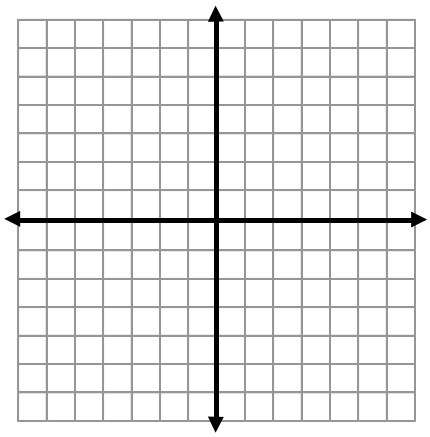
19. $y = \frac{1}{2}x^2 + 2$

x	y



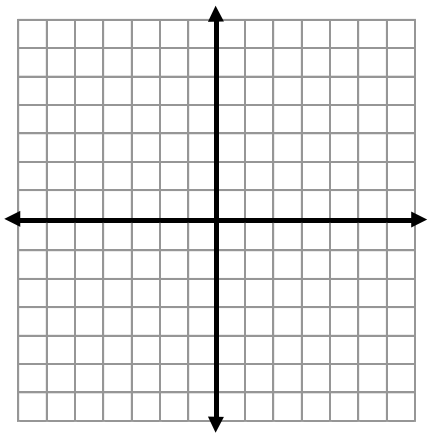
20. $y = \frac{1}{2}x^2 - 3$

x	y



21. $y = \frac{1}{3}x^2 + 5$

x	y



Practice 10-2

Find the equation of the axis of symmetry and the coordinates of the vertex of the graph of each function.

1. $y = x^2 - 10x + 2$

2. $y = x^2 + 12x - 9$

3. $y = -x^2 + 2x + 1$

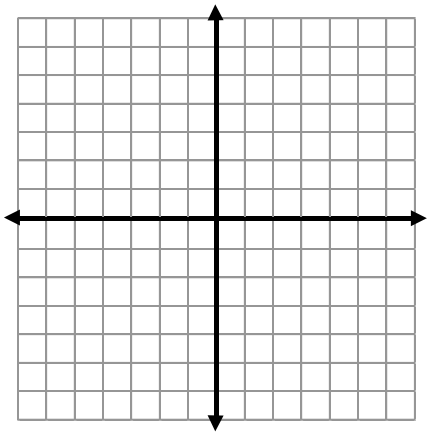
4. $y = 3x^2 + 18x + 9$

5. $y = 3x^2 + 3$

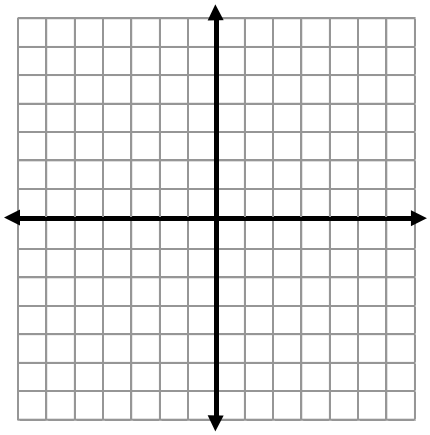
6. $y = 16x - 4x^2$

Graph each function. Label the axis of symmetry, the vertex, and the y-intercept.

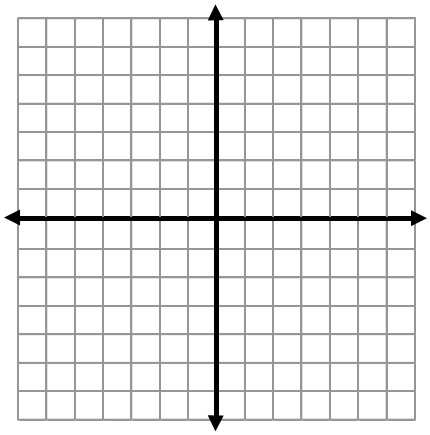
10. $y = x^2 - 6x + 4$



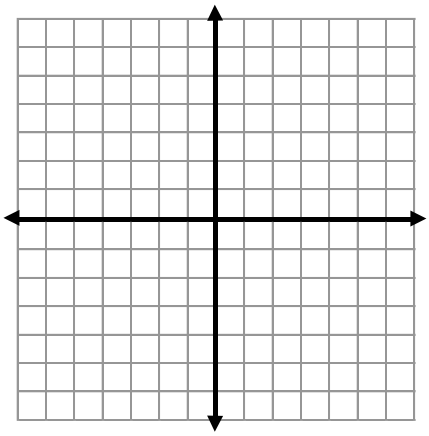
11. $y = x^2 + 4x - 1$



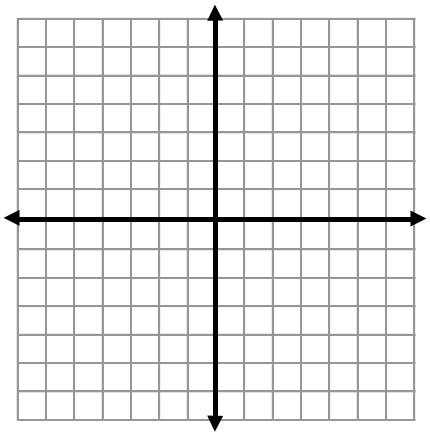
12. $y = x^2 + 10x + 14$



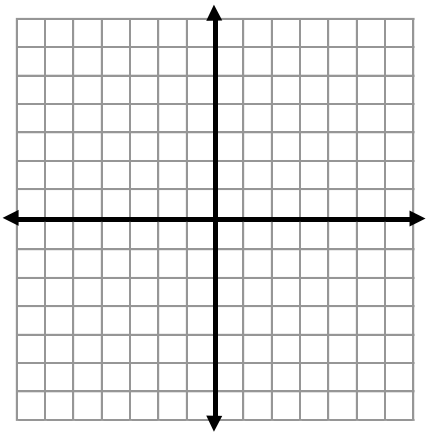
13. $y = x^2 + 2x + 1$



14. $y = -x^2 - 4x + 4$

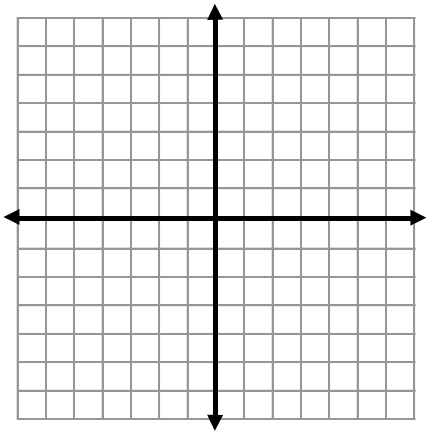


15. $y = -4x^2 + 24x + 13$

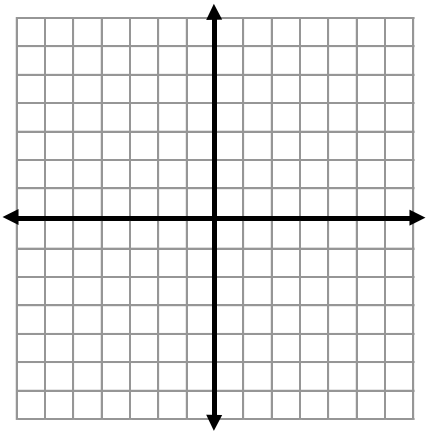


Graph each quadratic inequality.

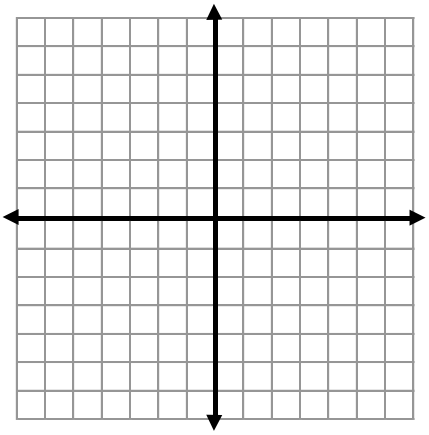
22. $y > x^2 + 1$



23. $y \geq x^2 - 4$



24. $y < -x^2 + 1$



Find the vertex of each function. Determine whether the vertex is a maximum or minimum.

31. $y = 2x^2 - 12x + 9$

32. $y = -2x^2 - 16x - 33$

33. $y = -4x^2 + 4x - 1$

37. You and a friend are hiking in the mountains. You want to climb to a ledge that is 20 ft above you. The height of the grappling hook you throw is given by the function $h = -16t^2 - 32t + 5$. What is the maximum height of the grappling hook? Can you throw it high enough to reach the ledge?

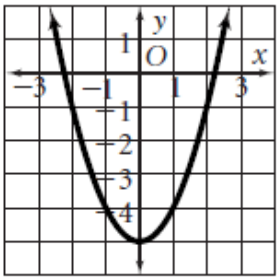
38. The total profit made by an engineering firm is given by the function $p = x^2 - 25x + 5000$. Find the minimum profit made by the company.

Practice 5-3

Translating Parabolas

Write the equation of the parabola in vertex form.

1.



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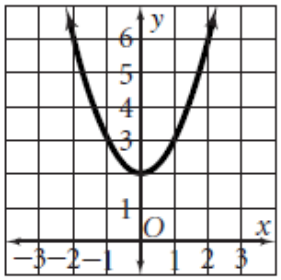

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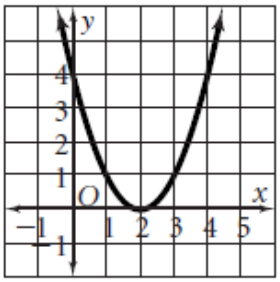

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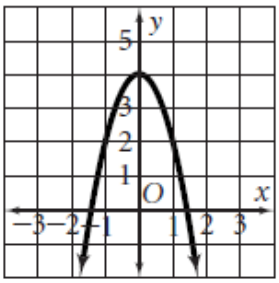

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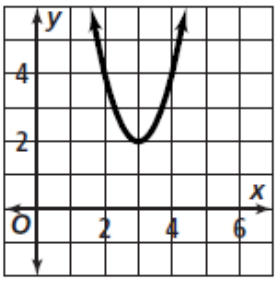

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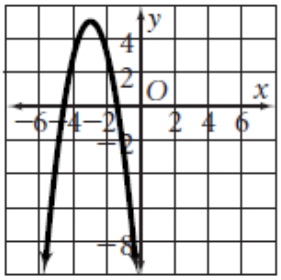
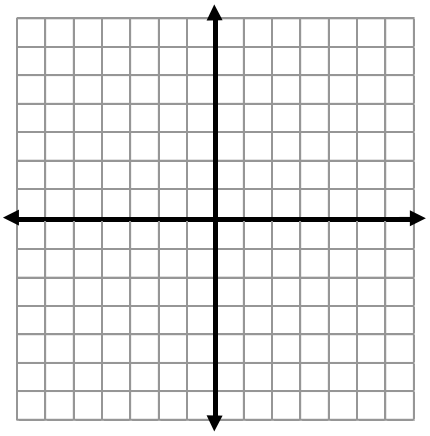
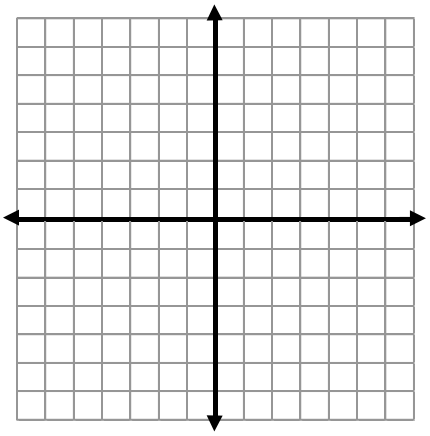


Graph each function. Label the vertex, axis of symmetry, and y-intercept.

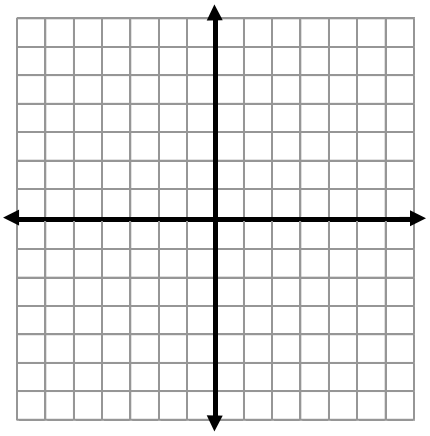
7. $y = (x - 2)^2 - 3$



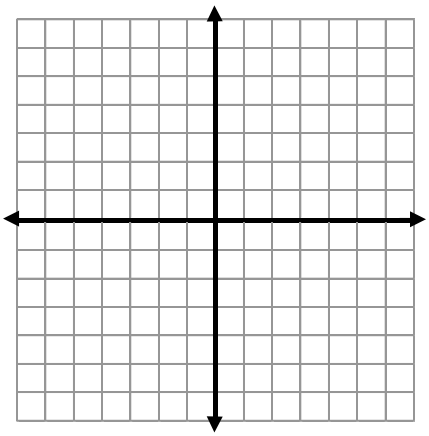
8. $y = (x - 6)^2 + 6$



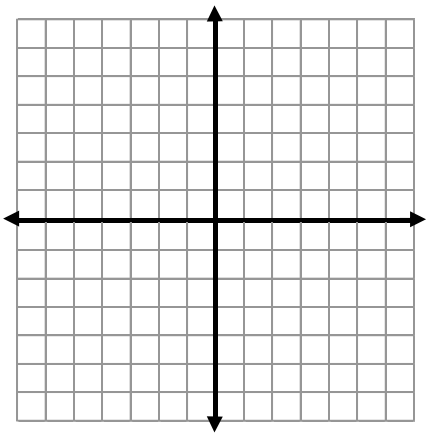
9. $y = \frac{1}{2}(x - 1)^2 - 1$



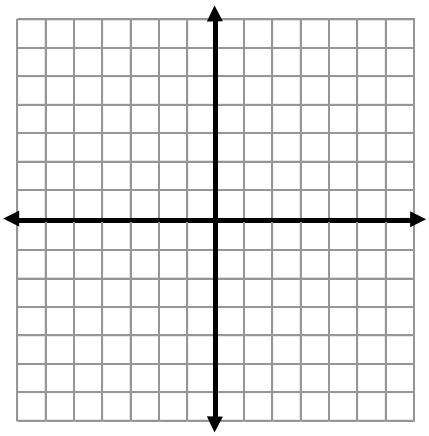
10. $y = 8(x + 1)^2 - 2$



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



12. $y = 3(x + 2)^2 + 4$



Write each function in vertex form.

19. $y = x^2 + 4x$

20. $y = 2x^2 + 8x + 3$

21. $y = -2x^2 - 8x$

22. $y = -x^2 + 4x + 4$

23. $y = x^2 - 4x - 4$

24. $y = x^2 + 5x$

Identify the vertex and the *y*-intercept of the graph of each function.

31. $y = 3(x - 2)^2 - 4$

32. $y = -\frac{1}{3}(x + 6)^2 + 5$

33. $y = 2(x - 1)^2 - 1$

Write each function in standard form.

37. $y = 4(x - 5)^2 + 1$

38. $y = -2(x + 5)^2 - 3$

39. $y = -5(x + 2)^2 + 5$