

Algebra I

Worksheet 9.2

Name _____

Identify the values of a , b , and c in the quadratic function.

1. $y = 7x^2 + 2x + 11$

2. $y = 3x^2 - 5x + 1$

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

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

5. $y = \frac{1}{2}x^2 - x - 5$

6. $y = -x^2 + 7x - 6$

Tell whether the graph opens upward or downward. Then find the axis of symmetry of the graph of the function.

7. $y = x^2 + 6$

8. $y = -x^2 - 1$

9. $y = x^2 + 6x + 1$

10. $y = x^2 - 4x + 5$

11. $y = 2x^2 + 4x - 5$

12. $y = -x^2 + 8x + 3$

13. $y = x^2 + 3x - 6$

14. $y = -x^2 + 7x - 2$

15. $y = 3x^2 + 6x + 10$

Find the vertex of the graph of the function.

16. $y = x^2 + 5$

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

18. $y = x^2 + 10x + 3$

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

20. $y = 3x^2 + 6x + 1$

21. $y = -2x^2 + 8x - 3$

22. $y = 10x^2 - 10x + 7$

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

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

Use the quadratic function to complete the table of values.

25. $y = x^2 - 6x + 8$

x	1	2	3	4	5
y	?	?	?	?	?

26. $y = -x^2 + 12x - 5$

x	4	5	6	7	8
y	?	?	?	?	?

27. $y = 7x^2 + 14x + 2$

x	-3	-2	-1	0	1
y	?	?	?	?	?

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

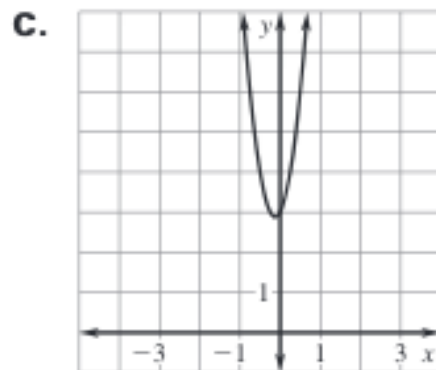
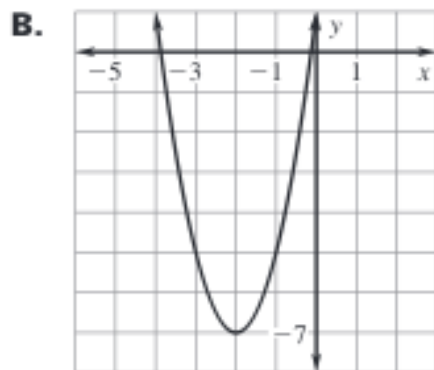
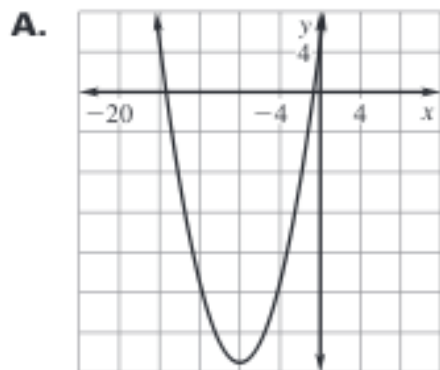
x	-3	-2	-1	0	1
y	?	?	?	?	?

Match the function with its graph.

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

30. $y = 2x^2 + 8x + 1$

31. $y = \frac{1}{2}x^2 + 8x + 5$

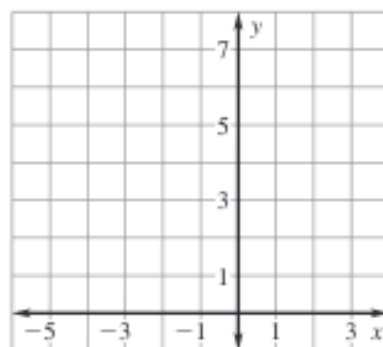
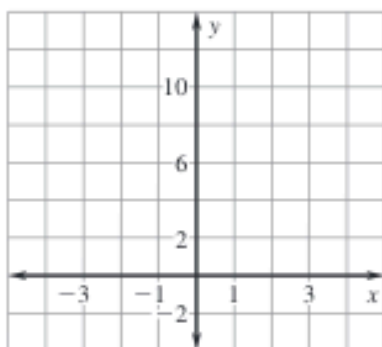
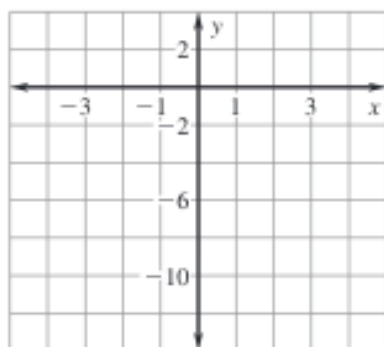


Graph the function. Label the vertex and axis of symmetry.

32. $y = -x^2 - 6$

33. $y = x^2 + 7$

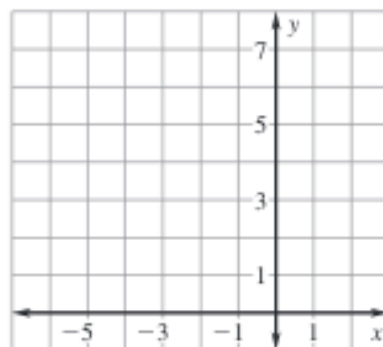
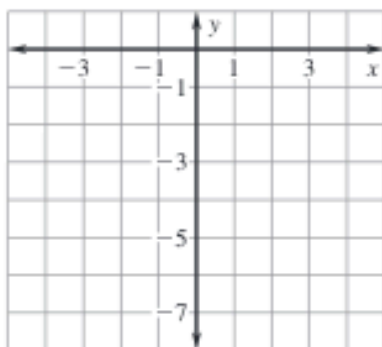
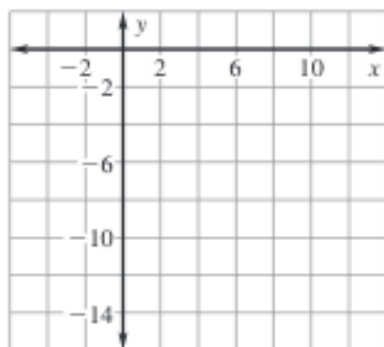
34. $y = x^2 + 2x + 5$



35. $y = x^2 - 8x + 1$

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

37. $y = -x^2 - 4x + 3$



Tell whether the function has a *minimum value* or a *maximum value*.

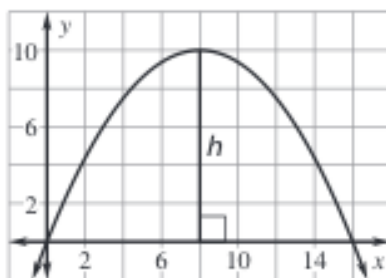
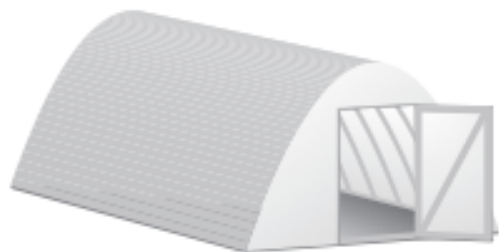
Then find the minimum or maximum value.

38. $f(x) = x^2 - 7$

39. $f(x) = -x^2 + 9$

40. $f(x) = 2x^2 + 4x$

- 41. Greenhouse** The dome of the greenhouse shown can be modeled by the graph of the function $y = -0.15625x^2 + 2.5x$ where x and y are measured in feet. What is the height h at the highest point of the dome as shown in the diagram?



- 42. Fencing** A parabola forms the top of a fencing panel as shown. This parabola can be modeled by the graph of the function $y = 0.03125x^2 - 0.25x + 4$ where x and y are measured in feet and y represents the number of feet the parabola is above the ground. How far above the ground is the lowest point of the parabola formed by the fence?



