Name _____ Date _____

LESSON 9.1

Practice B

For use with the lesson "Graph $y = ax^2 + c$"

Use the quadratic function to complete the table of values.

1. $y = 9x^2$

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

2. $y = -5x^2$

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

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

x	-4	-2	0	2	4
y	?	?	?	?	?

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

x	-16	-8	0	8	16
y	?	?	?	?	?

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

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

6. $y = 6x^2 - 5$

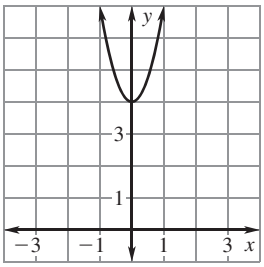
x	-2	-1	0	1	2
y	?	?	?	?	?

Match the function with its graph.

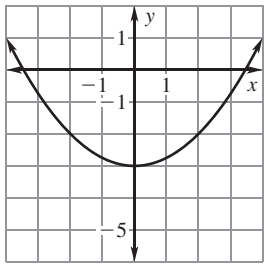
7. $y = -4x^2 + 3$ **8.** $y = 3x^2 + 4$ **9.** $y = \frac{1}{3}x^2 - 4$

10. $y = \frac{1}{4}x^2 - 3$ **11.** $y = -3x^2 + 4$ **12.** $y = 4x^2 + 3$

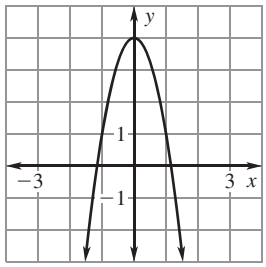
A.



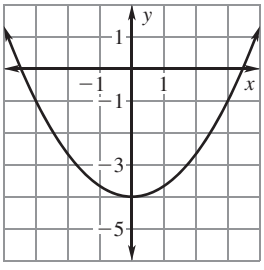
B.



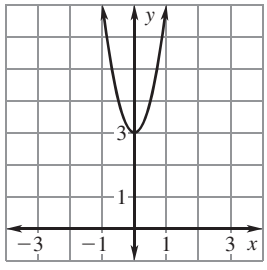
C.



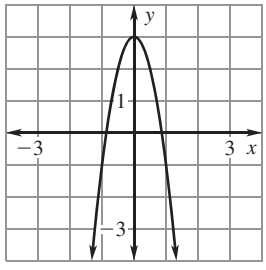
D.



E.



F.



Describe how you can use the graph of $y = x^2$ to graph the given function.

13. $y = x^2 - 8$ **14.** $y = -x^2 + 4$ **15.** $y = 2x^2 + 3$

16. $y = -5x^2 + 1$ **17.** $y = \frac{1}{2}x^2 - 2$ **18.** $y = -\frac{3}{4}x^2 + 5$

Name _____ Date _____

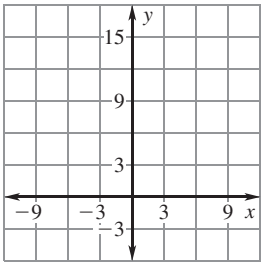
LESSON 9.1

Practice B *continued*

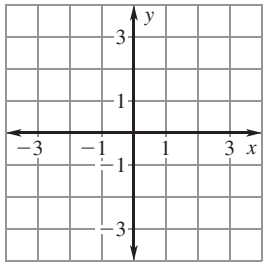
For use with the lesson "Graph $y = ax^2 + c$"

Graph the function and identify its domain and range. Compare the graph with the graph of $y = x^2$.

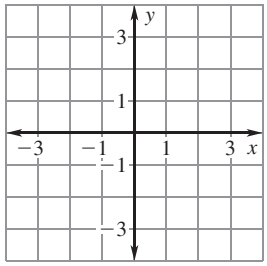
19. $y = x^2 + 9$



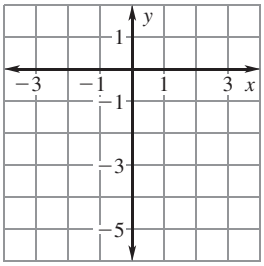
20. $y = -\frac{1}{5}x^2$



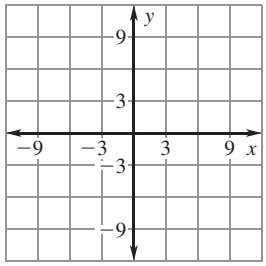
21. $y = -\frac{3}{2}x^2$



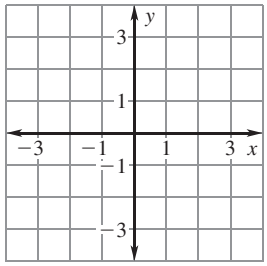
22. $y = x^2 - 3.5$



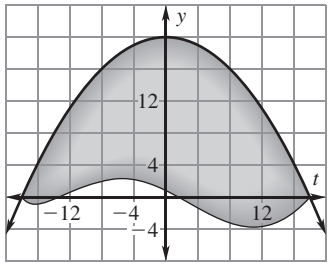
23. $y = 2x^2 - 9$



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



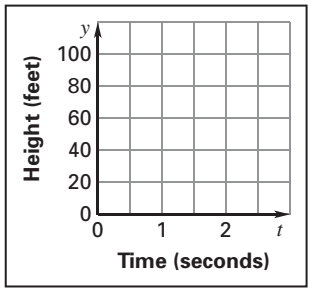
25. Serving Plate The top view of a freeform serving plate you made in a ceramics class is shown in the graph. One edge of the plate can be modeled by the graph of the function $y = -\frac{5}{81}x^2 + 20$ where x and y are measured in inches.



a. Find the domain of the function in this situation.

b. Find the range of the function in this situation.

26. Roof Shingle A roof shingle is dropped from a rooftop that is 100 feet above the ground. The height y (in feet) of the dropped roof shingle is given by the function $y = -16t^2 + 100$ where t is the time (in seconds) since the shingle is dropped.



a. Graph the function.

b. Identify the domain and range of the function in this situation.

c. Use the graph to estimate the shingle's height at 1 second.

d. Use the graph to estimate when the shingle is at a height of 50 feet.

e. Use the graph to estimate when the shingle is at a height of 0 feet.