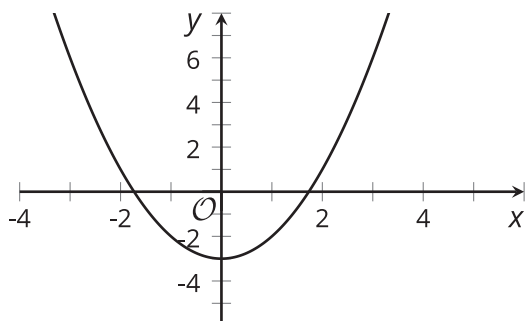


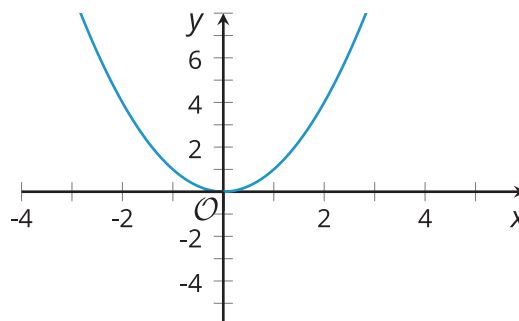
Lesson 12 Practice Problems

1. Here are four graphs. Match each graph with a quadratic equation that it represents.

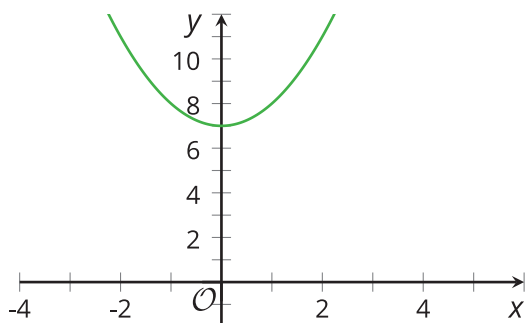
Graph A



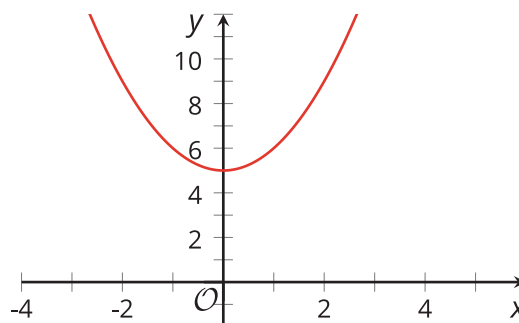
Graph B



Graph C



Graph D



A. Graph A

B. Graph B

C. Graph C

D. Graph D

1. $y = x^2$

2. $y = x^2 + 5$

3. $y = x^2 + 7$

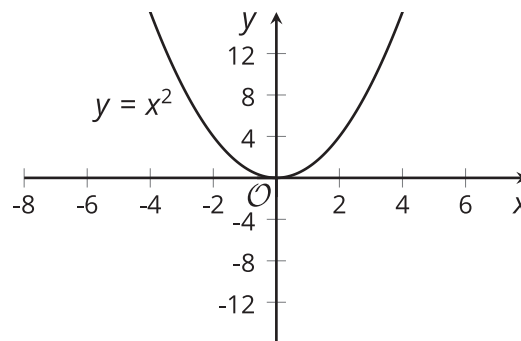
4. $y = x^2 - 3$

2. The two equations $y = (x + 2)(x + 3)$ and $y = x^2 + 5x + 6$ are equivalent.

a. Which equation helps find the x -intercepts most efficiently?

b. Which equation helps find the y -intercept most efficiently?

3. Here is a graph that represents $y = x^2$.



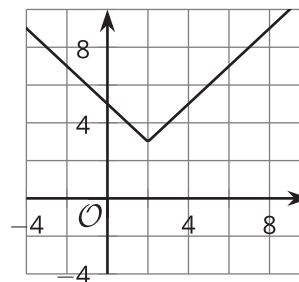
On the same coordinate plane, sketch and label the graph that represents each equation:

- a. $y = x^2 - 4$
- b. $y = -x^2 + 5$

4. Select **all** equations whose graphs have a y -intercept with a positive y -coordinate.

- A. $y = x^2 + 3x - 2$
- B. $y = x^2 - 10x$
- C. $y = (x - 1)^2$
- D. $y = 5x^2 - 3x - 5$
- E. $y = (x + 1)(x + 2)$

5. a. Describe how the graph of $A(x) = |x|$ has to be shifted to match the given graph.

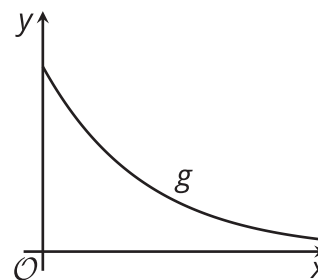


b. Write an equation for the function represented by the graph.

(From Unit 4, Lesson 14.)

6. Here is a graph of the function g given by $g(x) = a \cdot b^x$.

What can you say about the value of b ? Explain how you know.



(From Unit 5, Lesson 13.)

7. a. What are the x -intercepts of the graph that represents $y = (x + 1)(x + 5)$? Explain how you know.
- b. What is the x -coordinate of the vertex of the graph that represents $y = (x + 1)(x + 5)$? Explain how you know.
- c. Find the y -coordinate of the vertex. Show your reasoning.
- d. Sketch a graph of $y = (x + 1)(x + 5)$.

(From Unit 6, Lesson 11.)

8. Determine the x -intercepts, the vertex, and the y -intercept of the graph of each equation.

equation	x -intercepts	vertex	y -intercept
$y = (x - 5)(x - 3)$			
$y = 2x(8 - x)$			

(From Unit 6, Lesson 11.)

9. Equal amounts of money were invested in stock A and stock B. In the first year, stock A increased in value by 20%, and stock B decreased by 20%. In the second year, stock A decreased in value by 20%, and stock B increased by 20%.

Was one stock a better investment than the other? Explain your reasoning.

(From Unit 5, Lesson 15.)