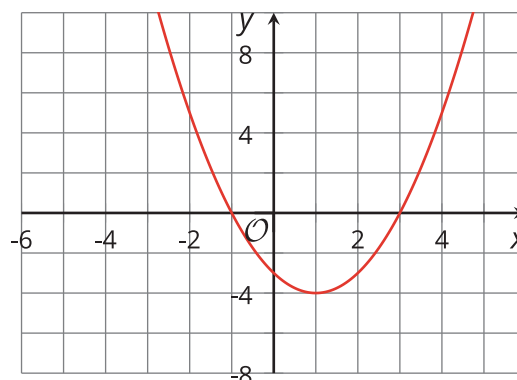


Lesson 10 Practice Problems

- A quadratic function f is defined by $f(x) = (x - 7)(x + 3)$.
 - Without graphing, identify the x -intercepts of the graph of f . Explain how you know.
 - Expand $(x - 7)(x + 3)$ and use the expanded form to identify the y -intercept of the graph of f .
- What are the x -intercepts of the graph of the function defined by $(x - 2)(2x + 1)$?
 - $(2, 0)$ and $(-1, 0)$
 - $(2, 0)$ and $(-\frac{1}{2}, 0)$
 - $(-2, 0)$ and $(1, 0)$
 - $(-2, 0)$ and $(\frac{1}{2}, 0)$

- Here is a graph that represents a quadratic function.

Which expression could define this function?



- $(x + 3)(x + 1)$
- $(x + 3)(x - 1)$
- $(x - 3)(x + 1)$
- $(x - 3)(x - 1)$

4. a. What is the y -intercept of the graph of the equation $y = x^2 - 5x + 4$?
- b. An equivalent way to write this equation is $y = (x - 4)(x - 1)$. What are the x -intercepts of this equation's graph?
5. Noah said that if we graph $y = (x - 1)(x + 6)$, the x -intercepts will be at $(1, 0)$ and $(-6, 0)$. Explain how you can determine, without graphing, whether Noah is correct.

6. A company sells a video game. If the price of the game in dollars is p the company estimates that it will sell $20,000 - 500p$ games.

Which expression represents the revenue in dollars from selling games if the game is priced at p dollars?

- A. $(20,000 - 500p) + p$
- B. $(20,000 - 500p) - p$
- C. $\frac{20,000 - 500p}{p}$
- D. $(20,000 - 500p) \cdot p$

(From Unit 6, Lesson 7.)

7. Write each quadratic expression in standard form. Draw a diagram if needed.
- a. $(x - 3)(x - 6)$
- b. $(x - 4)^2$
- c. $(2x + 3)(x - 4)$
- d. $(4x - 1)(3x - 7)$

(From Unit 6, Lesson 9.)

8. Consider the expression $(5 + x)(6 - x)$.

a. Is the expression equivalent to $x^2 + x + 30$? Explain how you know.

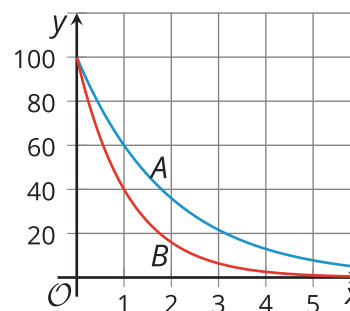
b. Is the expression $30 + x - x^2$ in standard form? Explain how you know.

(From Unit 6, Lesson 9.)

9. Here are graphs of the functions f and g given by

$$f(x) = 100 \cdot \left(\frac{3}{5}\right)^x \text{ and } g(x) = 100 \cdot \left(\frac{2}{5}\right)^x.$$

Which graph corresponds to f and which graph corresponds to g ? Explain how you know.

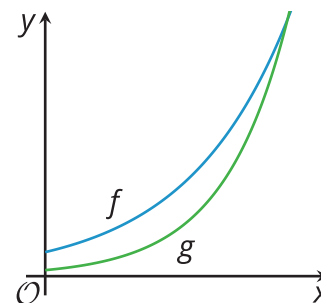


(From Unit 5, Lesson 12.)

10. Here are graphs of two functions f and g .

An equation defining f is $f(x) = 100 \cdot 2^x$.

Which of these could be an equation defining the function g ?



A. $g(x) = 25 \cdot 3^x$

B. $g(x) = 50 \cdot (1.5)^x$

C. $g(x) = 100 \cdot 3^x$

D. $g(x) = 200 \cdot (1.5)^x$

(From Unit 5, Lesson 13.)