Name_____ Date_____

3.3 Function Notation
For use with Exploration 3.3

Essential Question How can you use function notation to represent a function?

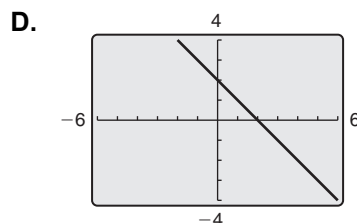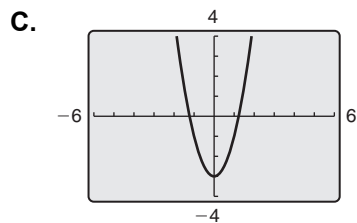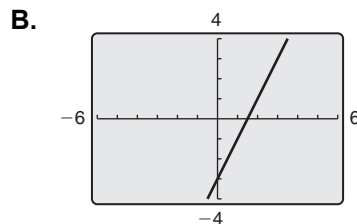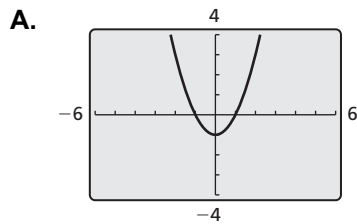**1 EXPLORATION: Matching Functions with Their Graphs**

Work with a partner. Match each function with its graph.

a. $f(x) = 2x - 3$

b. $g(x) = -x + 2$

c. $h(x) = x^2 - 1$

d. $j(x) = 2x^2 - 3$

A.

B.

C.

D.

3.3 **Function Notation** (continued)

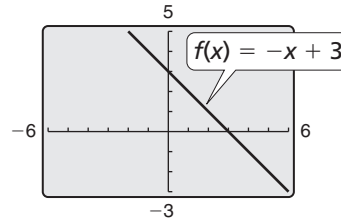**2** **EXPLORATION:** Evaluating a Function

Go to *BigIdeasMath.com* for an interactive tool to investigate this exploration.

Work with a partner. Consider the function

$$f(x) = -x + 3.$$

Locate the points $(x, f(x))$ on the graph.

Explain how you found each point.

a. $(-1, f(-1))$

b. $(0, f(0))$

c. $(1, f(1))$

d. $(2, f(2))$

Communicate Your Answer

3. How can you use function notation to represent a function? How are standard notation and function notation similar? How are they different?

Standard Notation	*Function Notation*
$y = 2x + 5$	$f(x) = 2x + 5$

3.3 Notetaking with Vocabulary
For use after Lesson 3.3

In your own words, write the meaning of each vocabulary term.

function notation

Notes:

3.3 **Notetaking with Vocabulary** (continued)

Extra Practice

In Exercises 1–6, evaluate the function when $x = -4$, **0, and 2.**

1. $f(x) = -x + 4$

2. $g(x) = 5x$

3. $h(x) = 7 - 2x$

4. $s(x) = 12 - 0.25x$

5. $t(x) = 6 + 3x - 2$

6. $u(x) = -2 - 2x + 7$

7. Let $n(t)$ be the number of DVDs you have in your collection after t trips to the video store. Explain the meaning of each statement.

    a. $n(0) = 8$

    b. $n(3) = 14$

    c. $n(5) > n(3)$

    d. $n(7) - n(2) = 10$

In Exercises 8–11, find the value of x so that the function has the given value.

8. $b(x) = -3x + 1; \; b(x) = -20$

9. $r(x) = 4x - 3; \; r(x) = 33$

10. $m(x) = -\frac{3}{5}x - 4; \; m(x) = 2$

11. $w(x) = \frac{5}{6}x - 3; \; w(x) = -18$
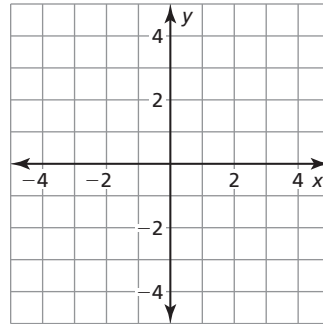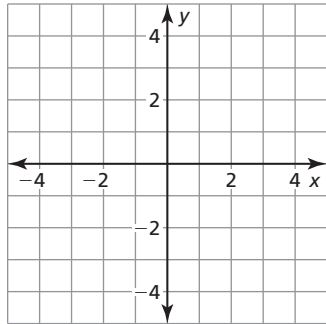
3.3 **Notetaking with Vocabulary** (continued)

In Exercises 12 and 13, graph the linear function.

12. $s(x) = \frac{1}{2}x - 2$

x	−4	−2	0	2	4
s(x)					

13. $t(x) = 1 - 2x$

x	−2	−1	0	1	2
t(x)					

14. The function $B(m) = 50m + 150$ represents the balance (in dollars) in your savings account after m months. The table shows the balance in your friend's savings account. Who has the better savings plan? Explain.

Month	Balance
2	$330
4	$410
6	$490