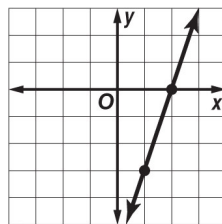# 1-7 Notes
Functions

Identify Functions Relations in which each element of the domain is paired with exactly one element of the range are called **functions**.

Example 1
Determine whether the relation {(6, –3), (4, 1), (7, –2), (–3, 1)} is a function. Explain.
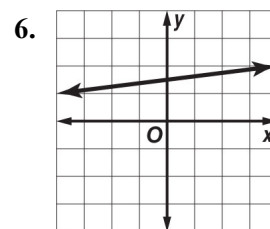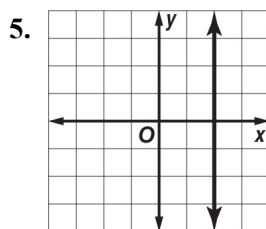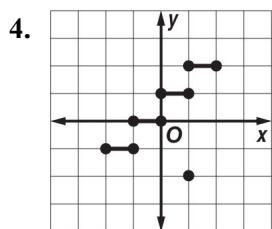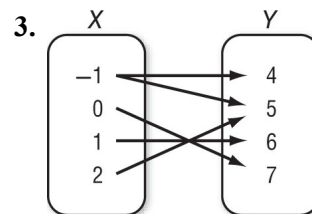
Example 2
Determine whether $3x - y = 6$ is a function.

Exercises
Determine whether each relation is a function.

1.

2.

3.

4.

5.

6.
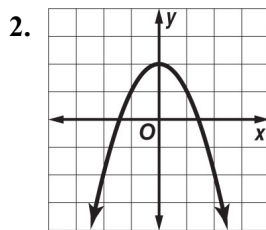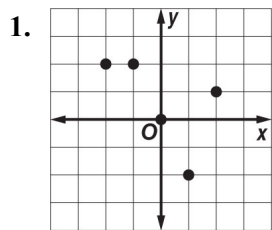
7. {(4, 2), (2, 3), (6, 1)}

8. {(–3, –3), (–3, 4), (–2, 4)}

9. {(–1, 0), (1, 0)}

10. $-2x + 4y = 0$

11. $x^2 + y^2 = 8$

12. $x = -4$

1-7 Notes *(continued)*
Functions

Find Function Values Equations that are functions can be written in a form called **function notation**.
For example, $y = 2x - 1$ can be written as $f(x) = 2x - 1$.
In the function, x represents the elements of the domain, and $f(x)$ represents the elements of the range.
Suppose you want to find the value in the range that corresponds to the element 2 in the domain.
This is written $f(2)$ and is read "f of 2." The value of $f(2)$ is found by substituting 2 for x in the equation.

Example: If $f(x) = 3x - 4$, find each value.
a. $f(3)$

b. $f(-2)$

Exercises
If $f(x) = 2x - 4$ and $g(x) = x^2 - 4x$, find each value.

1. $f(4)$ **2.** $g(2)$ **3.** $f(-5)$

7. $f(3) - 1$ **8.** $f\left(\dfrac{1}{4}\right)$ **9.** $g\left(\dfrac{1}{4}\right)$

10. $f(a^2)$ **11.** $f(k + 1)$ **12.** $g(2n)$