

# Bell Work

## Determining Whether Relations Are Functions

$(-2, 2), (-1, 2), (0, 2), (1, 0), (2, 0)$

## Determining Whether Relations Are Functions

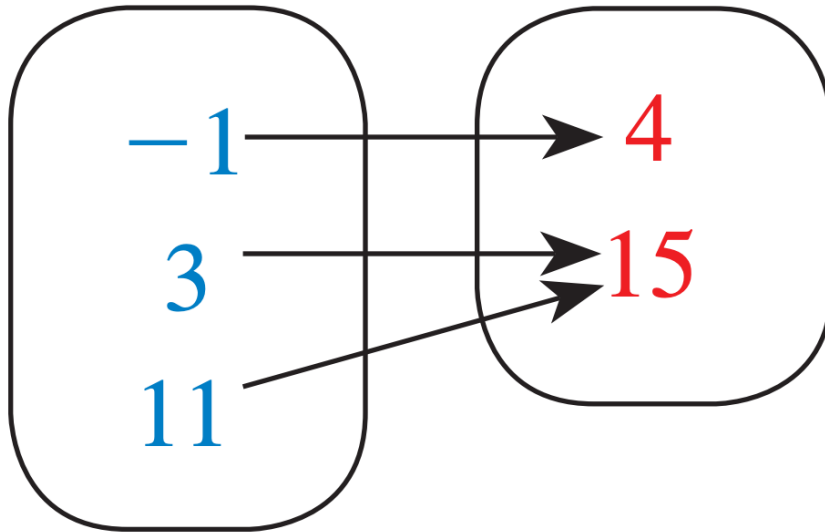
$(4, 0), (8, 7), (6, 4), (4, 3), (5, 2)$

## Determining Whether Relations Are Functions

<b>Input, <math>x</math></b>	-2	-1	0	0	1	2
<b>Output, <math>y</math></b>	3	4	5	6	7	8

# Determining Whether Relations Are Functions

**Input,  $x$**       **Output,  $y$**



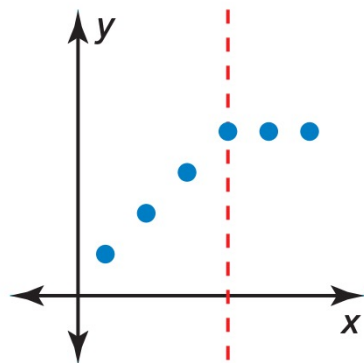


## KEY IDEA

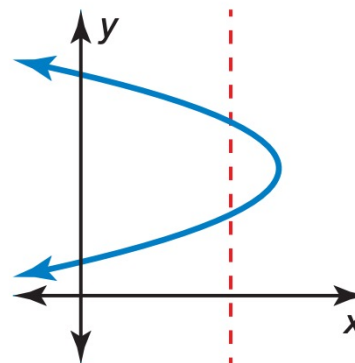
### Vertical Line Test

**Words** A graph represents a function when no vertical line passes through more than one point on the graph.

**Examples** Function



Not a function

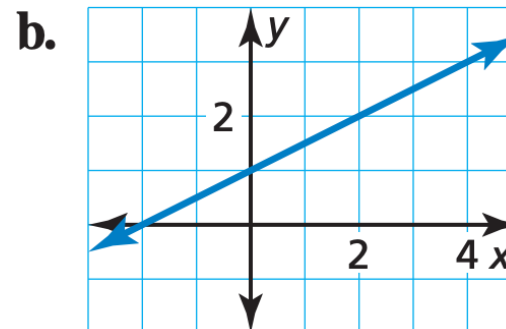
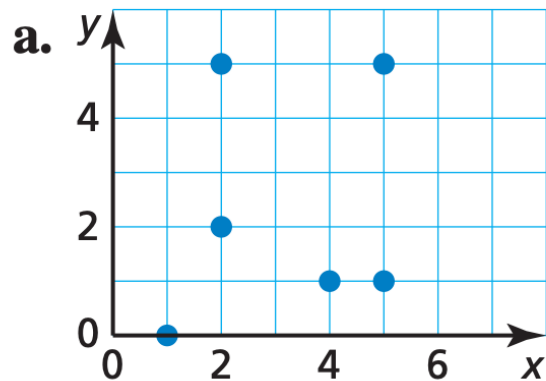


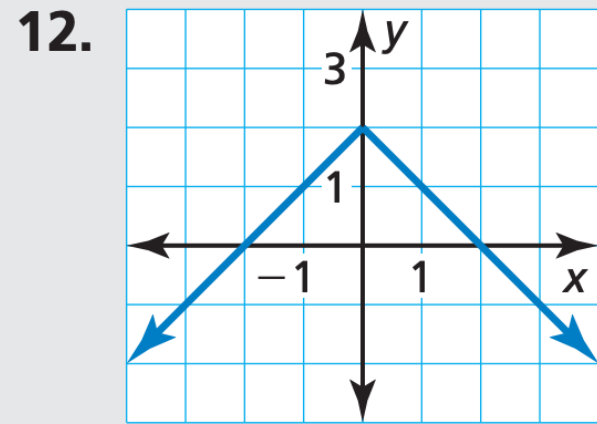
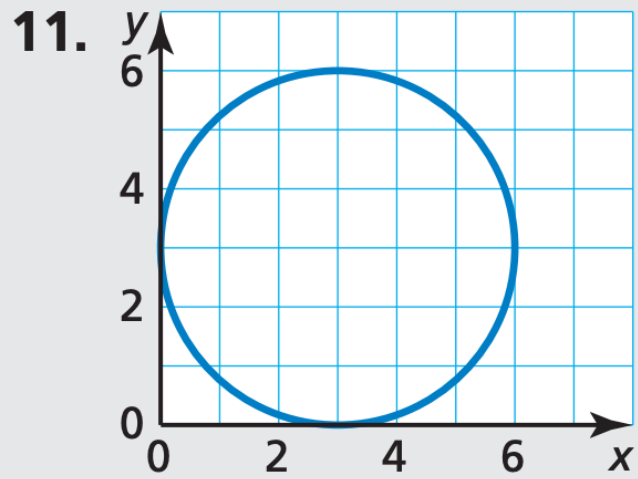
## EXAMPLE 2

## Using the Vertical Line Test



Determine whether each graph represents a function. Explain.







# Finding the Domain and Range of a Function



## KEY IDEA

### The Domain and Range of a Function

The **domain** of a function is the set of all possible input values.

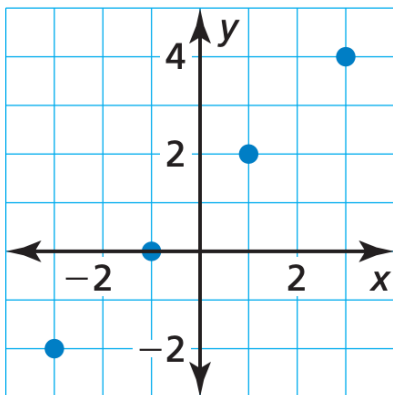
The **range** of a function is the set of all possible output values.

### EXAMPLE 3

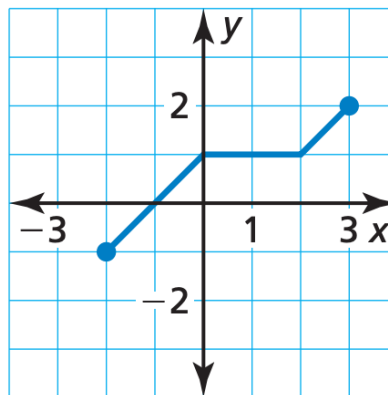
### Finding the Domain and Range from a Graph

Find the domain and range of the function represented by the graph.

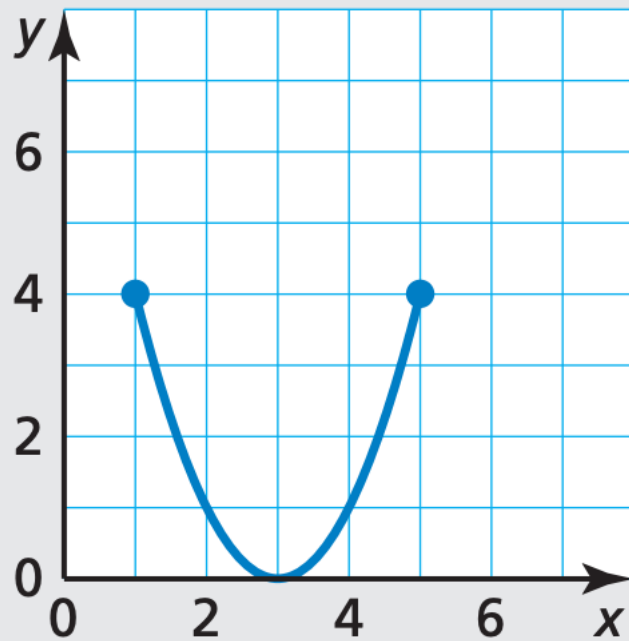
a.



b.



16.



Water pressure is 0 psi (pounds per square inch) at sea level and increases by about 0.44 psi for every foot an object descends in water.

- a. Does the situation represent a function? If so, identify the independent and dependent variables.

Water pressure is 0 psi (pounds per square inch) at sea level and increases by about 0.44 psi for every foot an object descends in water.

b. A whale dives from 1000 feet to 3500 feet. Find the domain and range.

You arrange coins in stacks so that each stack has twice as many coins as the previous stack. The first stack has 2 coins.

- a. Does the situation represent a function? If so, identify the independent and dependent variables.

You arrange coins in stacks so that each stack has twice as many coins as the previous stack. The first stack has 2 coins.

b. You have 6 stacks of coins. Find the domain and range.