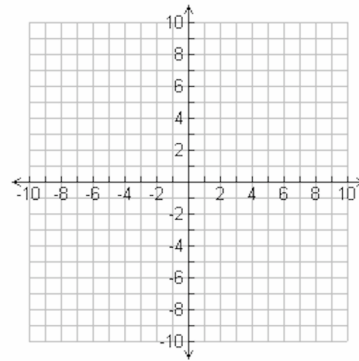


Name _____

Block _____

Date _____

Essential Question:**Label the four quadrants. Label the origin, x-axis, and y-axis.****Give the coordinates of the point and describe the location.**

A _____

E _____

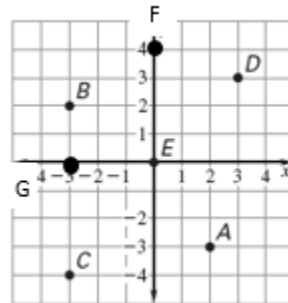
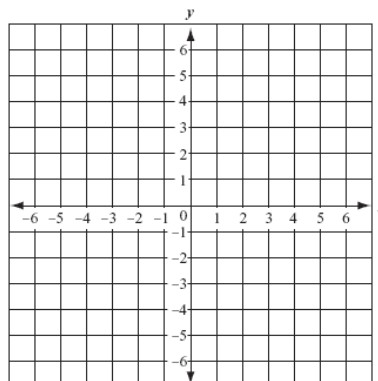
B _____

F _____

C _____

G _____

D _____

**Plot the point in a coordinate plane. Describe the location of the point.****a.** $A(1, -3)$ **b.** $B(-2, -2)$ **c.** $C(-3, 0)$ 

Function Basics

New Vocabulary:

Relation:	Domain:
Range:	Function:
Equation in 2 Variables:	Linear Function:

Representing Relations

A relation can be represented in the following ways.

Ordered Pairs

Table

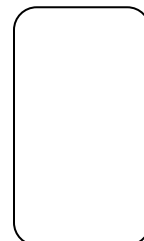
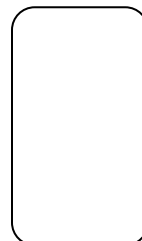
Graph

Mapping Diagram

Example 1: Represent relations

Consider the relation given by the ordered pairs $(-2,-3)$, $(-1,1)$, $(1,3)$, $(2,-2)$, and $(3,1)$.

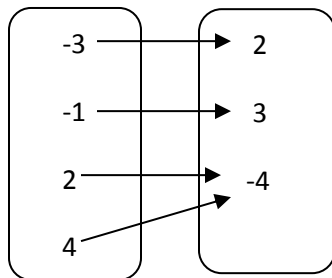
- Identify the domain and range.
- Represent the relation using a graph and a mapping diagram.



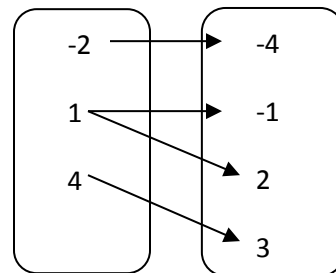
Example 2: Identify functions

Tell whether the relation is a function. Explain.

a. Input Output



b. Input Output

**Checkpoint for Examples 1 and 2**

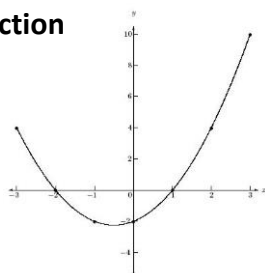
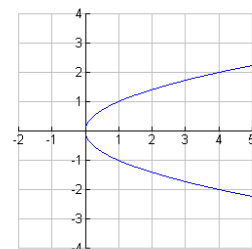
1. Consider the relation given by the ordered pairs $(-4,3)$, $(-2,1)$, $(0,3)$, $(1,-2)$, and $(-2,-4)$.
 - a. Identify the domain and range.
 - b. Represent the relation using a mapping diagram.

2. Tell whether the relation is a function. Explain.

x	-2	-1	0	1	3
y	-4	-4	-4	-4	-4

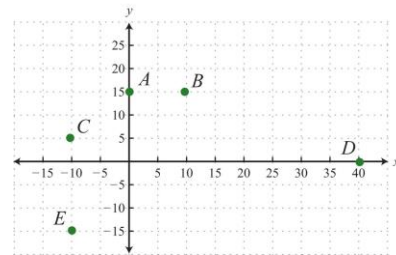
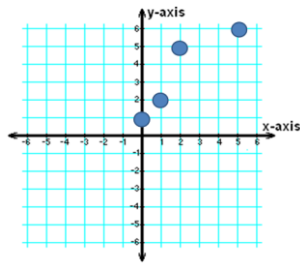
Vertical Line Test

A relation is a function **if and only if** no vertical line intersects the graph of the relation at more than one point.

Function**Not a Function**

Example 3: Use the vertical line test

Use the vertical line test to determine if the following relations are functions.

**Graph Equations in Two Variables**

To graph an equation in two variables, follow these steps:

Step 1 Construct a table of values.

Step 2 Plot enough points from the table to recognize a pattern.

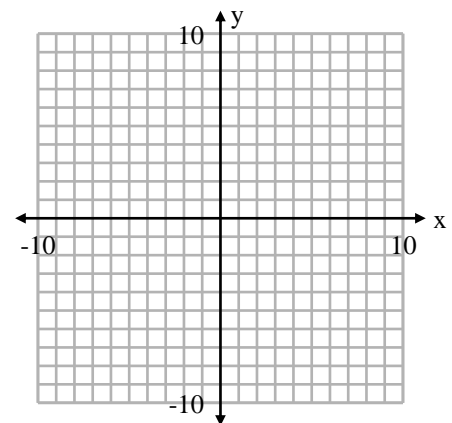
*Use a domain of -2, -1, 0, 1, 2 unless otherwise noted.

Step 3 Connect the points with a line.

Example 4: Graph an equation in two variables

Graph the equation $y = -2x - 1$.

x					
y					

**Checkpoint for Example 4**

1. Graph the equation $y = 3x - 2$.

X					
Y					

