

Bellwork!

Solve each equation.

$$1) 4 + (3^2 + 7) \div n = 8$$

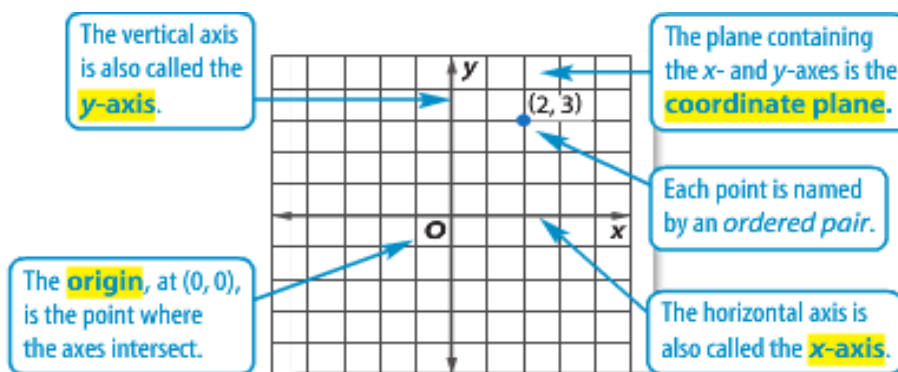
$$2) 4n - (12 + 2) = n(6 - 2) - 9$$

Lesson 1.6 (Relations)

Objectives:

- Represent relations.
- Interpret graphs of relations.

Coordinate System



Ordered Pair - a set of coordinates written (x, y)

Relation - a set of ordered pairs

Ex. $\{(-2,4), (-1,4), (0,6), (1,8), (2,8)\}$

Domain - the set of x-values

Ex. $\{-2, -1, 0, 1, 2\}$

Range - the set of y-values

Ex. $\{4, 6, 8\}$

Mapping - illustrates how our domain relates to our range



4 Representations of a Relation

Example: $\{(1,2), (-2,4), (0,-3)\}$

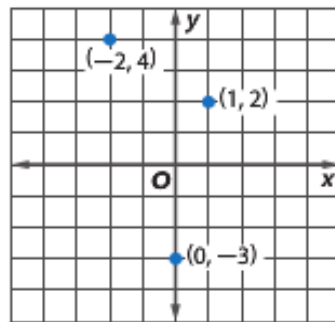
Ordered Pairs

$(1, 2)$
 $(-2, 4)$
 $(0, -3)$

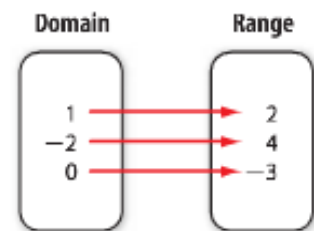
Table

x	y
1	2
-2	4
0	-3

Graph



Mapping



Domain: $\{-2, 0, 1\}$

Range: $\{-3, 2, 4\}$

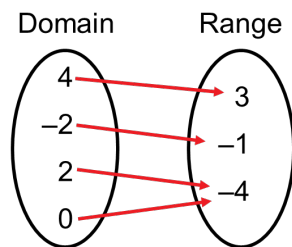
Practice

A. Express the relation $\{(4, 3), (-2, -1), (2, -4), (0, -4)\}$ as a table, a graph, and a mapping.

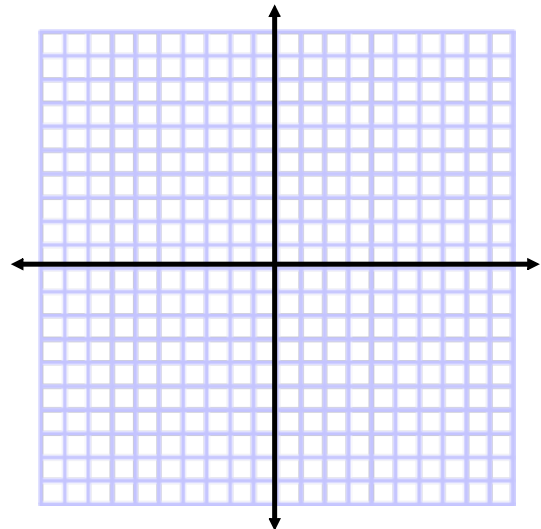
Table

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

Mapping



Graph



B.

Domain:

Range:

- **Independent Variable** - domain (x) - input - a value that determines the output
- **Dependent Variable** - range (y) - output - a value that changes in response to the independent variable

*The dependent variable **depends** on the independent variable.*

Examples:

Identify the independent and dependent variables for each relation.

a. **DANCE** The dance committee is selling tickets to the Fall Ball. The more tickets that they sell, the greater the amount of money they can spend for decorations.

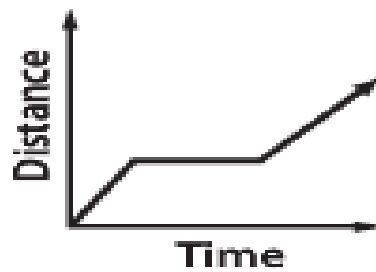
b. **MOVIES** Generally, the average price of going to the movies has steadily increased over time.

The air pressure inside a tire increases with the temperature.

As the amount of rain decreases, so does the water level of the river.

The graph represents the distance Francesca has ridden on her bike. Describe what happens in the graph.

Bike Ride



3A. **Driving to School**



3B. **Change in Income**

