Journal Entry:

Answer the following:
1. A person's field of study is often called that person's domain. What will you likely choose as your domain in the future, and what topics would be of interest to you?

2. In an average person, which age do you think they go through the greatest rate of change in their height? Why?

3. Think of what the boundary of a state of land is. How can this relate to how an inequality forms a boundary on a number line?

In Chapter 2, we are going to study Functions, Equations, and Graphs

A function can be used to model lots of real-world situations. It can be simple, like the line between two points or complex like the curve of a roller coaster. We will be working with functions in this chapter.

Section 2-1
Relations and
Functions

Students will be able to:
  -graph relations
  -identify functions

Mappings can describe relationships between sets of numbers.

A pairing is special if for each item of the first pairs exactly with one item from the second.

A relation is a set of pairs of input and output values. You can represent a relation in the following ways.

Ordered Pairs
(x, y)
(2, 3)
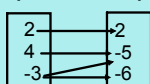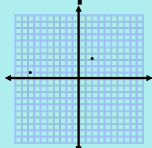(-8, 1)

Mapping Diagram
Input   Output

2 → 2
4 → -5
-3 → -6

Table of Values

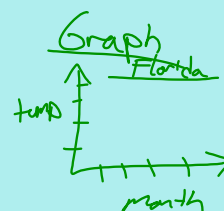| Input	Output
x	y
2	3
-8	1

Graph

The monthly average water temperature in Key West, Florida varies during the year. In January, the average water temperature is 60 degrees, in February, 70, in March, 75, and in April 78. How can we represent this in the four different ways? (groups)

Ordered pairs

(,)
(,)

table
month temp
x y

Mapping

Jan →

Graph
Florida

temp ↑
→ month

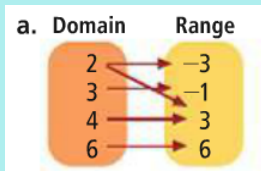Domain: *list input values* (x)

Range: *list output values* (y)

What are the domain and range of the previous problem?

A <u>function</u> is a relation in which each element of the domain corresponds with exactly one element of the range.
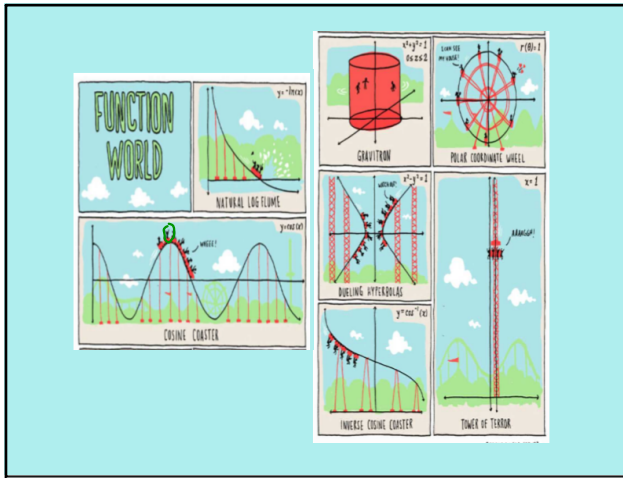
~ no repetition in domain
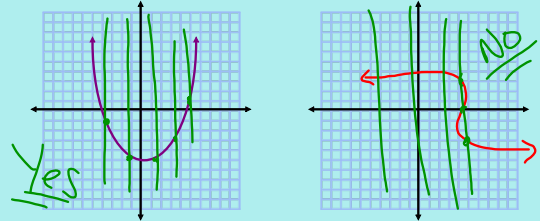
Are the following functions?

a. **Domain**   **Range**

2 → -3
3 → -1
4 → 3
6 → 6

No

{(2, 0), (-3, 2), (0, 2)}

Yes

When looking at a graph, you can determine if it is a function by doing the <u>vertical line test.</u> This means that it is a function if all vertical lines through the graph do not go through the relation in more than one place.

Which of the following are functions?

A *function rule* represents an output value in terms of an input value, and uses *functional notation*.

$$f(-2) = -4(-2)+2$$
$$8+2$$
$$(-2, 10) \quad 10$$

$y = -4x + 2$ $\underline{f(x)} = -4\underline{x} + 2$ $f(0) = -4(0) + 2$

$$(0, 2) \quad 0+2$$
$$2$$

Independent Variable is x- input
Dependent Variable is f(x)-output

For f(p) = -9p + 23, what are the output values for the inputs -2, 0, and 1/3?

$$f(-2) = 41$$
$$f(0) = 23$$
$$f(1/3) = 20$$

Hwk:
pg. 65 - 66
#8 - 12 even, 14 - 16 all,
18 - 26 every 4th,
28 - 38 evens

Attachments

XY_AXIS_82429532-7E2E-4FBC-9AB8-B7A9DAC59910.galleryitem