

Relations and Functions

Ordered pairs- pair of numbers written in alphabetical order –written in parentheses (a, b), (c, d), (x, y), etc.

horizontal axis- x-axis (left to right)

vertical axis- y-axis (up and down)

We graph on a rectangular coordinate system called the

Cartesian Coordinate System

The axes intersect in a point called the **origin** which has coordinates (0, 0). The axes also divide the plane into 4 sections called **quadrants** which begin in the upper right and move counterclockwise—they are labeled with Roman numerals.

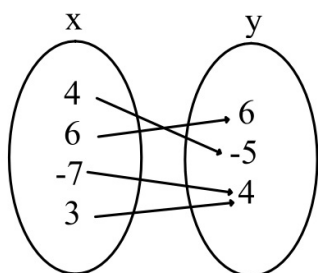
Relation- set of ordered pairs

range- second coordinate in an ordered pair (y coordinate)

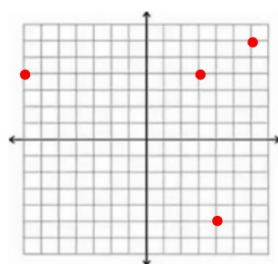
Domain- first coordinate in an ordered pair (x coordinate)

Relations may be represented as the following:

mapping



graphing



table

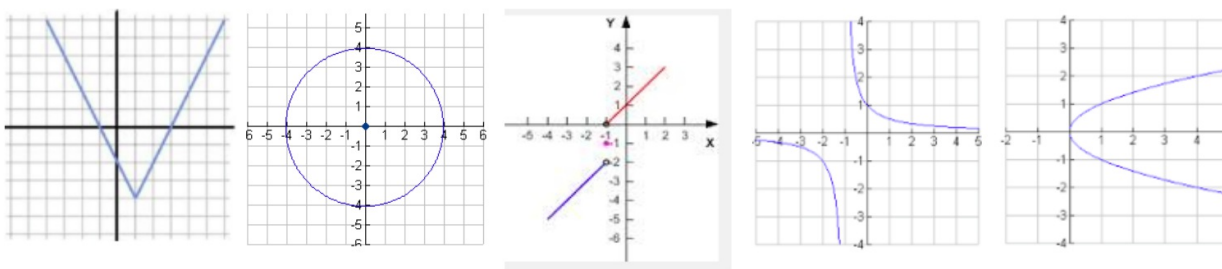
x	y
4	-5
6	6
-7	4
3	4

Function- each domain is paired with exactly one range—in other words, the domain will not be repeated

discrete function- set of individual points

continuous function- domain has infinite number of elements and graphed into a line or smooth curve

vertical line test- used to determine if a graph is a function-draw a vertical line through the graph-if the graph is touched more than one time if is not a function



Given a function $f(x) = ax + b$, evaluate by plugging in the value of x and simplifying.

Given $f(x) = 2x^2 - 5x + 1$ and $g(x) = \frac{x^2 + 2}{3}$

3

Find

1. $f(-1)$

2. $g(4)$

3. $f(3)$

Given $g(x) = 3x^2 - 2x + 5$ and $f(x) = \frac{3x + 4}{2}$

4. $g(-6)$

5. $g(f(2))$

6. $f(g(2))$