

Name: Key

Date:

Topic:

Class:

Main Ideas/Questions

Notes/Examples

Equations as Functions

- Functions can also be represented by an equation (or rule).
- The equation will generate ordered pairs by taking an input(x) that results in a certain output(y).
- The x-value is always called the independent variable.
- The y-value is always called the dependent variable.
- The graph of an equation is the set of all its ordered pairs, which often form a line or a curve.

Function Tables

Directions: Complete each function table.

1. $y = x + 7$

x	$y = x + 7$	y	(x, y)
-1	$y = -1 + 7$	6	(-1, 6)
0	$0 + 7$	7	(0, 7)
2	$2 + 7$	9	(2, 9)
4	$4 + 7$	11	(4, 11)

2. $y = x - 13$

x	$y = x - 13$	y	(x, y)
3	$3 - 13$	-10	(3, -10)
6	$6 - 13$	-7	(6, -7)
9	$9 - 13$	-4	(9, -4)
12	$12 - 13$	-1	(12, -1)

3. $y = 1 - x$

x	$y = 1 - x$	y	(x, y)
-5	$1 - (-5)$	6	(-5, 6)
-4	$1 - (-4)$	5	(-4, 5)
-3	$1 - (-3)$	4	(-3, 4)
-2	$1 - (-2)$	3	(-2, 3)

4. $y = 2x - 7$

x	$y = 2x - 7$	y	(x, y)
0	$2(0) - 7$	-7	(0, -7)
2	$2(2) - 7$	-3	(2, -3)
5	$2(5) - 7$	3	(5, 3)
8	$2(8) - 7$	9	(8, 9)

5. $y = \frac{1}{2}x - 9$

x	$y = \frac{1}{2}x - 9$	y	(x, y)
-6	$\frac{1}{2}(-6) - 9$	-12	(-6, -12)
-2	$\frac{1}{2}(-2) - 9$	-10	(-2, -10)
0	$\frac{1}{2}(0) - 9$	-9	(0, -9)
14	$\frac{1}{2}(14) - 9$	-2	(14, -2)

6. $y = -\frac{4}{3}x + 11$

x		y	(x, y)
-9	$-\frac{4}{3}(-9) + 11$	23	(-9, 23)
-3	$-\frac{4}{3}(-3) + 11$	15	(-3, 15)
3	$-\frac{4}{3}(3) + 11$	7	(3, 7)
6	$-\frac{4}{3}(6) + 11$	3	(6, 3)

Directions: Given each function and domain, find the range values.

7. $y = x - 5$; domain = $\{4, 6, 8\}$

$4 - 5 = -1$
 $6 - 5 = 1$
 $8 - 5 = 3$
 range = $\{-1, 1, 3\}$

8. $y = 3x + 1$; domain = $\{-1, 0, 1\}$

$3(-1) + 1 = -2$
 $3(0) + 1 = 1$
 $3(1) + 1 = 4$
 range = $\{-2, 1, 4\}$

9. $y = -2x + 5$; domain = $\{-2, 2, 4\}$

$-2(-2) + 5 = 9$
 $-2(2) + 5 = 1$
 $-2(4) + 5 = -3$
 range = $\{-3, 1, 9\}$

10. $y = -4 - x$; domain = $\{-6, 2, 7\}$

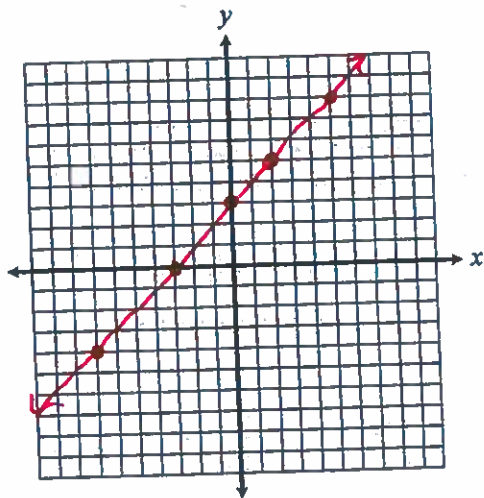
$-4 - (-6) = 2$
 $-4 - 2 = -6$
 $-4 - 7 = -11$
 range = $\{-11, -6, 2\}$

Directions: Complete each function table. Then graph the function.

Types of Functions

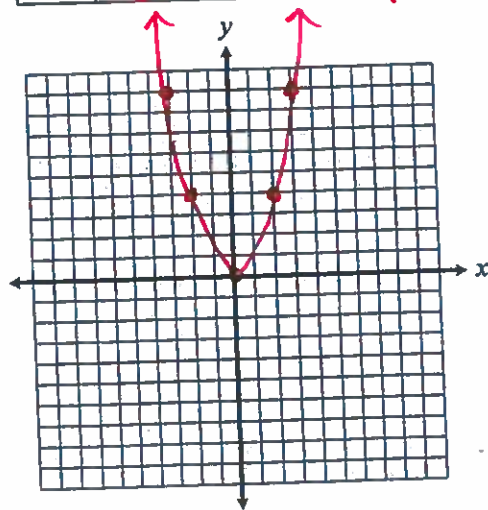
Equation 1: $y = x + 3$

x	$y = x + 3$	y	(x, y)
-7	$-7 + 3$	-4	$(-7, -4)$
-3	$-3 + 3$	0	$(-3, 0)$
0	$0 + 3$	3	$(0, 3)$
2	$2 + 3$	5	$(2, 5)$
5	$5 + 3$	8	$(5, 8)$



Equation 2: $y = x^2$

x	$y = x^2$	y	(x, y)
-3	$(-3)^2$	9	$(-3, 9)$
-2	$(-2)^2$	4	$(-2, 4)$
0	0^2	0	$(0, 0)$
2	2^2	4	$(2, 4)$
3	3^2	9	$(3, 9)$



- The first equation produced a line, so it is called a linear equation.
- The second equation produced a curve, so it is called a quadratic equation.
- We will focus on graphing linear equations in this unit!