

1.) Which graphs have the same domain? 1 + 2

2.) Which graphs have the same range? 2 + 3

3.) Half of the smaller of two consecutive even integers is equal to two more than the larger integer. Find the larger integer.

$n = 1^{st} \#$
 $n + 2 = 2^{nd} \#$

$$\frac{1}{2}n = 2 + n + 2$$

$$\frac{1}{2}n = n + 4$$

$\begin{array}{r} \frac{1}{2}n = n + 4 \\ -n \quad -n \\ \hline -\frac{1}{2}n = 4 \\ \textcircled{2} \quad \textcircled{4} \\ -n = 8 \\ \hline -1 \quad -1 \\ n = -8 \\ \boxed{n + 2 = -6} \end{array}$	$\begin{array}{r} \frac{1}{2}n = n + 4 \\ -\frac{1}{2}n \quad -\frac{1}{2}n \\ \hline 0 = \frac{1}{2}n + 4 \\ -4 \quad -4 \\ \hline \textcircled{-4} = \frac{1}{2}n \\ \textcircled{2} \\ -8 = n \end{array}$	$\begin{array}{r} 2\left(\frac{1}{2}n\right) = (n + 4) \\ n = 2n + 8 \\ -2n \quad -2n \\ \hline -n = 8 \\ \hline -1 \quad -1 \\ n = -8 \end{array}$
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TABLES

x	y
3	1
-2	-4
0	2
3	6

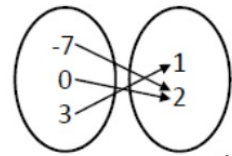
Domain: -2, 0, 3
Range: -4, 1, 2, 6
Function? no

ORDERED PAIRS

{(-1, 2), (0, 5), (2, 7)}

Domain: -1, 0, 2
Range: 2, 5, 7
Function? yes

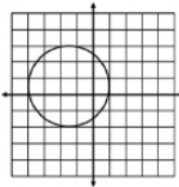
MAPPINGS



Domain: -7, 0, 3
Range: 1, 2
Function? yes

Ways to Represent RELATIONS

GRAPHS



Domain: $-4 \leq x \leq 1$
Range: $-2 \leq y \leq 3$
Function? no

EQUATIONS

$$y = x^2 - 1$$

Domain: all real #s
Range: $y \geq -1$
Function? yes

FUNCTION NOTATION

Equations can be written in a form called function notation.
We use this as a quick way to evaluate functions for a given input.

Example:

$$y = 2x - 8$$



$$f(x) = 2x - 8$$

This is read as "f of x"

1 $f(x) = x + 7$

a. $f(5) = 5 + 7$
 $= 12$

b. $f(-1) = -1 + 7$
 $= 6$

c. $f(-3) = -3 + 7$
 $= 4$

2 $g(x) = 3x - 8$

a. $g(1) = -5$

b. $g(-3) = -17$

c. $g(0) = -8$

$$g(1) = 3(1) - 8$$

$$g(-3) = 3(-3) - 8$$

$$g(0) = 3(0) - 8$$

3 $h(x) = \frac{2}{3}x - 1$

a. $h(-3) = \frac{2}{3}(-3) - 1$
 $= -2 - 1$

b. $h(0) = -1$

c. $h(9) = 5$

4 $f(x) = x^2 - x$

a. $f(-4) = 20$

b. $f(-1) = 2$

c. $f(7) = 42$

$(-4)^2 - (-4)$
 $16 + 4$

$(-1)^2 - (-1)$
 $1 + 1$

5 $h(x) = 3x^2 + 7$

a. $h(-4) = 3(-4)^2 + 7 = 55$

b. $h(-2) = 3(-2)^2 + 7 = 19$

c. $h(0) = 3(0)^2 + 7 = 7$

6 $f(x) = -x^2 + 6x - 4$

a. $f(-3) = -31$

b. $f(-1) = -11$

c. $f(5) = 1$

$-(-3)^2 + 6(-3) - 4$

$-(-1)^2 + 6(-1) - 4$

$-(5)^2 + 6(5) - 4$

$-9 - 18 - 4$

$-1 - 6 - 4$

$-25 + 30 - 4$

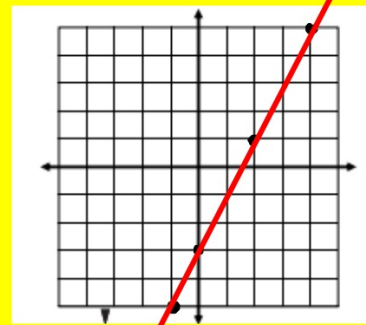
Graphing Functions

Functions can be represented by an equation. To graph them, you can create a table to plot the points.

Example: $y = 2x - 3$

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

x	y
-1	-5
0	-3
2	-1
4	5



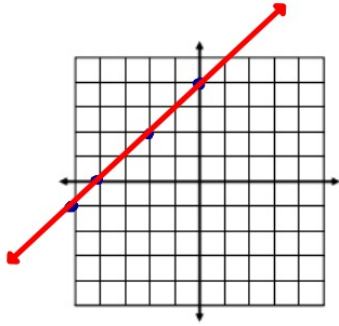
Domain
Input

Range
Output

Complete
on graph
paper!

1. $y = x + 4$

x	y
-5	-1
-4	0
-2	2
0	4



-5 + 4
 -4 + 4
 -2 + 4
 0 + 4

$$\frac{3}{4}(-4) - 2 =$$

$$\frac{3}{4}(0) - 2 =$$

$$\frac{3}{4}(4) - 2 =$$

$$\frac{3}{4}(8) - 2 =$$

2. $y = \frac{3}{4}x - 2$

x	y
-4	-5
0	-2
4	1
8	4

