

Representing

# Functions

as rules, tables, & graphs

# Vocabulary:

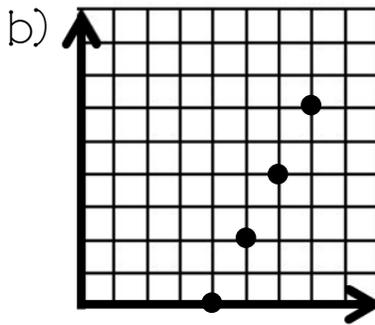
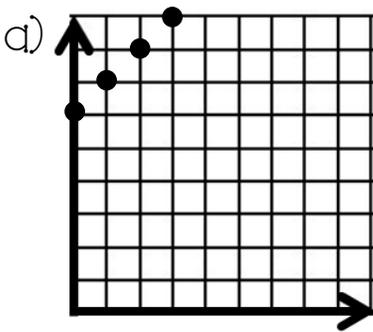
x			
y			

Relation:

Function:

## Example 4:

Write a rule for the function represented by the graph.



How do you write a rule for a function?

## Example 3:

Write a rule for the function.

a)

x	2	3	4	5
y	-1	0	1	2

b)

x	0	2	5	9
y	0	6	15	27

c)

x	0	1	2	3
y	2	5	8	11

## Example 1:

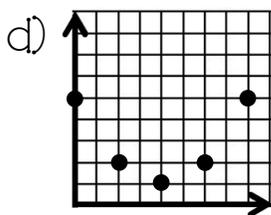
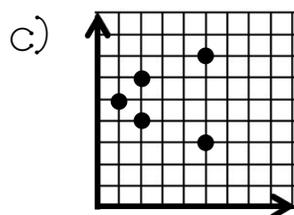
Tell whether the pairing represents a function.

a)

x	1	2	3	4
y	3	4	7	13

b)

x	1	2	2	7
y	5	6	7	8



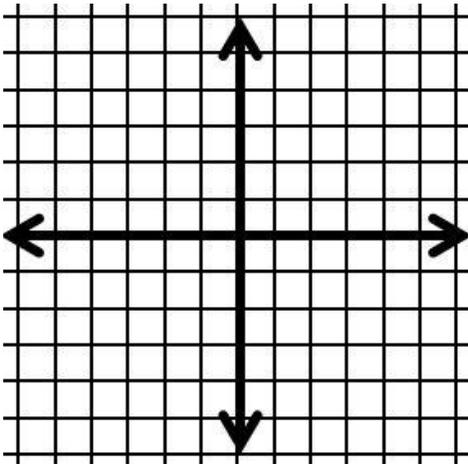
What is a function?

## Example 2:

Make a table and graph the function.

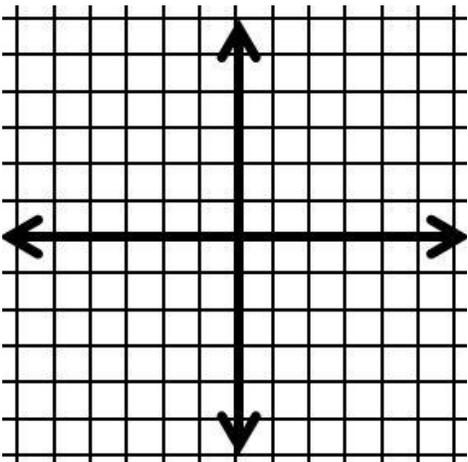
a)  $y = 3x - 4$

domain:  $\{0, 1, 2, 3\}$



b)  $y = \frac{1}{2}x + 1$

domain:  $\{0, 2, 4, 6\}$



How do you graph a function?

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# Vocabulary:

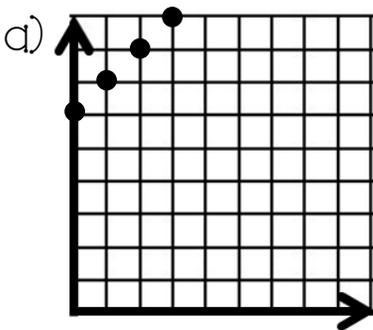
x	domain	input	independent
y	range	output	dependent

Relation: a set of ordered pairs

Function: a relation in which every member of the domain (input) is paired with exactly one member of the range (output).

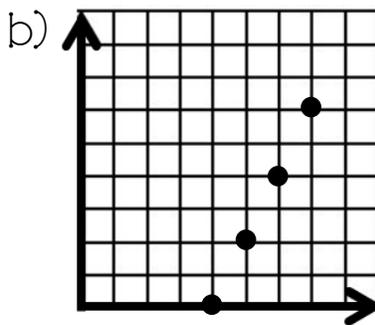
## Example 4:

Write a rule for the function represented by the graph.



x	0	1	2	3
y	6	7	8	9

$$y = x + 6$$



x	4	5	6	7
y	0	2	4	6

$$y = 2x - 8$$

How do you write a rule for a function?

## Example 3:

Write a rule for the function.

d)

x	2	3	4	5
y	-1	0	1	2

$$y = x - 3$$

e)

x	0	2	5	9
y	0	6	15	27

$$y = 3x$$

f)

x	0	1	2	3
y	2	5	8	11

$$y = 3x + 2$$

## Example 1:

Tell whether the pairing represents a function.

a)

x	1	2	3	4
y	3	4	7	13

yes

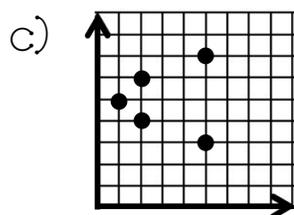
(every member of the domain is paired with exactly one member of the range)

b)

x	1	2	2	7
y	5	6	7	8

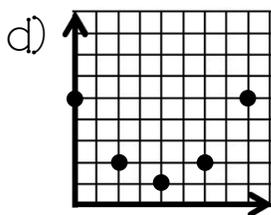
no

(a member of the domain **2**, is paired with more than one value in the range)



no

(does not satisfy the vertical line test)



yes

(satisfies the vertical line test)

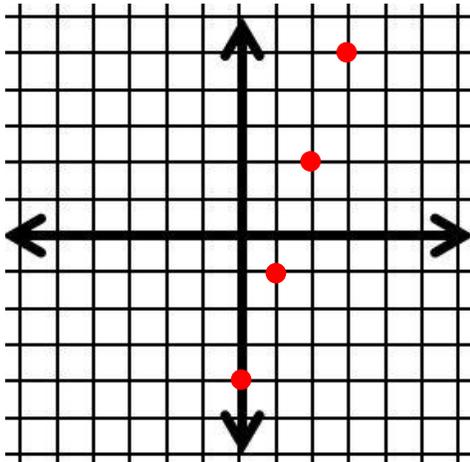
What is a function?

## Example 2:

Make a table and graph the function.

c)  $y = 3x - 4$

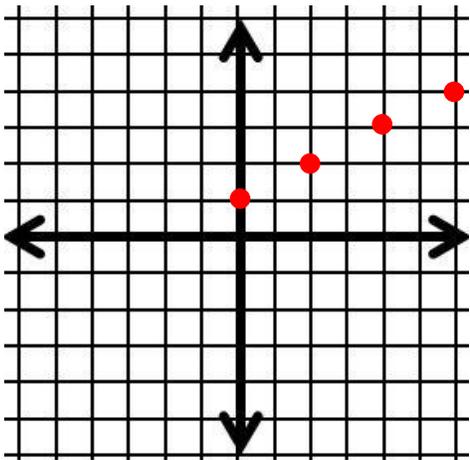
domain:  $\{0, 1, 2, 3\}$



<b>x</b>	0	1	2	3
<b>y</b>	-4	-1	2	5

d)  $y = \frac{1}{2}x + 1$

domain:  $\{0, 2, 4, 6\}$

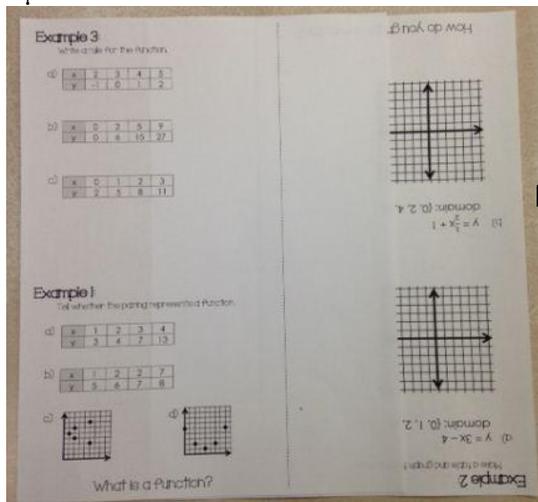
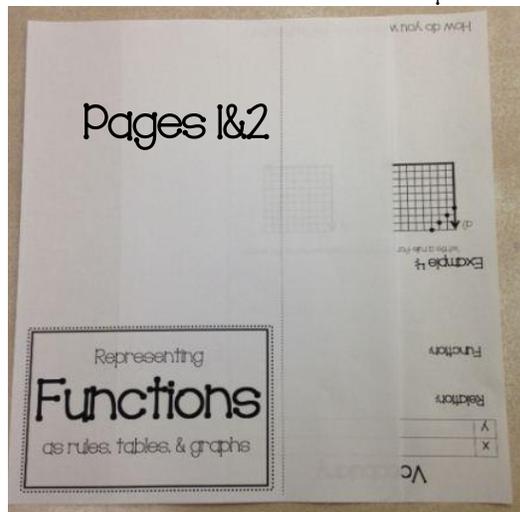


<b>x</b>	0	2	4	6
<b>y</b>	1	2	3	4

How do you graph a function?

## Directions

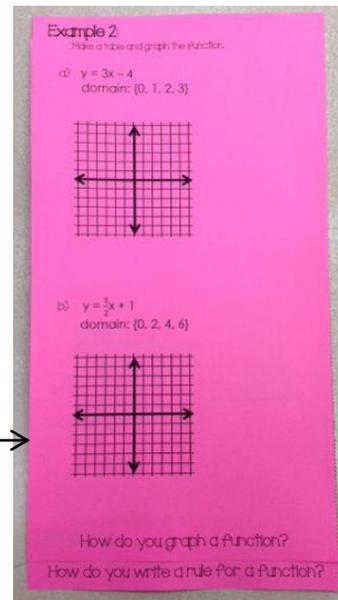
Step 1: Print pages 1&2, and 3&4 front to back. I use the option on my printer double sided and to flip along the short edge. If you print single-sided first, then flip manually and place in the photocopier like so:



(The information should be facing in opposite directions)

Step 2: Cut along the dotted line to cut off the extra piece on the right side of the paper. If you photocopied this correctly, there should not be any problems in this area on the back side either.

Step 3: Line up the two pieces as shown →



Step 4: Fold over the top portion and secure with a few staples. The final product should look like this:

