

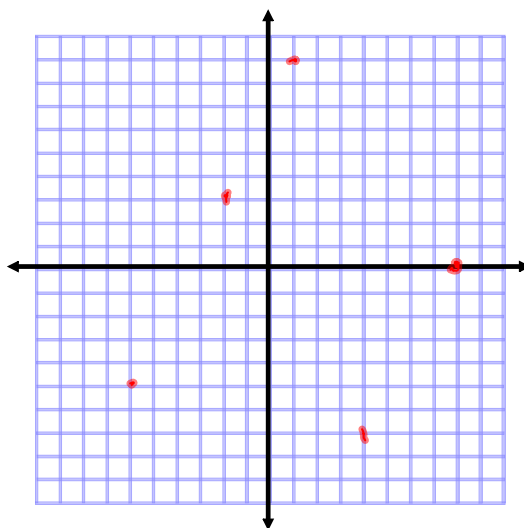
Warm-Up:

1) Find the domain and range of the following relation. Then graph.

$\{(-2, 3), (1, 9), (-6, -5), (4, -7), (8, 0)\}$

Domain:  $\{-2, 1, -6, 4, 8\}$

Range:  $\{3, 9, -5, -7, 0\}$



37, 38, 14

14)  $(1992, 18)$   $(1993, 16)$   $(1994, 14)$

37)  $\{0, -2, 4, -3\}$   $\textcircled{D}$

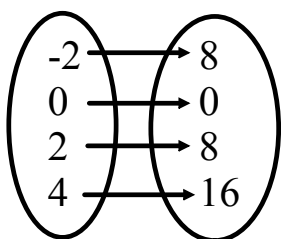
38)  $2000(.015) = \$30$   
 $\textcircled{F}$

### Section 3-2: Representing Functions

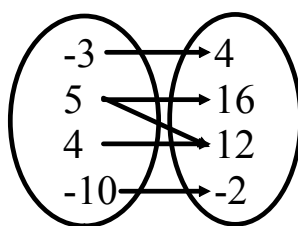
When each member of the domain is linked to only one member of the range, the relation is a **function**.

Examples:

1) Determine whether each relation is a function. Explain.



Yes



No

x	y
-7	-12
-4	-9
2	-3
5	0

Yes

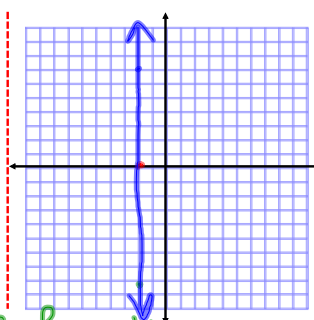
The **vertical line test** shows if a graph represents a function.

If a vertical line can be drawn that intersects more than one points on a graph at any point, then that relation is not a function.

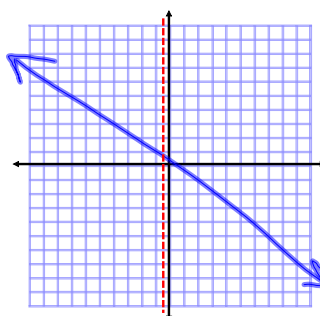
Examples:

2) Determine if  $x = -2$  is a function.

No



Any line is a function  
unless it is vertical  
( $x = \text{some } \#$ )



If an equation is written with  $y$  by itself, then it can be written in **functional notation**.

Linear Notation:

$$y = 3x + 2$$

Functional Notation:

$$f(x) = 3x + 2$$

$\uparrow$   
f of x

Examples:

3) If  $f(x) = 3x - 4$ , find each value.

a)  $f(4) = 3(4) - 4 = 12 - 4$   
 $f(4) = 8$

b)  $f(-5) = 3(-5) - 4 = -15 - 4$   
 $f(-5) = -19$

c)  $f(n) = 3(n) - 4$   
 $f(n) = 3n - 4$

d)  $f(\text{wombat}) = 3(\text{wombat}) - 4$

e)  $f(\text{🐨}) = 3(\text{🐨}) - 4$

Examples:

4) The function  $h(t) = 1248 - 160t + 16t^2$  represents the height of an object ejected downward at a rate of 160 feet per second from an airplane flying at 1248 feet. Find each value if  $t$  is the number of seconds since the object has been dropped.

a)  $h(3) = 1248 - 160(3) + 16(3)^2$   
 $h(3) = 1248 - 480 + 144$   
 $h(3) = 912 \text{ feet}$

b)  $h(2z) = 1248 - 160(2z) + 16(2z)^2$   
 $h(2z) = 1248 - 320z + 64z^2$

Examples:

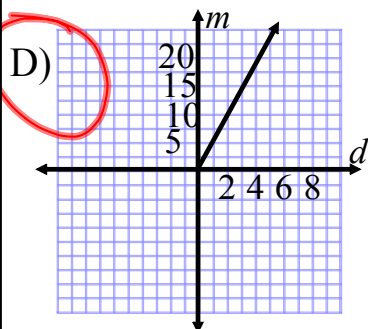
5) The algebraic form of a function is  $m = 5d$ , where  $d$  is the number of dollars customers of Mike's Autos donate to a charity and  $m$  is the donation made by Mike's Autos. Which of the following represents the same function?

A) For every \$2 donated, Mike's Autos donates \$7.

B)  $f(d) = 5m$

C) 

$d$	0	10	60
$m$	0	2	12



Homework: pg. 152-154 #15-26 all, 28-38 even, 46, 48

Section 3-2 Vocab