5-Minute Check

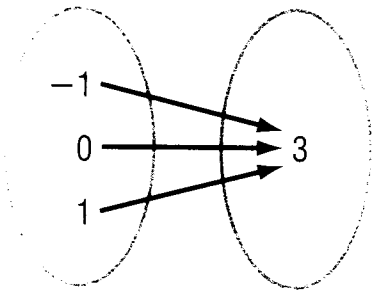
(over Lesson 4-6)

Transparency 4-7

BE-1A WEDNESDAY 1-23-08

Determine whether each relation is a function.

1.



2.

16	−8
12	−6
0	0
−4	2
−10	5

3. {(7, 0), (0, 7) (−7, 0), (0, −7)}

4. $y = 6$

5. If $g(x) = -2x - 2$, find $g(-2x)$.

6. **Standardized Test Practice** If $f(x) = \frac{1}{2}x + 6$, what is $f(50)$?

ANSWERS

1. yes
2. yes
3. no
4. yes
5. $g(-2x) = 4x - 2$
6. 31

Homework Review — Pg. 229 #4-9

Continue Ch. 4-6 Functions

Function Notation ← How you write something

If you are using an equation with two variables, there is a shorthand way of showing it is a function — AND a way to easily say "find the range of the function when its domain is some value."

Ex) Say you know $y = 2x + 3$ is a function, write it as

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

Read "y is a function of x which equals $2x + 3$"

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

the $y = f(x)$ is "understood"

$f(x) = 2x + 5$

↑ independent variable

the function name is f

Suppose you know x is -2 and you want to say find y when x is -2

x	$y = f(x) = 2x + 5$
-2	

You would write:

$f(x) = 2x + 5$

$f(-2) = 2(-2) + 5 = -4 + 5 = 1$

↑ x ↑ y

The (x, y) pair is $(-2, 1)$.

$f(x) = 3x^2$

$f(2) = 3(2)^2 = 3 \cdot 4 = 12$

WRITE THESE DIRECTLY UNDER EACH OTHER.

You can have as many function names as you need, typically g and h are use after f.

Ex) $f(x) = 3x \quad g(x) = 2x^2 \quad h(x) = x - 1$

$g(-1) = ?$

$g(x) = 2x^2$

$g(-1) = 2(-1)^2 = 2 \cdot 1 = 2$

The (x, y) pair is $\boxed{(-1, 2)}$

$\Rightarrow (x, g(x))$

or (x, y)

$f(4) = ?$

$f(x) = 3x$

$f(4) = 3(4) = 12 \qquad \boxed{(4, 12)}$

$h(0) + 3 = ?$

$h(x) = x - 1$

$h(0) = (0) - 1 = -1$

$\boxed{h(0) + 3 = -1 + 3 = 2}$

Ex 3 Pg 228 ©

$f(x) = 2x + 5$

$f(x+3) = ?$

$f(x) = 2x + 5$

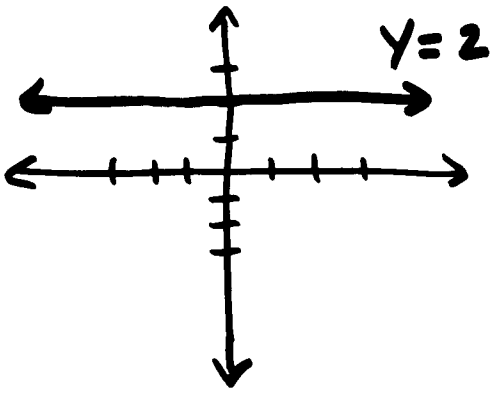
$f(x+3) = 2(x+3) + 5$

$f(x+3) = 2x + 6 + 5$

$f(x+3) = 2x + 11$

ordered pair $\Rightarrow (x+3, 2x+11)$

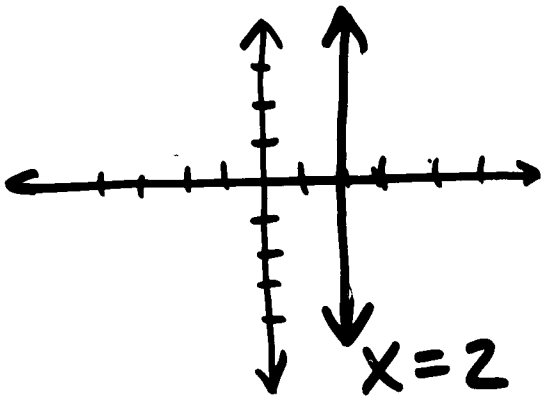
Two Special Lines:



HORIZONTAL

$Y = \text{NUMBER}$

FUNCTION



VERTICAL

$X = \text{NUMBER}$

NOT A FUNCTION

HW: Page 229 # 17 to 22, 32 to 37.