

BE-Alg. 1 | MONDAY 10-4-10

- ① DEFINE A RELATION.
- ② DEFINE "independent variable"
- ③ DEFINE "vertical line"
- ④ DEFINE "like terms"

- Review graded Quiz 6 (time permitting)

Ch 4-6 FUNCTIONS

function A special type of relation
 $\uparrow$
(SET OF ORDERED PAIRS)

WHERE each x is PAIRED WITH
 $\uparrow$
the first
VALUE

ONE UNIQUE y .

* (M) $\Rightarrow$ "X drives the show"

(EX) function $\{(3, 6), (2, 9), (-1, 8)\}$

(EX) NOT A
function $\{(3, 6), (2, 9), (3, 8)\}$
WHY NOT?

WHICH ARE FUNCTIONS?

X	Y
-2	-5
-1	-9
0	4
1	2
2	6

yes

X	Y
-2	-5
-1	-9
0	4
1	2
-2	-6

No

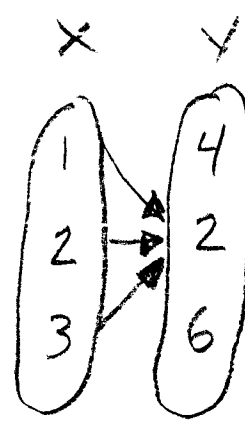
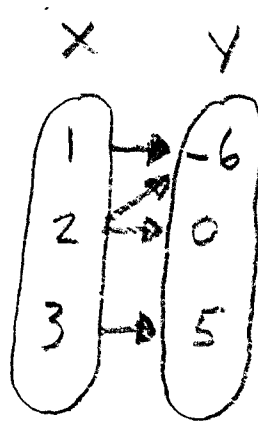
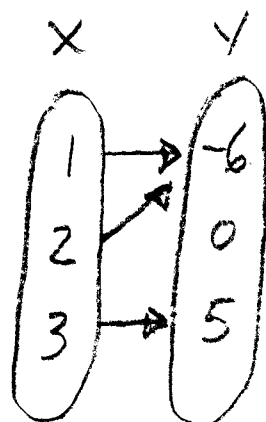
X	Y
-2	5
-2	5
4	5
0	5
6	5

yes

X	Y
-3	-2
-8	-6
-9	-2
-6	4
5	3

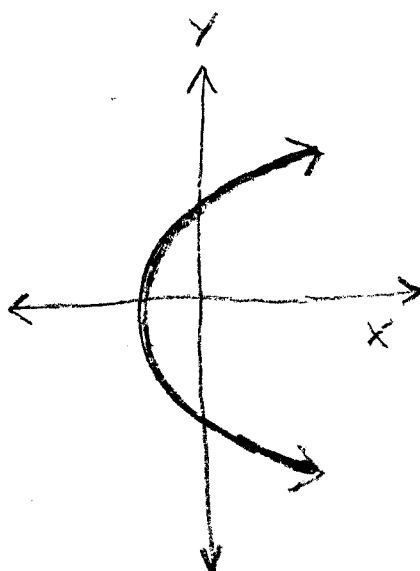
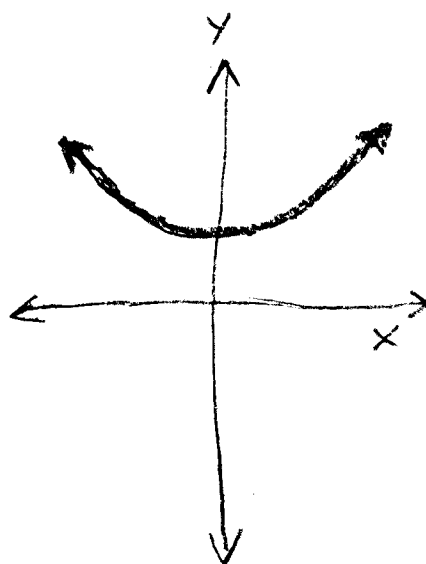
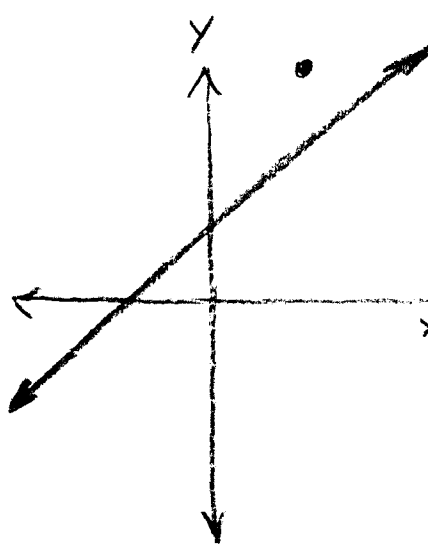
yes

Which are functions?



These above drawings are called _____?
(mappings)

Which are functions?



VLT $\Rightarrow$ Vertical Line Test



There is an easy way to write an equation so everyone knows it is a function.

Function
NOTATION

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

Reads: "y equals a function of x which equals $2x + 3$ "

↑
independent variable

Often, the dependent variable is left off

(EX) $f(x) = 3x + 1$

is understood to be $y = f(x) = 3x + 1$

Function notation makes it particularly easy to ask for the y value at some x value: Assume $y = f(x) = 3x + 1$
Find $f(5)$

(EX) $f(x) = 3x + 1$
 $f(\quad) = 3(\quad) + 1$ $\therefore (5, 16)$ is an (x, y)
 $f(5) = 3(5) + 1$
 $f(5) = 16$ ↑ PAIR OF THIS FUNCTION

In $f(x) = 3x + 1$, f is actually the name of the function. The next two common names are $g(x)$ and $h(x)$.

$$\textcircled{\text{EX}} \quad y = f(x) = 2x + 3$$

$$y = g(x) = 3x + 5$$

$$y = h(x) = x^2$$

$$f(2) = 2(2) + 3 = 7$$

$$g(2) = 3(2) + 5 = 11$$

$$h(2) = (2)^2 = 4$$

$$f(3) + 8 \Rightarrow 2(3) + 3 \Rightarrow 9 + 8 = \boxed{17}$$

* Most rules used in Algebra I assume you are dealing with functions.

Homework: Pg 229 #17-24, 29-34
230

Alg. 1 EXAM 2 TOPICS

Ch. 4-6 Functions

- Define, identify, use function notation

Ch. 3-6 Proportions

- Define, properties of proportions

Ch. 3 $\Rightarrow$ Solving Equations

- GRE, undos
- consecutive integer problems

Ch. 2 $\Rightarrow$ • Sign Rules / Fraction Rules

Ch. 1 $\Rightarrow$ • "Like" Terms $\Rightarrow$ Define

- Distributive Property
- Order of Operations
- Graphs

Suggested Practice Problems

Practice: End of Chapter Study Guide & Review

Ch. 4-6 Pg. 249 Read Concept Summary
Do # 37 to 45

Ch 3-6 Pg 182 Read Concept Summary
Do # 39 to 44
(use cross-products!)

Ch 3-4 Pg 181 # 27, 29, 31

Ch 3-5 Pg 182 # 33, 34, 37

Ch 3-8 Pg 184 # 50, 51

Ch 2-2 Pg 111 # 19 to 24

Ch 2-3 Pg 111 # 29 to 33

Ch 2-4 Pg 112 # 40 to 45

Ch 1-2 Pg 58 # 24 to 27, # 30 to 32

Ch 1-5 Pg 60 # 60 to 65

Ch 1-8 Pg 61 # 80

Homework: Continue Review FOR Exam 2.