

BE-Algebra I TUESDAY 9-30-08

① Amy CAN do 12 MATH problems in 20 minutes. At this rate, how many math problems can she do in 2 hours?

② $4x - 2y = 6$ for y

③ for $x = \{-2, -1, 0, 1, 2\}$, find the RANGE for the equation in ②

④ Graph the (d, t) pairs from ③

⑤ DEFINE A RELATION.

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

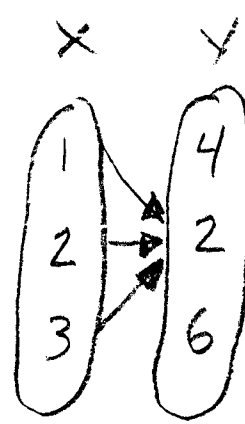
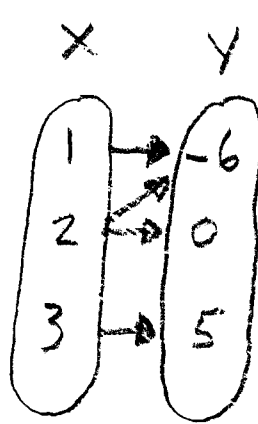
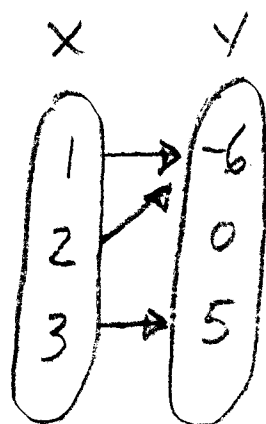
X	Y
-2	5
-2	5
4	5
0	5
6	5

yes

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

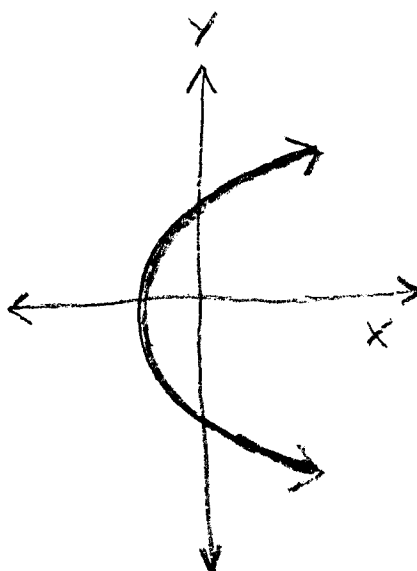
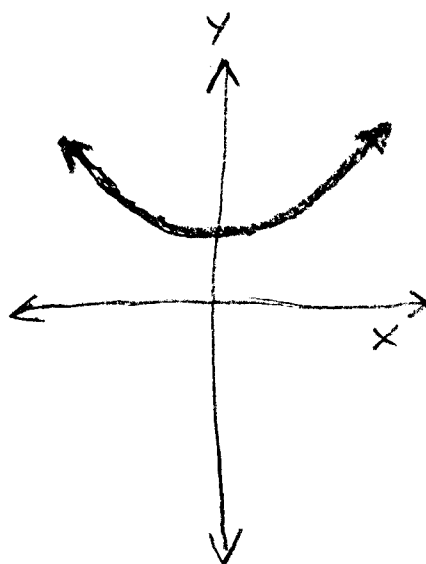
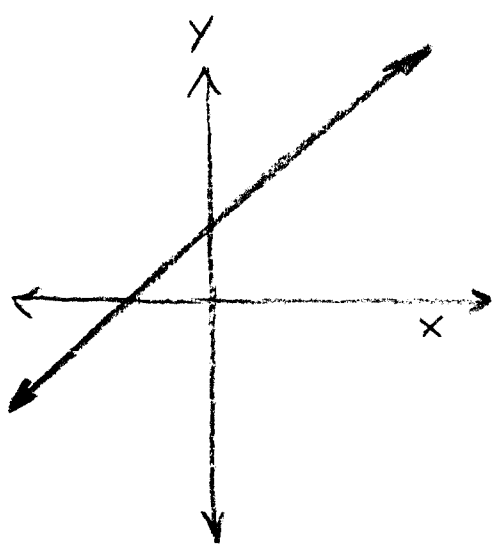
yes

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

(EX) $f(5) = 3(5) + 1$
 $f(5) = 16$

$\therefore (5, 16)$ is an (x, y) 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 $h(x)$.

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

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

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

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

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

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

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

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

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