ORDERED PAIRS

Example	Non-Example
(-5, 0)	(-5, 4)
(-3, 2)	(-3, 3)
(-2, -4)	(-3, -4)
(3, 2)	(3, 2)
(6, -1)	(6, -1)

TABLE

Example

X	Y
-5	0
-3	2
-2	-4
0	3
3	2
6	-1

Non-Example

X	Y
-4	4
-3	1
-3	0
0	5
3	-2
6	-5

FUNCTION NOTATION

$\underbrace{f(x)}_{y}$ x-indep. y-dependent

Vertical Line Test

-If a relation is a function the vertical will only intersect the graph in <u>one</u> place

PARENT FUNCTIONS

-Linear: $y = x$

-Quadratic: $y = x^2$

-Exponential: $y = b^x$

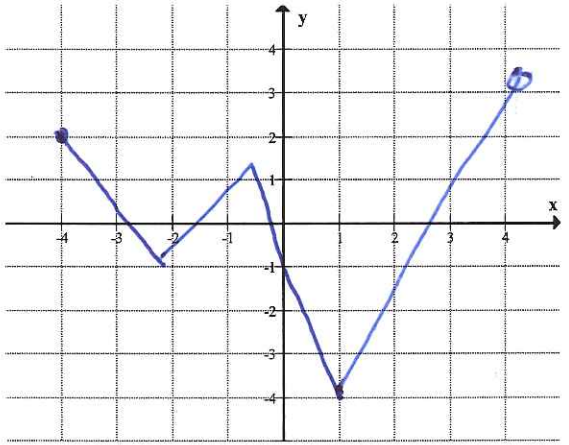
-Inverse: $y = \frac{a}{x}$

FUNCTIONS

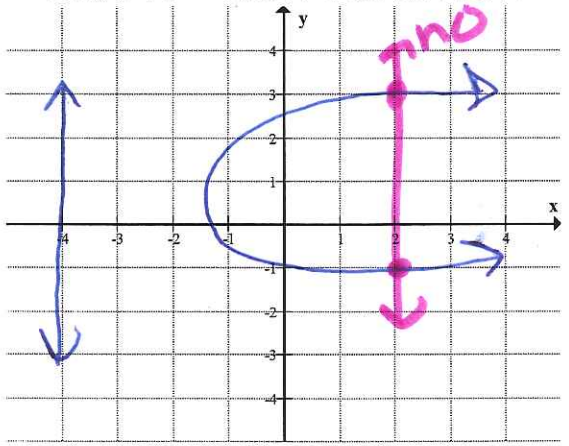
Defn: a relation where each input (Domain element) has only one output (range element)

*no repeating x values

GRAPH-FUNCTION

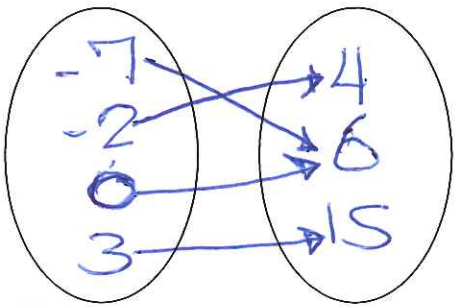


GRAPH – NON-FUNCTION

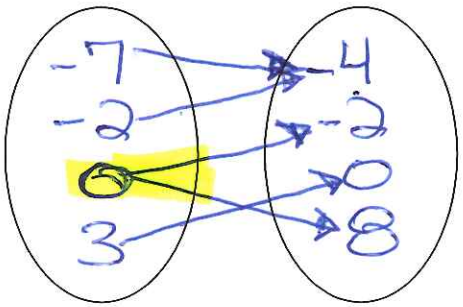


MAPPINGS

Example



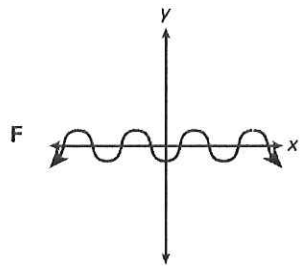
Non-Example

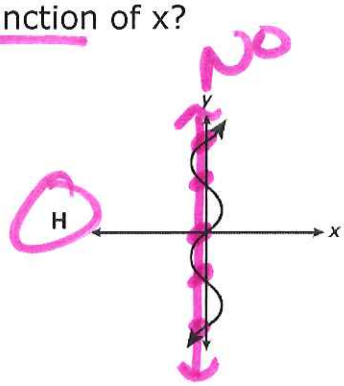


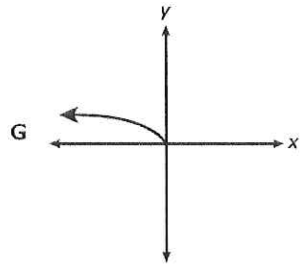
Name: Key Date: _____ Period: _____

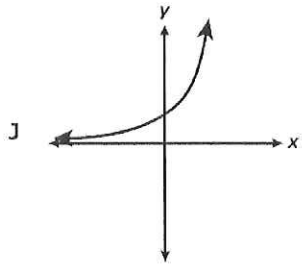
Functions Practice:

1. Which graph does not show y as a function of x?









2. The set of ordered pairs below represents some points on the graph of function ***f***.

{ (-2,3), (1,6), (-4,11), (5,38), (3,18)}

What is the parent function of ***f***?

A. $y = x$

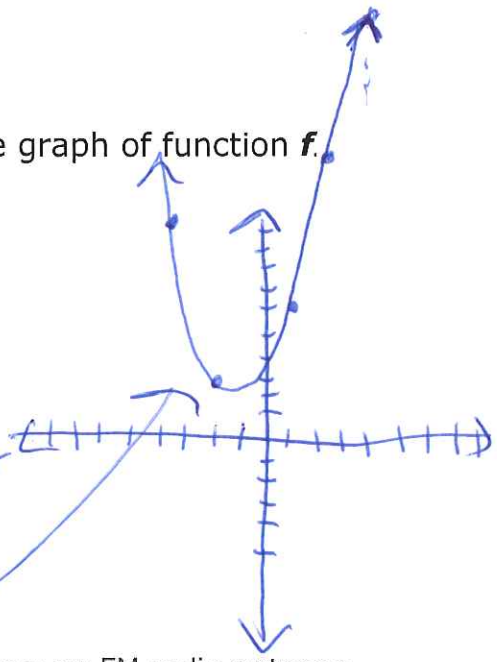
B. $y = 3^x$

C. $y = x^2$

D. $y = \sqrt{x}$

x	y
-4	11
-2	3
3	6
1	18
3	38

problem



3. An architect is designing an office building with n floors that will have an FM radio antenna 15.85 m tall on its roof. Each floor of the building will be 3.9 m high. Which function can be used to find the total height of the building in meters, including the FM antenna?

rate

3.9n + 15.85

A $h(n) = 15.85n + 3.9$

B $h(n) = 3.9n + 15.85$

C $h(n) = 3.9n - 15.85$

D $h(n) = 19.75n$

4. Which of the following relations is a function?

I. {(0, 0), (0, 1), (0, 2)} ✗
II. {(0, 0), (1, 1), (2, 4)} ✓
III. {(0, 0), (1, 2), (2, 2)} ✓
IV. {(0, 0), (1, 2), (1, 3)} ✗

A I, II, and III only

B I and II only

C II and III only

D III and IV only

no repeating x-values

5. Students at a school will sell hats to raise money. There are some hats left over from last year, and 20 boxes of hats will be ordered this year. When the order arrives, the total number of hats the students will have can be determined using the function $f(x) = 48x + 37$, where x represents the number of boxes ordered. If the number of hats per box changes so that the situation is modeled by the function $h(x) = 24x + 37$, then how many fewer hats will the students have available to sell if they still order 20 boxes?

Record your answer and fill in the bubbles on your answer document.

1st $f(20) = 48(20) + 37$
$f(20) = 997$

2nd $h(20) = 24(20) + 37$
$h(20) = 517$

Subtract: $997 - 517 =$ 480

OR $48 - 24 =$ 24 hats per box fewer
so...
$24(20) =$ 480

+	4	8	0				
●	0	0	0	0	0	0	0
−	1	1	●	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	●	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	●	8	8	8	8	8
	9	9	9	9	9	9	9

6. For the function w, $w(9) = -7$, and $w(-7) = 9$. If $y = w(x)$, what is the value of y when $x = -7$?

($w(9)$: x = 9, y = −7; $w(-7)$: x = −7, y = 9)

A. -7 B. 2 C. 9 D. -63

x	y
9	-7
-7	9