April 11th

Due Today: -

Due Next: 11.1

Unit 11: Function Operations

Lesson 11.1: Families of Functions

Red:Jayvin, Joana, Boris, Tiffany Re

Orange:Francesco,Ian, Elsa, Kai Or

Yellow:Adam L, Anahi,Theo, Jasmin, Ye

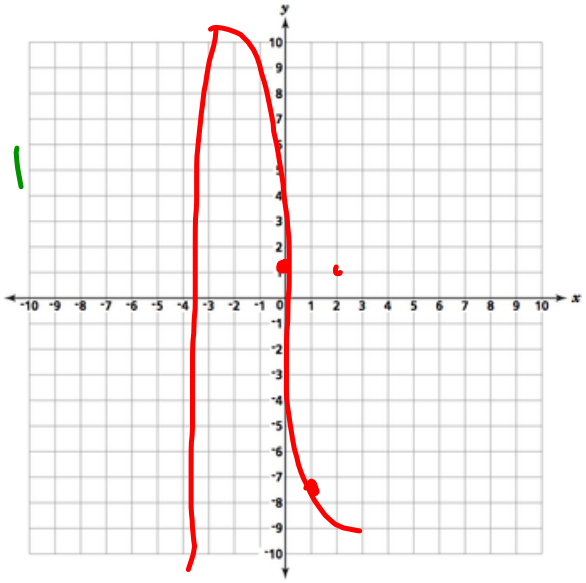
Green:Tony, Ismael, Lucas, Gr

Blue: Quinn, Luke, David, Adam H Bl

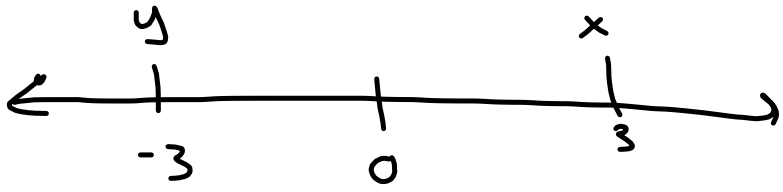
Purple:Miles,John, Ben, Malsor Pu

You can graph ANY FUNCTION by entering the equation into y= in the calculator and using the table to find the points!

$f(x) = 3x^7 - 12x^5 + \frac{1}{8}x^2 + 1$



$g(x) = |x|$

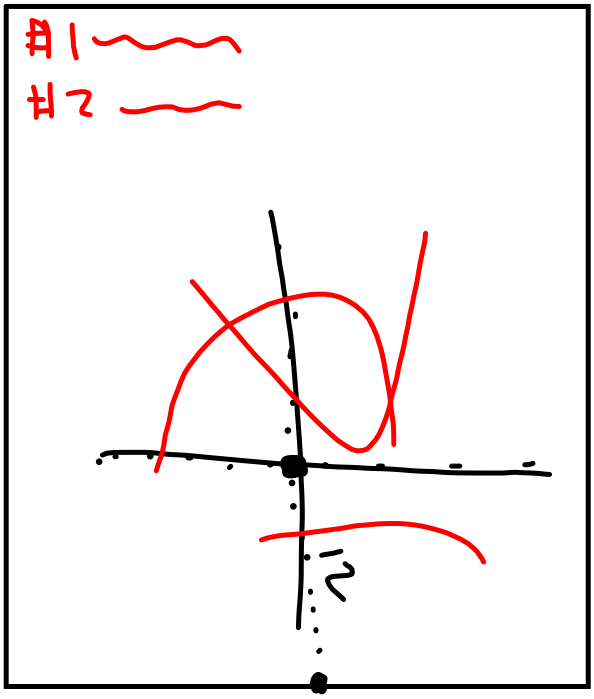


$|x| = 3$

$|y| = 3$

Each Table Needs:

- 1 piece of Chart Paper
- 1 Ruler
- **Markers:** Black/Brown, Pink, Red, Orange, Yellow,Green, Blue, Purple



GRAPHAPALOOZA

-Draw a grid BIG on your paper in Brown/Black

-Graph all 7 functions on your 1/2 sheet.

#1 = Pink

#2 = Red

3 = Orange

#4 = Yellow

#5 = Green

#6 = Blue

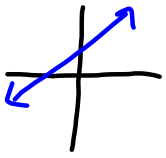
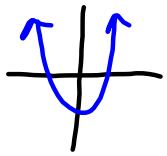
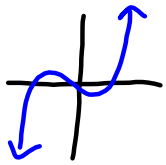
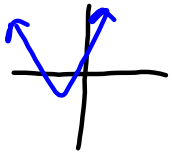
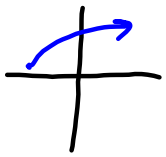
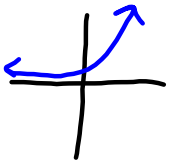
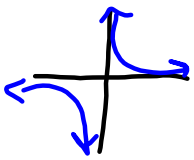
7 = Purple

- DO NOT WRITE ON THE HALF SHEET

- After you graph all 7 answer the following:

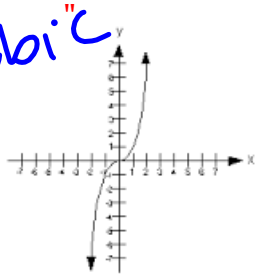
- what are some similarities and differences between the graphs?

FAMILIES OF FUNCTIONS

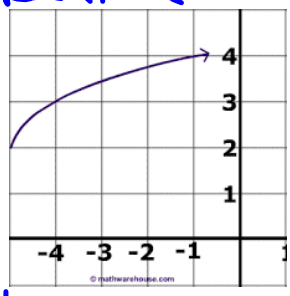
Type	Basic Equation	Graph
Linear	$f(x) = x$	
Quadratic	$f(x) = x^2$	
Cubic	$f(x) = x^3$	
Absolute Value	$f(x) = \lvert x \rvert$	
Radical	$f(x) = \sqrt{x}$	
Exponential	$f(x) = 2^x$	
Rational	$f(x) = \frac{1}{x}$	

Identify the family from the graph or equation:

Cubic



Radical



Linear

$y = -8x + 3$

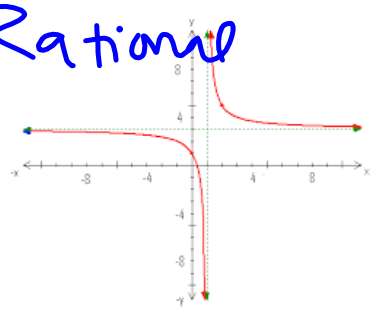
Quad

$f(x) = (x+4)^2 - 3$

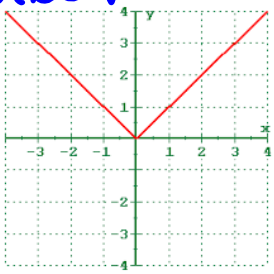
abs. val

$y = -|x| + 1$

Rational



abs. val.



Radical

$y = -3 + \sqrt{x+2}$

What makes a FUNCTION a function?!

EACH X-VALUE HAS ONLY ONE Y-VALUE

X	Y
1	2
2	3
3	4
4	5

Function ✓

X	Y
1	2
2	3
1	4
3	5

Relation

Which option represents a function?

1) $\{(0,3),(2,4),(0,6)\}$

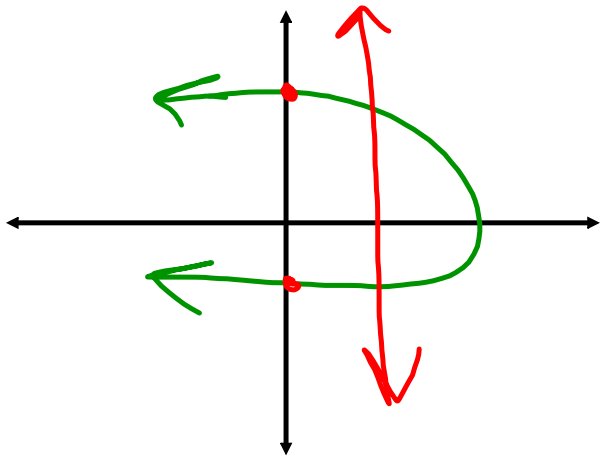
2) $\{(-7,5),(-7,1),(-10,3),(-4,3)\}$

3) $\{(2,0),(6,2),(6,-2)\}$

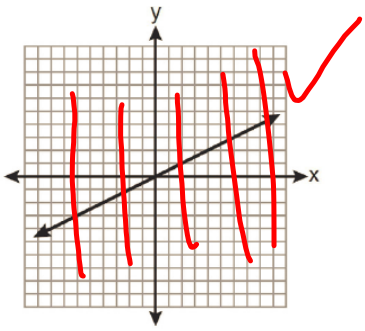
4) $\{(-6,5),(-3,2),(1,2),(6,5)\}$

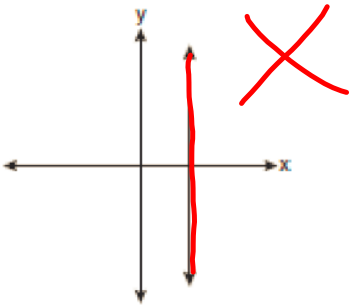
If it is not a function- it is a RELATION

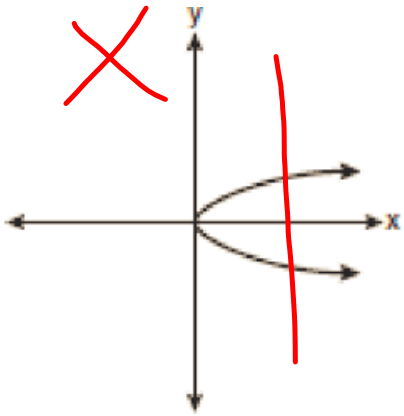
What would a RELATION look like if we graphed it?

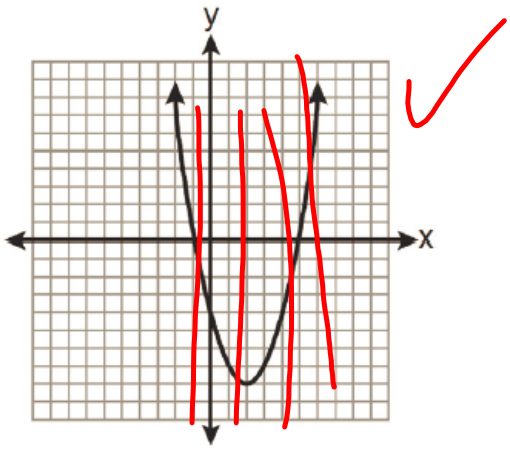


Vertical Line Test: Checks to see if a graph is a function.









How to test if something is a function:

VLT test:

X -> Y test:

Unit 11: Function Operations

Lesson #	Name	Recap	HW
11.1	Families of Functions		HW 11.1