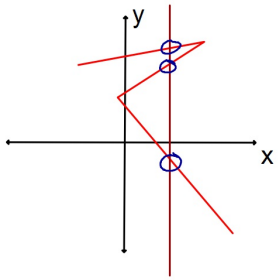
Is each of these a function?

X	Y
1	5
2	6
3	-2
4	5

Yes

No x values repeat.



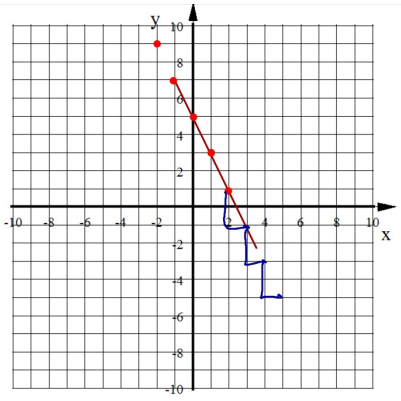
NO

These 3 pts have the same x-value.

Function: A relation in which each domain is paired with one and only one range.
No domain value repeats.

A.

X	Y
−2	9
−1	7
0	5
1	3
2	1



Equation:

y = -2x+5

Function Name:

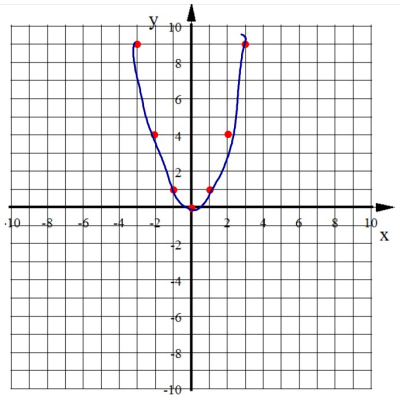
Linear which is also a member of the Polynomial family.

3 other points on the graph:

X	Y
3	-1
4	-3
5	-5

B.

X	Y
−3	9
−2	4
−1	1
0	0
1	1
2	4
3	9



Equation:

$y = x^2$

Function Name:

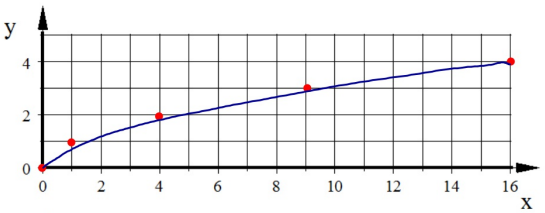
Quadratic which is also a member of the Polynomial family.

3 other points on the graph:

x	y
4	16
5	25
6	36

C.

X	Y
0	0
1	1
4	2
9	3
16	4



Equation:

$y = \sqrt{x}$

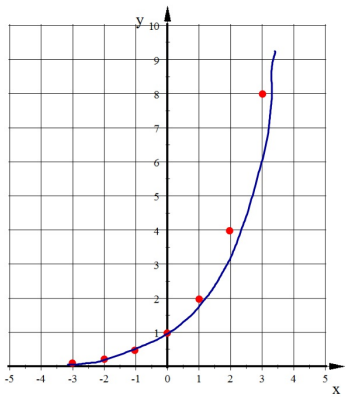
Function Name: Square Root which is a member fo the Radical Function family.

3 other points on the graph:

x	y
25	5
36	6
49	7

D.

X	Y
−3	0.125
−2	0.25
−1	0.5
0	1
1	2
2	4
3	8



Equation:

$y = 2^x$

Function Name:

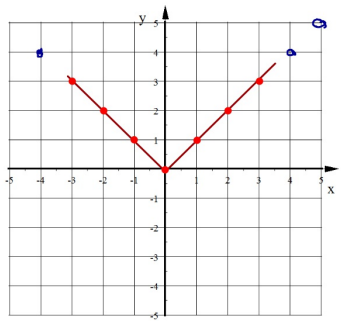
Exponential Growth

3 other points on the graph:

x	Y
4	16
5	32
6	64

E.

X	Y
−3	3
−2	2
−1	1
0	0
1	1
2	2
3	3



Equation:

$y = |x|$

Function Name:

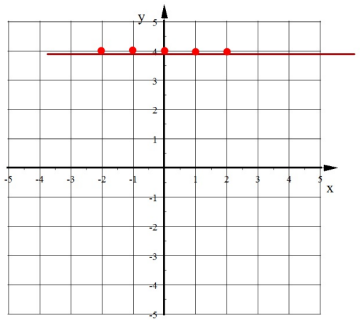
Absolute Value

3 other points on the graph:

X	Y
−4	4
4	4
5	5

F.

X	Y
−2	4
−1	4
0	4
1	4
2	4



Equation:

$y = 4$

Function Name:

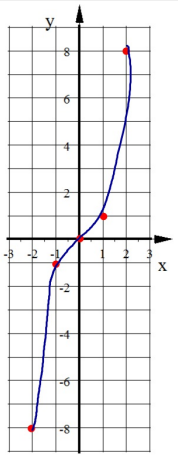
Constant which is type of Linear Function and, therefore, a Polynomial

3 other points on the graph:

X	y
3	4
4	4
5	4

G.

X	Y
−2	−8
−1	−1
0	0
1	1
2	8



Equation:

$y = x^3$

Function Name:

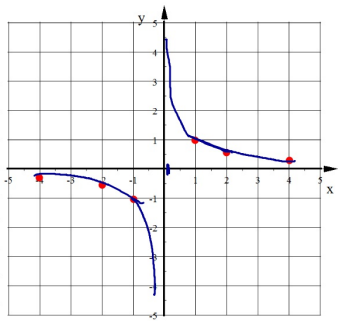
Cubic → which is also a member of the Polynomial family.

3 other points on the graph:

X	Y
3	27
4	64
5	125

H.

X	Y
−4	−0.25
−2	−0.5
−1	−1
0	□
1	1
2	0.5
4	0.25



Equation: $y = \frac{1}{x}$

Function Name:

Reciprocal Function Rational

3 other points on the graph:

X	Y
5	$\frac{1}{5} = .20$
6	$\frac{1}{6} = .17$
7	$\frac{1}{7} = .14$

Compound Inequality:

Two inequalities connected with one of the following words:

OR AND

Inclusive "OR"

A statement using the word OR is true if one of the parts is true, if the other part is true, or if both parts are true.

Ex:
For dinner I'm going to have pasta or shrimp.

This statement will be true if I have only pasta, only shrimp, or both pasta and shrimp.

Exclusive "OR"

The statement is true only if ONE part is true.

In other words, one part must be true and the other part must be false.

Ex:
The solution to the equation is Positive or it's Negative.

This statement is true if either the solution is Positive or if it is Negative. It can't be both!

2. Solve this compound inequality. Graph the solution set on a number line.

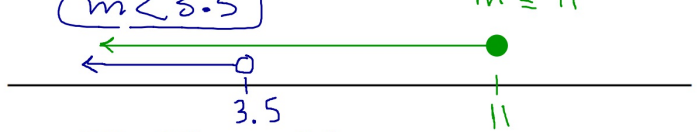
$8m + 4 < 32$ or $29 - 2m \geq 7$

$-4 \quad -4 \qquad -29 \quad -29$

$\frac{8m}{8} < \frac{28}{8} \qquad \frac{-2m}{-2} \geq \frac{-22}{-2}$

$m < 3.5 \qquad m \leq 11$

This "OR" is the inclusive or.



Sol: $m \leq 11$ → #'s THAT MAKE ONE or BOTH INEQUALITIES TRUE

If the compound inequality used the word "and" instead, the final solution would be m<3.5 because that is the only set of values that make BOTH of the inequalities true (where graphs overlap)

3. Solve this system of linear equations. Give your answer as an ordered pair.

$4G + H = -1$

$6G - 5H = -47$

$Sol:$ (-2,7)

Methods for solving a system of linear equations:

1. Elimination
2. Substitution
3. Graphing

To use Elimination you could multiply the top equation by 5: 5(4G + H= -1) to get: 20G + 5H = -5

20G + 5H = -5
\+ 6G - 5H = -47
26G = -52

Add this new equation with the second equation to eliminate H:

G = -2

Now you have to substitute -2 for G in any of the equations and solve for H. You'll find H = 7

To use substitution you could solve the top equation for H:
H = -1 - 4G
then subsitute into the second eq:
6G -5(-1- 4G) = -47
6G + 5 + 20G = -47
26G + 5 = -47
26G = -52
G = -2
Now you have to substitute -2 for G in any of the equations and solve for H.

The answer written as an ordered pair will be (G,H).