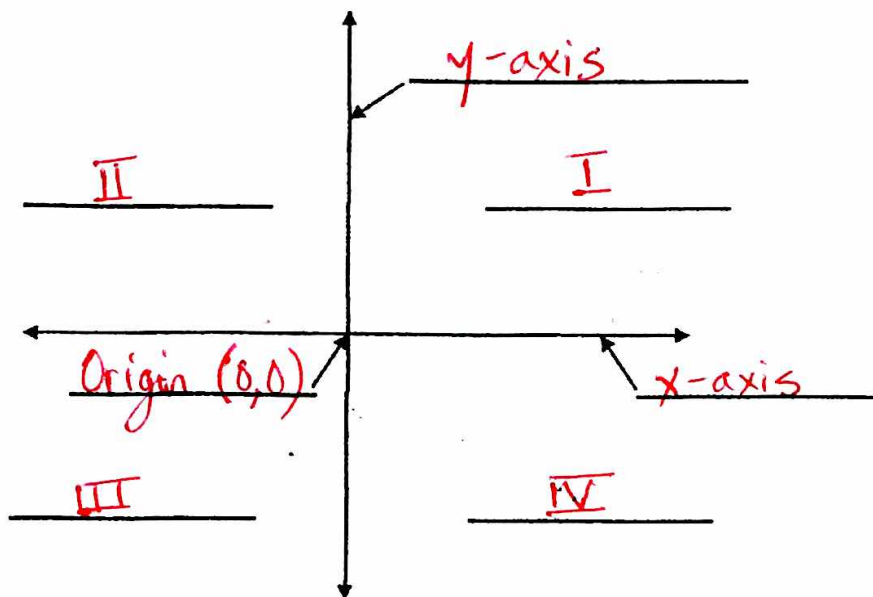


Notes

The Coordinate Plane



Write the ordered pairs for each point. Name the quadrant in which each point is located.

A $(6, 5)$, I

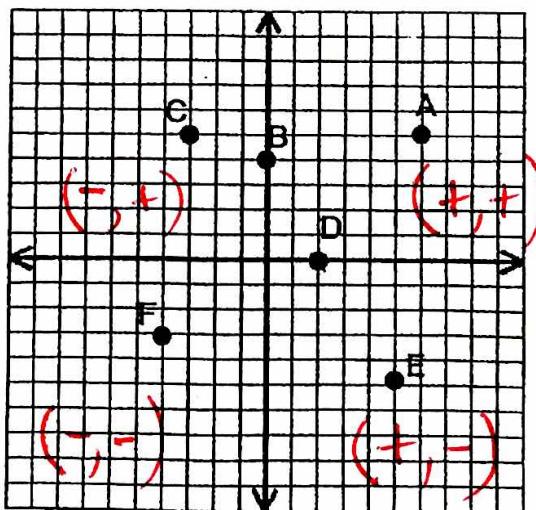
B $(0, 4)$, y-axis

C $(-3, 5)$, II

D $(2, 0)$, x-axis

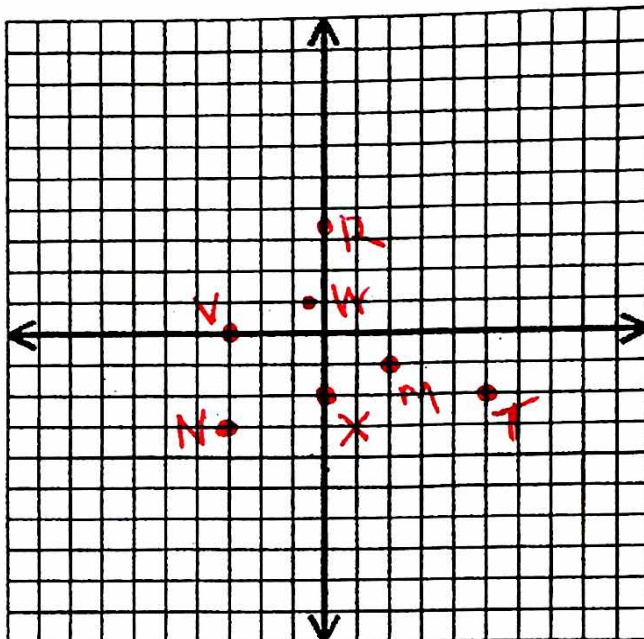
E $(5, -5)$, IV

F $(-4, -3)$, III



Plot the following points.

- M(2, -1)
- N(-3, -3)
- R(0, 3.5)
- T(5, -2)
- V(-3, 0)
- W(-1/2, 1)
- X(0, -2)



Given the following x-values, find the corresponding y-values. ~~Then graph the function.~~

$$y = 2x + 3 \quad x = -5, -4, -1, 0, 1, 3$$

x	$y = 2x + 3$	y
-5	$y = 2(-5) + 3$	-7
-4	$y = 2(-4) + 3$	-5
-1	$y = 2(-1) + 3$	1
0	$y = 2(0) + 3$	3
1	$y = 2(1) + 3$	5
3	$y = 2(3) + 3$	9

x	y
-5	-7
-4	-5
-1	1
0	3
1	5
3	9

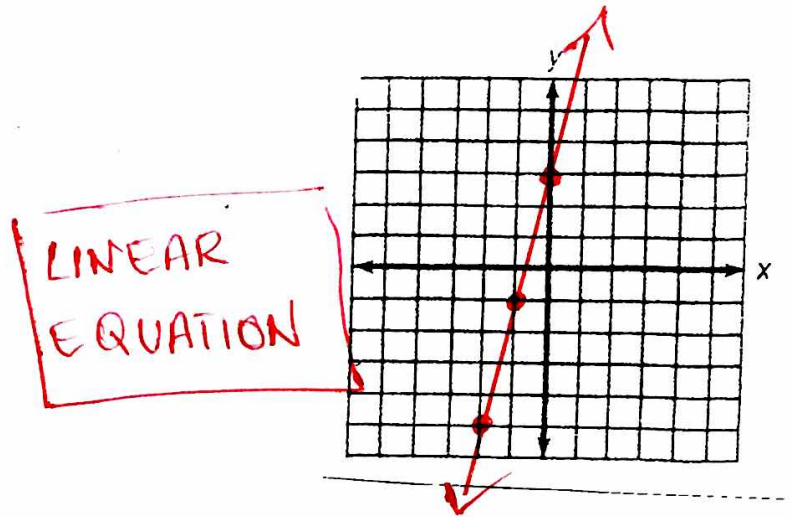
Linear or NOT?

How to tell if something is linear or not:

1. Graph the equation by generating (to make) ordered pairs and see if the graph is a straight line or not.

Ex. $y = 4x + 3$

x	$y = 4x + 3$	y
-2	$y = 4(-2) + 3$	-5
-1	$y = 4(-1) + 3$	-1
0	$y = 4(0) + 3$	3
1	$y = 4(1) + 3$	7
2	$y = 4(2) + 3$	11
3	$y = 4(3) + 3$	15



2. Check the form of the equation:

Forms of linear equations are:

a. $y = 3x + 2$ or $y = 2x - 6$ or $y = 5 - 4x$

b. $3x + 2y = 6$ or $2y - 3x = 6$

3. Eliminate by what a linear function DOES NOT HAVE:

- Anything that has an exponent with the variable

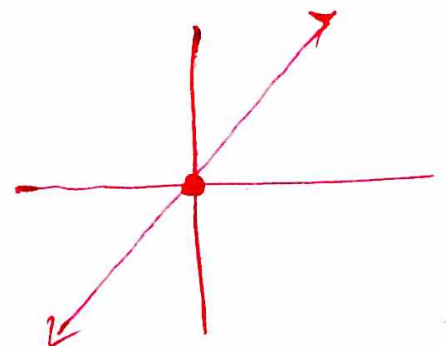
* Linear Parent Function:

Ex: $y = x^2 - 1$ Not Linear

$y = (x-1)^2 - 3$ Not Linear

$y = x$

This is the simplest form of a linear equation!!!



Real world Application Problem:

You have to rent a DJ for your birthday party. The DJ costs \$25 per hour plus a one-time set up fee of \$100 for each job.

1. Identify your variables:

$$x = \# \text{ of hours} \quad y = \text{cost}$$

2. Write an equation to represent the total cost of the DJ after x hours.

$$y = 100 + 25x$$

3. (a) How much would it cost for the DJ to only be at your party for 1 hour?

\$125

- (b) How much would it cost for the DJ to be at your party for 2 hours?

\$150

- (c) How much would it cost for the DJ to be at your party for 3 hours?

\$175

- (d) How much would it cost to rent the DJ for 10 hours?

\$350

4. Make a table:

x	$y = 100 + 25x$	y
1	$y = 100 + 25(1)$	125
2	$y = 100 + 25(2)$	150
3	$y = 100 + 25(3)$	175
4	$y = 100 + 25(4)$	200
5	$y = 100 + 25(5)$	225
6	$y = 100 + 25(6)$	250
10	$y = 100 + 25(10)$	350

5. Graph your data:

