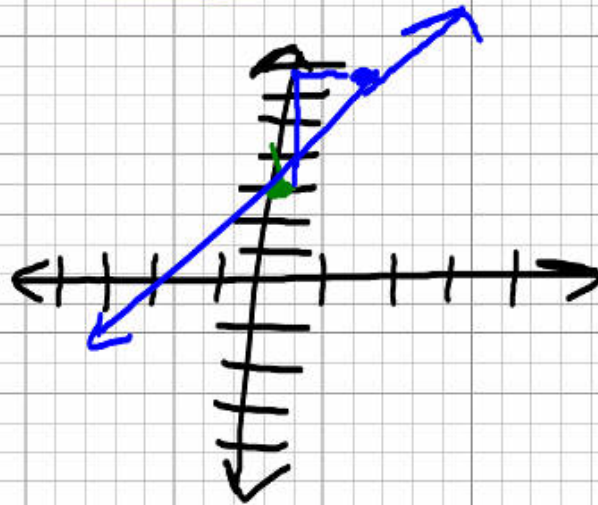


3.2 the graph of $y = mx + b$

$$y = 4x + 3$$
$$y = mx + b$$

slope;
rate

y int;
starting
pt;
start w/



$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{4}{1}$$

Theorem 1: if 2 lines have the same slope, they are parallel. (//)
(never cross)

$$y = \underline{4}x + 3$$

//?

$$y = \underline{4}x + 2$$

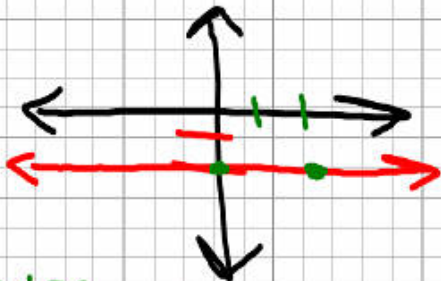
$$y = \underline{4}x + 5$$

Theorem: if 2 lines are //, they have same slope.

horizontal
line

- $y = \#$
 $y = -2$

- slope: 0

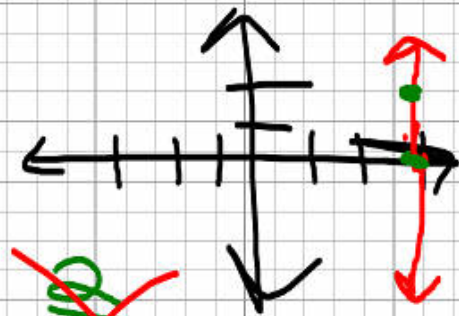


$\frac{\text{rise}}{\text{run}} = \frac{0}{2}$

Vertical
line

- $x = \#$
 $x = 3$

- slope: undefined



~~$\frac{0}{0}$~~

3.3 Linear Combination Situations

ex June has P 20¢ stamps for postcards and L 32¢ stamps for letters. Find the total value of her stamps.

$$\underline{20P + 32L}$$

Linear comb.

- 1) all exponents must be 1.
- 2) Variables cannot be multiplied or divided by each other.

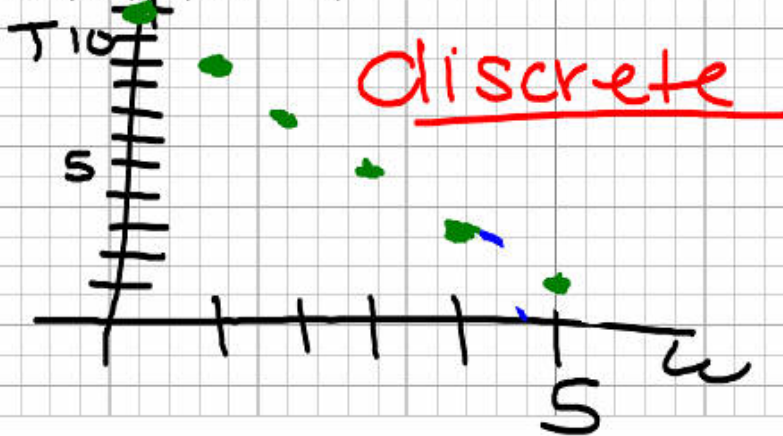
ex In the NHL, a win is worth 2 pts, a tie 1 pt & a loss 0 pts. Early in the season, a team has 11 pts.

a) Write an equation (use W, L, T)

$2W + 1T + 0L = 11$

b) make T chart & graph of all possibilities.

W	T
0	11
1	9
2	7
3	5
4	3
5	1



ex A chemist mixes x ounces of a 20% acid sol. w/ y ounces of a 30% acid solution. The final mixture contains 9 oz of acid.

a) Write equation.

$$.2x + .3y = 9$$

b) How many ozs of the 30% acid sol. will I need to mix w/ 2.7 oz of the 20% acid sol. to have 9 oz of acid in final mixture?

$$\bullet 2(2.7) + .3y = 9$$

$$\begin{array}{r} \bullet 54 + .3y = 9 \\ - \cancel{54} \qquad - .54 \\ \hline \end{array}$$

$$\begin{array}{r} \bullet \cancel{3}y = 8.46 \\ \cancel{3} \qquad \qquad .3 \end{array}$$

$$y = 28.2$$

...