

# Section 1.1

\* Lines: ① Slope/Intercept:  $y = mx + b$   
slope  $m$   $y$ -int  $b$

To Graph: ① Plot the  $y$ -int  
 ② Use the slope from that point

\*\* ② Point/Slope:  $y - y_1 = m(x - x_1)$   
slope  $m$  point:  $(x_1, y_1)$

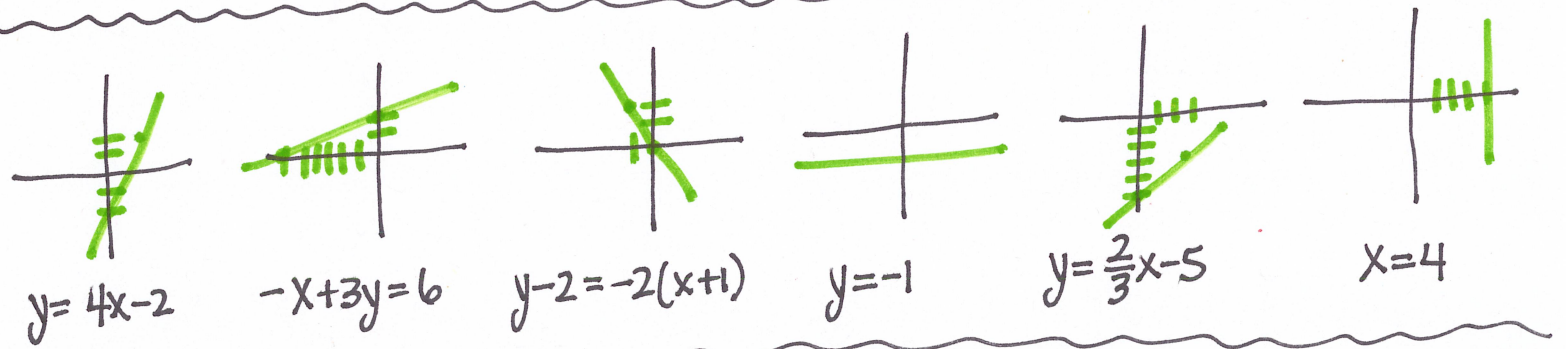
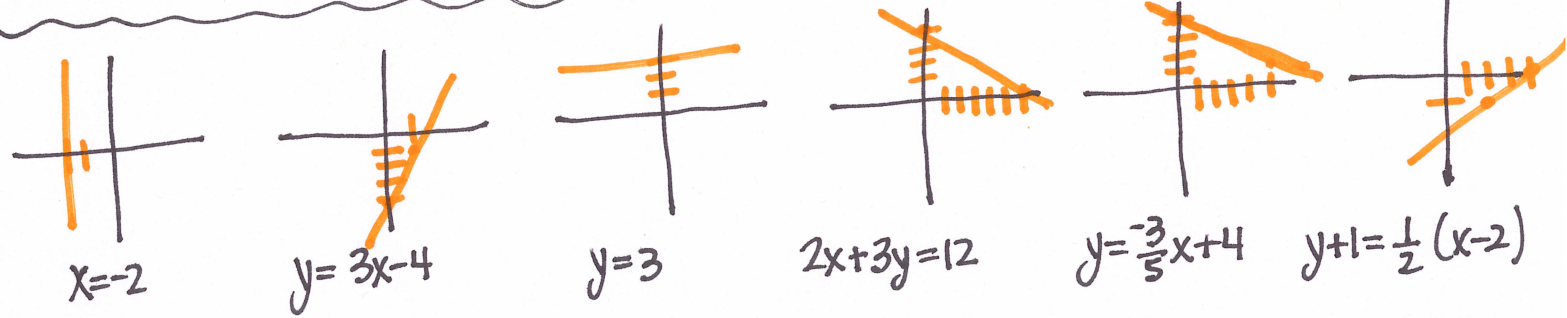
To Graph: ① Plot the point  
 ② Use the slope

③ Standard Form:  $Ax + By = C$   
 (General)  
↳ "A" must be (+)  
 slope =  $-\frac{A}{B}$

To Graph: solve for  $x$  &  $y$ -intercept  
 ① set  $x=0$  & solve for  $y$   
 ② set  $y=0$  & solve for  $x$   
 "HAND METHOD"

④ Vertical Line:  $x = \#$

⑤ Horizontal Line:  $y = \#$



\* Perpendicular Lines: the slope are negative reciprocals  
 (Normal)

ex:  $m = \frac{1}{3}$   $\perp m = -3$   
 $m = -2$   $\perp m = \frac{1}{2}$

\* Parallel Lines: same slope

- \* y-intercept: ① set  $x=0$   
 ② solve for y.

\* Linear Regression: making a "BEST FIT" line for linear data.

ex: pg 10 #46

① Input the data: **STAT**, **EDIT** → enter the data in  $L_1, L_2$ .

② Set up the plot: **STAT PLOT**, #1: PLOT1: Turn on Plot 1 (highlight it)  
 2<sup>nd</sup>,  $y=$  X-List:  $L_1$   
 Y-List:  $L_2$

③ Window: **ZOOM**, **ZOOM STAT**  
 #9

④ Make a Regression line: **STAT**, **CALC**, **LIN REG1** → #4

X-List:  $L_1$   
 Y-List:  $L_2$   
 Freq List: \_\_\_\_\_  
 Store Reg Eq:  $Y_1$

To get to  $Y_1$

① **VAR**

② scroll over to **Y-VARS**

③ **FUNCTION**

④  **$Y_1$**

⑤ Graph it:  $y = 0.680x + 9.0125$

\* Regression Equations are used to predict data.  
 BUT... you must ZOOM OUT!