

Chapter 5

FORMS OF LINEAR EQUATIONS

- ① SLOPE INTERCEPT $y = mx + b$
- ② POINT SLOPE $y - y_1 = m(x - x_1)$
- ③ STANDARD $Ax + By = C$ A, B, C must be integers

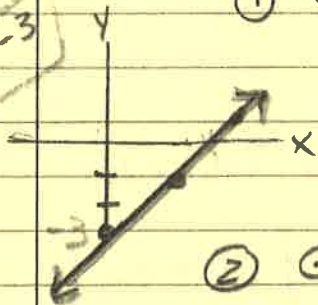
FIND SLOPE

- ① GIVEN GRAPH $m = \frac{\text{RISE}}{\text{RUN}}$
- ② GIVEN 2 POINTS $m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

GRAPHING

- ① Graph when given $y = mx + b$

$$y = \frac{2}{3}x - 3$$



* plot YINT (b)

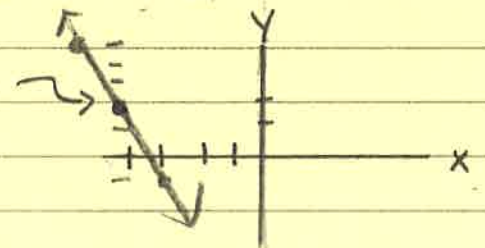
* Use $m = \frac{\text{RISE}}{\text{RUN}}$ to find additional points

- ② Graph using $y - y_1 = m(x - x_1)$

Example $y - 2 = -3(x + 4)$

* Find the point $(-4, 2)$

* Use $m = \frac{\text{RISE}}{\text{RUN}} = \frac{-3}{1}$

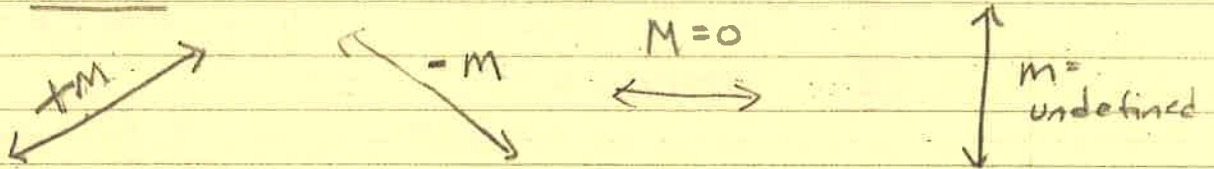


Parallel lines (//) have the same slope

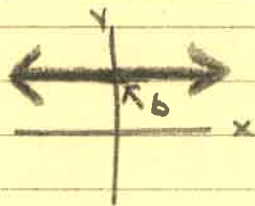
Perpendicular lines (⊥) have negative reciprocal slopes

EX) $m = 2/3 \rightarrow \perp m = -3/2$

SLOPE:



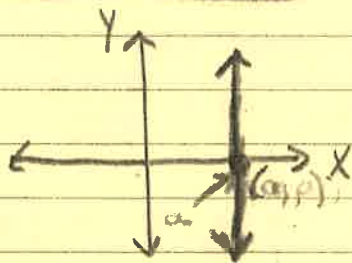
Horizontal Lines:



$y \text{ int } (0, b)$
 $m = \text{Zero}$

EQ: $|y = b|$

VERTICAL LINES



$y \text{ int: None}$
 $m = \text{undefined}$

$x \text{ int } (a, 0)$

EQ: $|x = a|$