STUDY TIPS

4 CHAPTER REVIEW

NAME: Locations are Q1-Q4, axis, yaxis, + origin P: D:

4.1 Plot Points in a Coordinate Plane

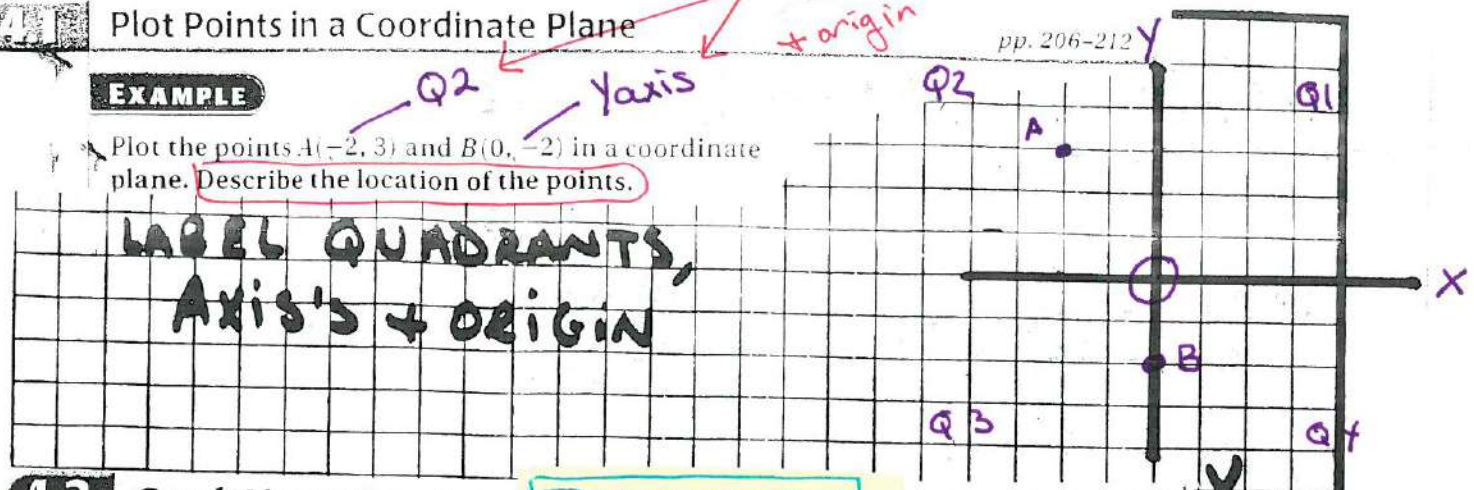
pp. 206–212

EXAMPLE

Plot the points $A(-2, 3)$ and $B(0, -2)$ in a coordinate plane. Describe the location of the points.

Q2 Yaxis

LABEL QUADRANTS, AXIS'S + ORIGIN



4.2 Graph Linear Equations

TABLE METHOD

pp. 215–221

EXAMPLE

Graph the equation $y + 3x = 1$. USE A TABLE!

DOMAIN: $x \geq -1$

x	-1	0	1	what is range?
y	4	1	-2	R: $y \leq 4$

(-1, 4)

① PUT INTO $y = mx + b$

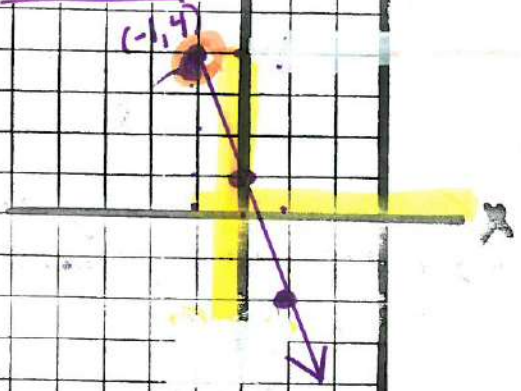
$y + 3x = 1$

$-3x \quad -3x$

$y = -3x + 1$

② Create a table with $x \geq -1$

③ Graph



4.3 Graph Using Intercepts

INTERCEPT METHOD

EXAMPLE

Graph the equation $2x - 8y = -16$

set

X INT: $(y = 0)$

$2x = -16$

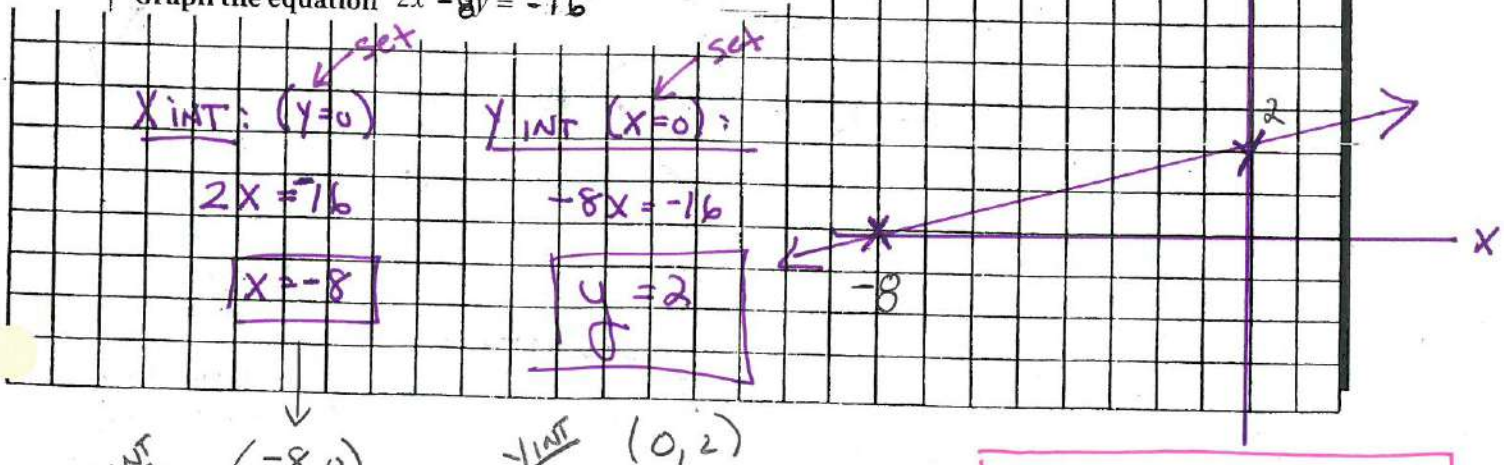
$x = -8$

set

Y INT $(x = 0)$:

$-8y = -16$

$y = 2$



XINT $(-8, 0)$ $x = -8$

YINT $(0, 2)$ $y = 2$ $b = 2$

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4.4 Find Slope and Rate of Change

pp. 235–242

$M = \frac{\text{RISE}}{\text{RUN}}$

EXAMPLE Given 2 pts: $M = \frac{y_2 - y_1}{x_2 - x_1}$ Given Graph:

Find the slope of the line shown.

1. Let $(x_1, y_1) = (2, -3)$ and $(x_2, y_2) = (4, -4)$. $M = \frac{\Delta Y}{\Delta X}$

$M = \frac{-3 - -4}{2 - 4} = \frac{1}{-2}$ $M = -1/2$

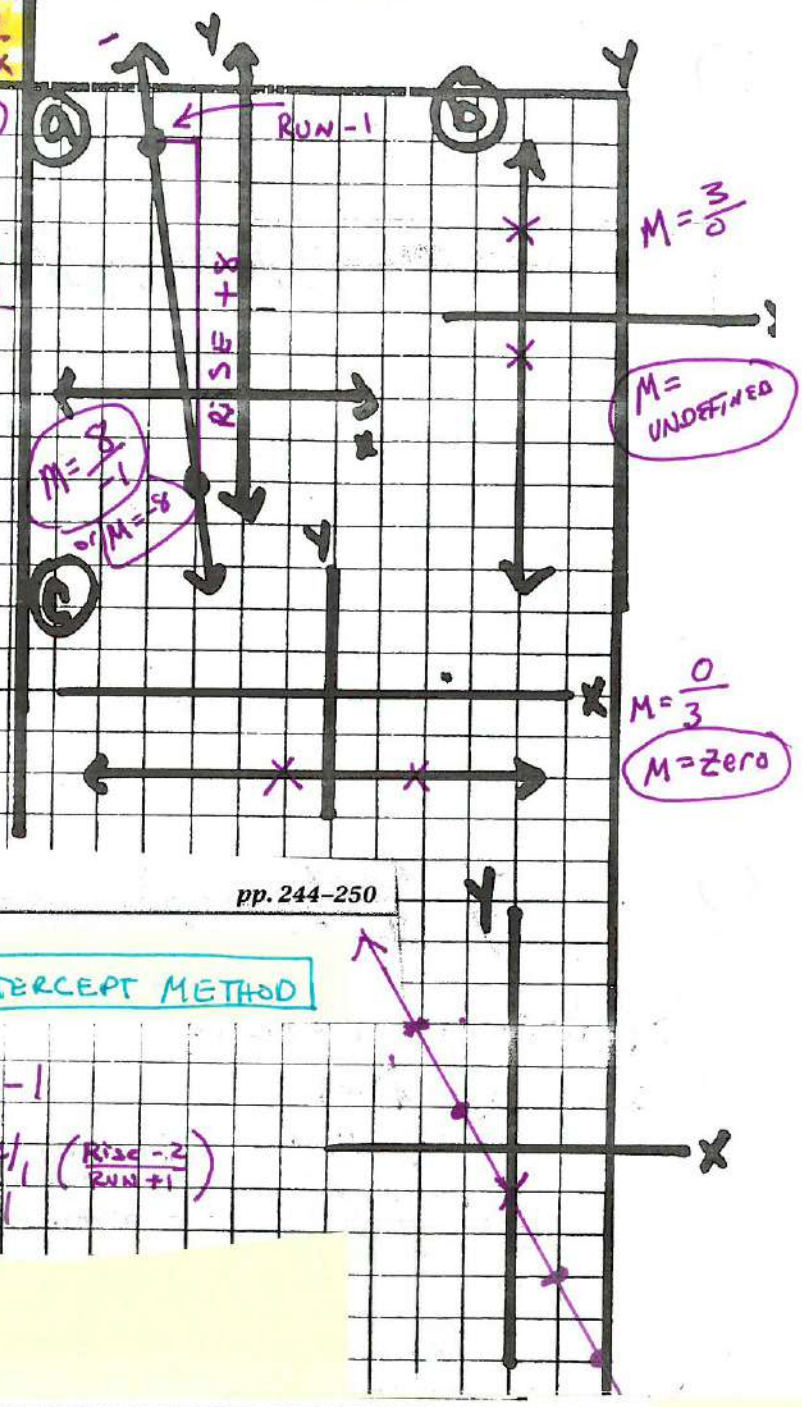
2. $(-5, 5)$ $(5, 5)$

$M = \frac{5-5}{-5-5} = \frac{0}{-10}$ M = ZERO

3. $(-3, -2)$, $(-3, 4)$

$M = \frac{\Delta Y}{\Delta X} = \frac{-2 - 4}{-3 - -3} = \frac{-6}{0}$

M = UNDEFINED



4.5 Graph Using Slope-Intercept Form

pp. 244–250

EXAMPLE

Graph the equation $2x + y = -1$.

SLOPE-INTERCEPT METHOD

1. PUT INTO $y = mx + b$ (slope, y-int) $y = -2x - 1$
2. PLOT Y-INT
3. USE RISE/RUN $M = -2/1$ $\left(\frac{\text{Rise}}{\text{Run}} = \frac{-2}{+1}\right)$ $B = -1$

Check for solutions:

Determine if the Given points are solutions to $2x + y = 4$. Show work.

(a) (2,2)

$2(2) + 2 = 4$

$6 \neq 4$

(2,2) IS NOT A SOLUTION

(b) (1,2)

$2(1) + 2 = 4$

$4 = 4$ ✓

(1,2) IS A SOLUTION

MORE REVIEW

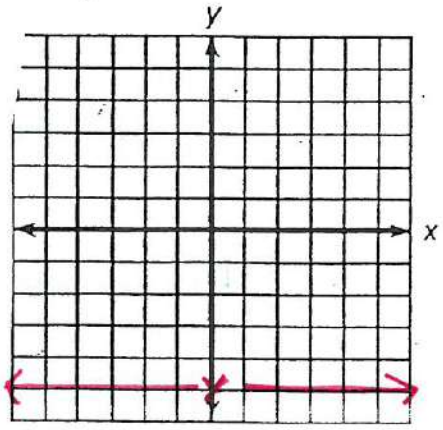
GRAPH THE EQUATIONS. GIVE THE SLOPE AND Y INTERCEPT

① $y = -5$

$\Downarrow$

$y = 0x - 5$ — $m = 0$, $b = -5$

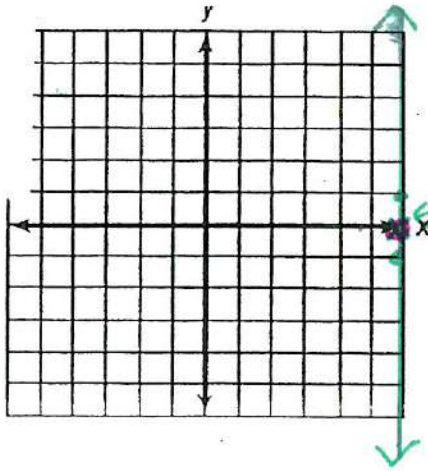
x	y
-1	-5
0	-5
1	-5



$y = b$ is always a horizontal line

② $x = 6$

x	y
6	-1
6	0
6	1



$x = a$ is always a vertical line

x intercept

m = undefined

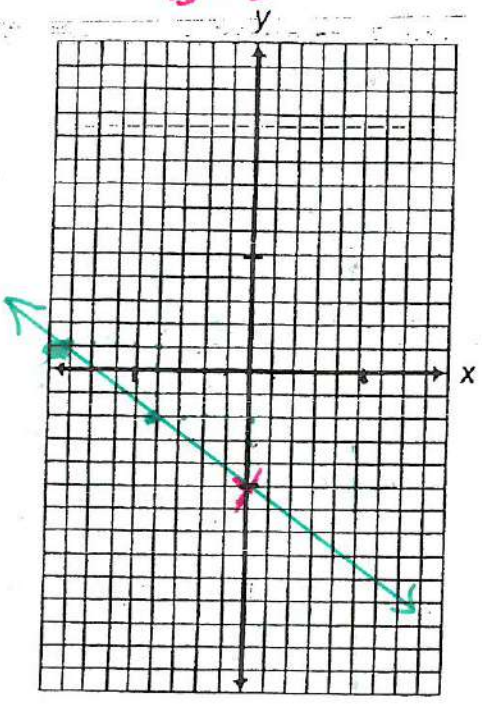
b = none

GRAPH USING SLOPE AND Y INTERCEPT. STATE M + B.

⑤ $y = -\frac{3}{4}x - 5$

$M = -3/4$

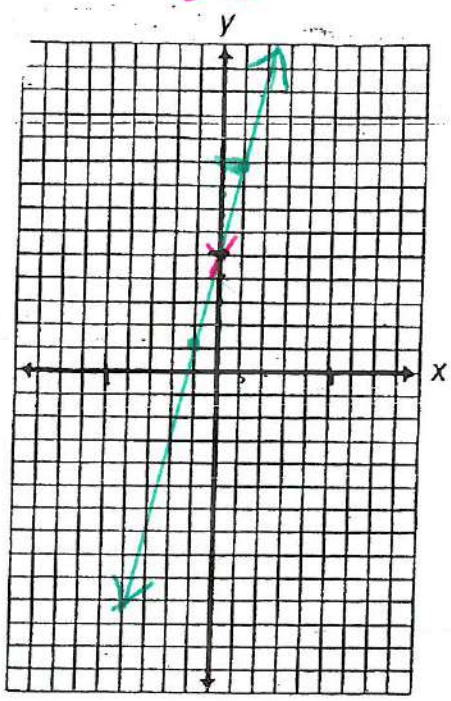
$B = -5$



⑥ $y = 4x + 5$

$M = 4$

$B = 5$



⑦ $4x - 3y = -12$

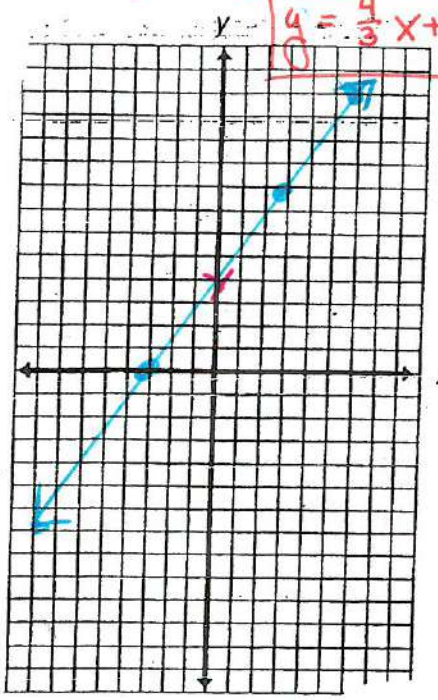
$-4x \quad -4x$

$\frac{-3y}{-3} = \frac{-4x}{-3} \quad \frac{-12}{-3}$

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

$M = \frac{4}{3}$

$b = 4$



⑧ **SWIMMING POOLS** A public ~~swimming pool~~ that holds 45,000 gallons of water is going to be drained for maintenance at a rate of 100 gallons per minute. The amount of water w (in gallons) in the pool after t minutes is given by the function $w = 45{,}000 - 100t$. Graph the function. Identify its domain and range. [How much water is in the pool after 60 minutes?] [How many minutes will it take to empty the pool?]

KI: $w = 45{,}000 - 100T$

pool holds 45000 gal water

w = water (gal)

t = time (min)

Rewrite EQ with X and Y

$Y = 45{,}000 - 100X$

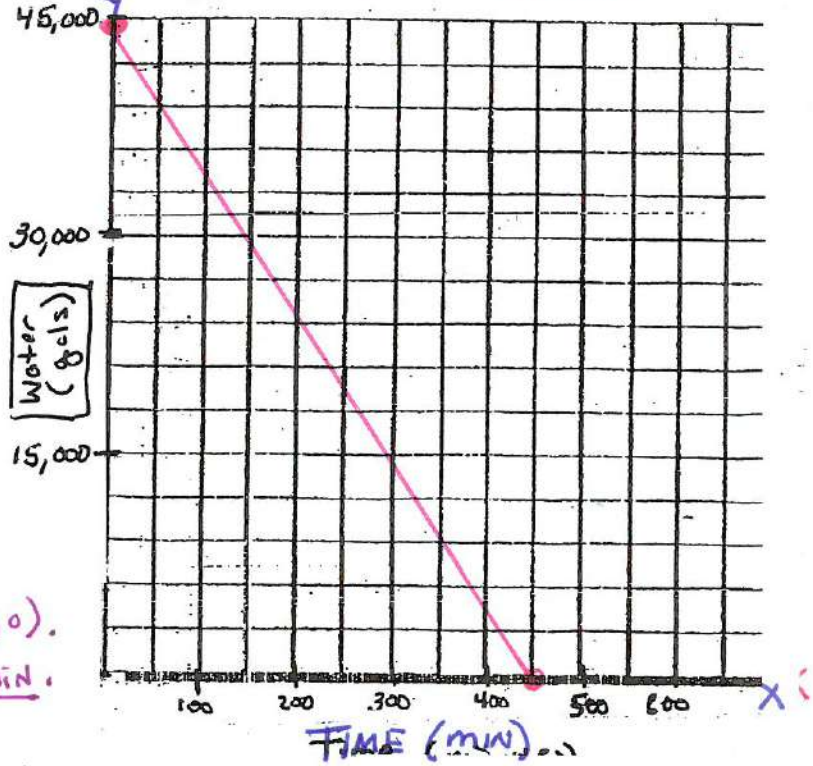
Graph ① USING S/I OR

② INTERCEPTS

$100X + Y = 45{,}000$

X: 450

Y: 45,000



Q1 $w = 45000 - 100(60 \text{ min})$

$w = 39{,}000$ gals of water

Q2 Since the x intercept is (450, 0).

The pool is empty after 450 min.