Algebra 1B - Chapter 4

Sept. 2024

Week Sept 23-27 Lesson Overview

Monday - **Review** last Friday assignment that was online #6-8, 16-18 on writing equations of lines parallel and perpendicular to given line through a given point.

Tuesday - **TEST** on paper covering objectives in sections 1-3 of Chapter 4

Wednesday - Section 4 of Chapter 4 on objective of scatterplots

using the Explore It 4.4 off Dynamic Classroom.

Use the graphing calculator to show how to enter points in the STATS-EDIT and STATPLOT to see the graph.

Thursday - Continue practice of describing scatterplots

with pg. 67 of Black Practice Book and

handout from Resource pg 164-166

Friday - Use Dynamic Classroom 4.4 Section: Self Assessment sections for each example.

Objectives/Learning Target for Week for TUESDAY TEST

Anchor Descriptor - A1.2.1.2 Interpret and/or use linear functions and their equations, graphs or tables.

Eligible Content - A1.2.1.2.1 Create, interpret and/or use the equation, graph or table of a linear function.

Section 4.1: Writing Equations in Slope-Intercept Form

Common Core State Standards: A.CED.A.2, F.BF.A.1a, F.LE.A.1b, F.LE.A.2
Learning Target: Write equations of lines in slope-intercept form.
Success Criteria

- Find the slope and the y-intercept of a line.
- Use the slope and the y-intercept to write an equation of a line.
- Write equations in slope-intercept form to solve real-life problems.

Section 4.2: Writing Equations in Point-Slope Form

Common Core State Standards: A.CED.A.2, F.BF.A.1a, F.LE.A.1b, F.LE.A.2
Learning Target: Write equations of lines in point-slope form.
Success Criteria

- Use a point on a line and the slope to write an equation of the line.
- Use any two points to write an equation of a line.
- Write a linear function using any two function values.

Section 4.3: Writing Equations of Parallel and Perpendicular Lines

Common Core State Standards: A.CED.A.2, F.LE.A.2
earning Target: Recognize and write equations of parallel and erpendicular lines.
uccess Criteria

- Identify parallel and perpendicular lines from their equations.
- Write equations of parallel lines.
- Write equations of perpendicular lines.

Objectives/Learning Target for Week Sept 25-27

Anchor Descriptor - A1.2.1.2 Interpret and/or use linear functions and their equations, graphs or tables.

Eligible Content - A1.2.1.2.1 Create, interpret and/or use the equation, graph or table of a linear function.

Section 4.4: Scatter Plots and Lines of Fit

Common Core State Standards: S.ID.B.6a, S.ID.B.6c, S.ID.C.7, F.LE.B.5
Learning Target: Use scatter plots and lines of fit to describe relationships between data.
Success Criteria

- Read and interpret scatter plots.
- Identify correlations between data.
- Write and interpret an equation of a line of fit.

Vocabulary: scatter plot, correlation, line of fit

Learning Target

Use scatter plots and lines of fit to describe relationships between data.

Success Criteria

- I can read and interpret scatter plots.
- I can identify correlations between data.
- I can write and interpret an equation of a line of fit.

Update: 9/20

Started with Chapter 4 - WRITING linear equations

This is Algebra KEYSTONE Module 2 - Geometry standard as coordinates

Section 1 - Slope Intercept Form

Section 2 - Point Slope Form

Section 3 - Parallel or Perpendicular line writing (or just intersects)

---This is where new material picks up.

---Use FORMULA SHEET from Keystone for properties and formula steps

Classroom BOARD notes

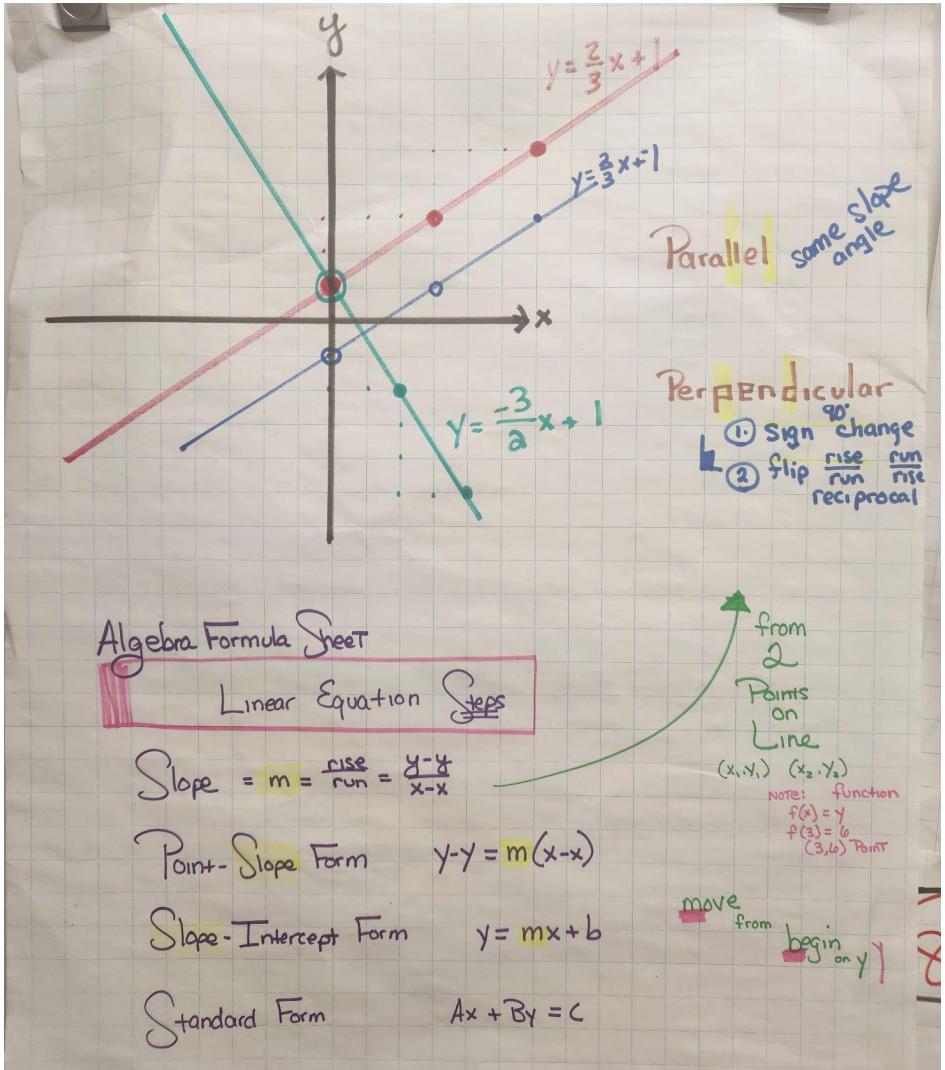
Use formulas to guide steps

SHOW your work

Perpendicular slope needs 2:

1 - change sign

2 - flip fraction



Week Review Sept. 20th Friday

Friday - Online 4.3 # 6-8, 16-18

Mrs. Pletcher observes students-- some students need reassurance

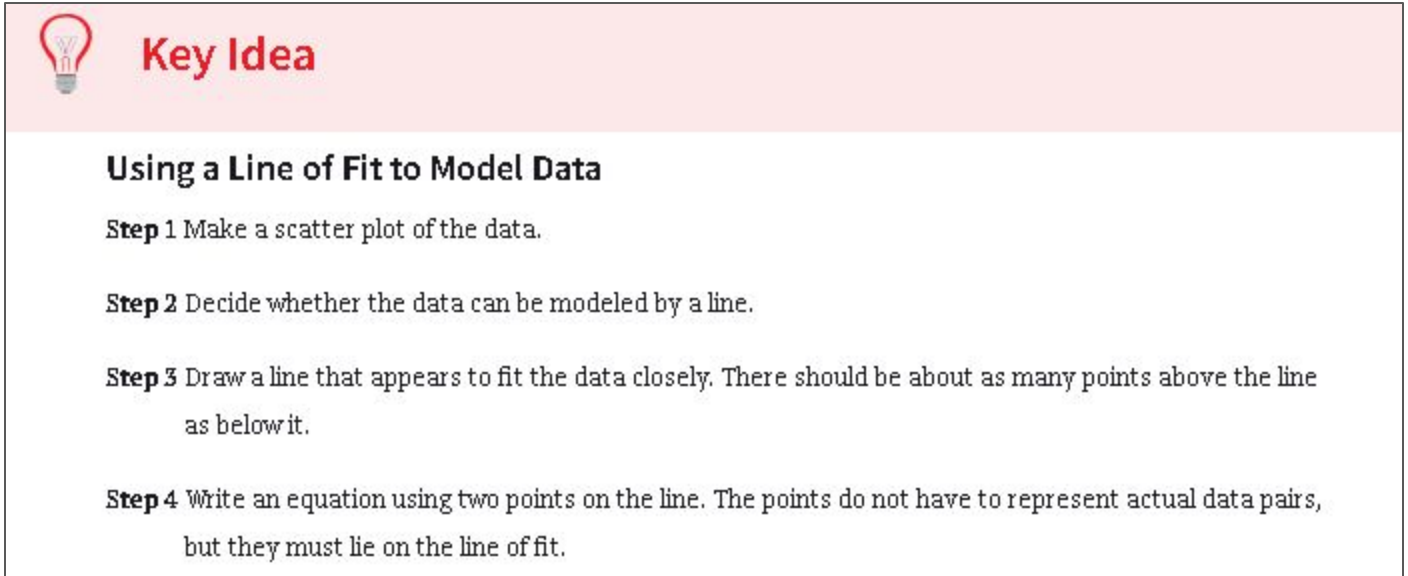
- Main concept of solving for y = ,
- identify slope,
- parallel or perpendicular, and
- using a point with slope to make equation and graph of line.

Monday - Add problems online #

Overview Activities for Week: Sept 25-26 --- continue

Wednesday: Use Black Practice Book pg 67 on Scatterplot and relationships as note guide.

Also give HANDOUT 4.4 Reteaching and extra practice for work and example problems for notes. Discuss the plan of using a line of fit.



Key Idea

Using a Line of Fit to Model Data

Step 1 Make a scatter plot of the data.

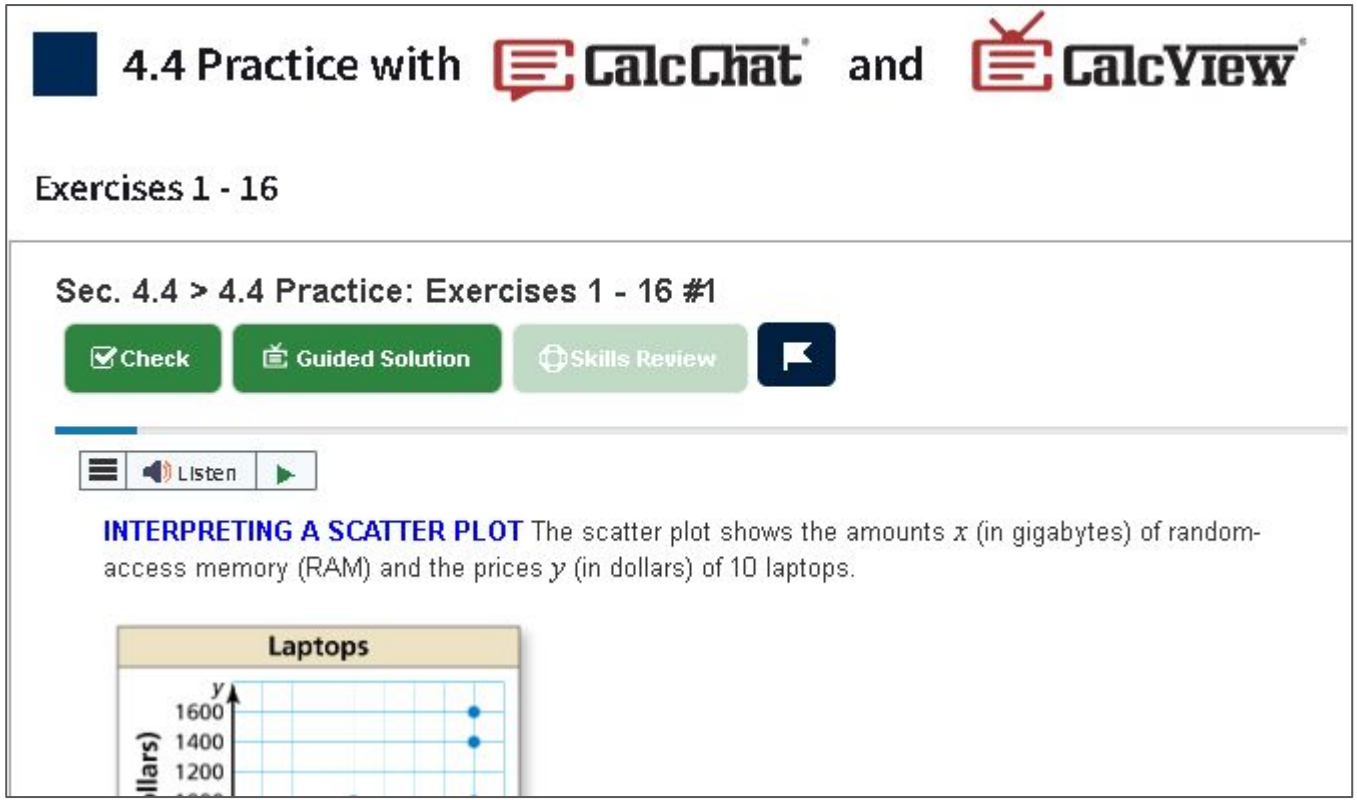
Step 2 Decide whether the data can be modeled by a line.

Step 3 Draw a line that appears to fit the data closely. There should be about as many points above the line as below it.

Step 4 Write an equation using two points on the line. The points do not have to represent actual data pairs, but they must lie on the line of fit.

Overview Activities for Week: Sept 27 --- continue

Friday: Use Dynamic Classroom to monitor students practice of # 1-15 odds first.



NEXT SLIDES are various notes from past 4 weeks - Sept.

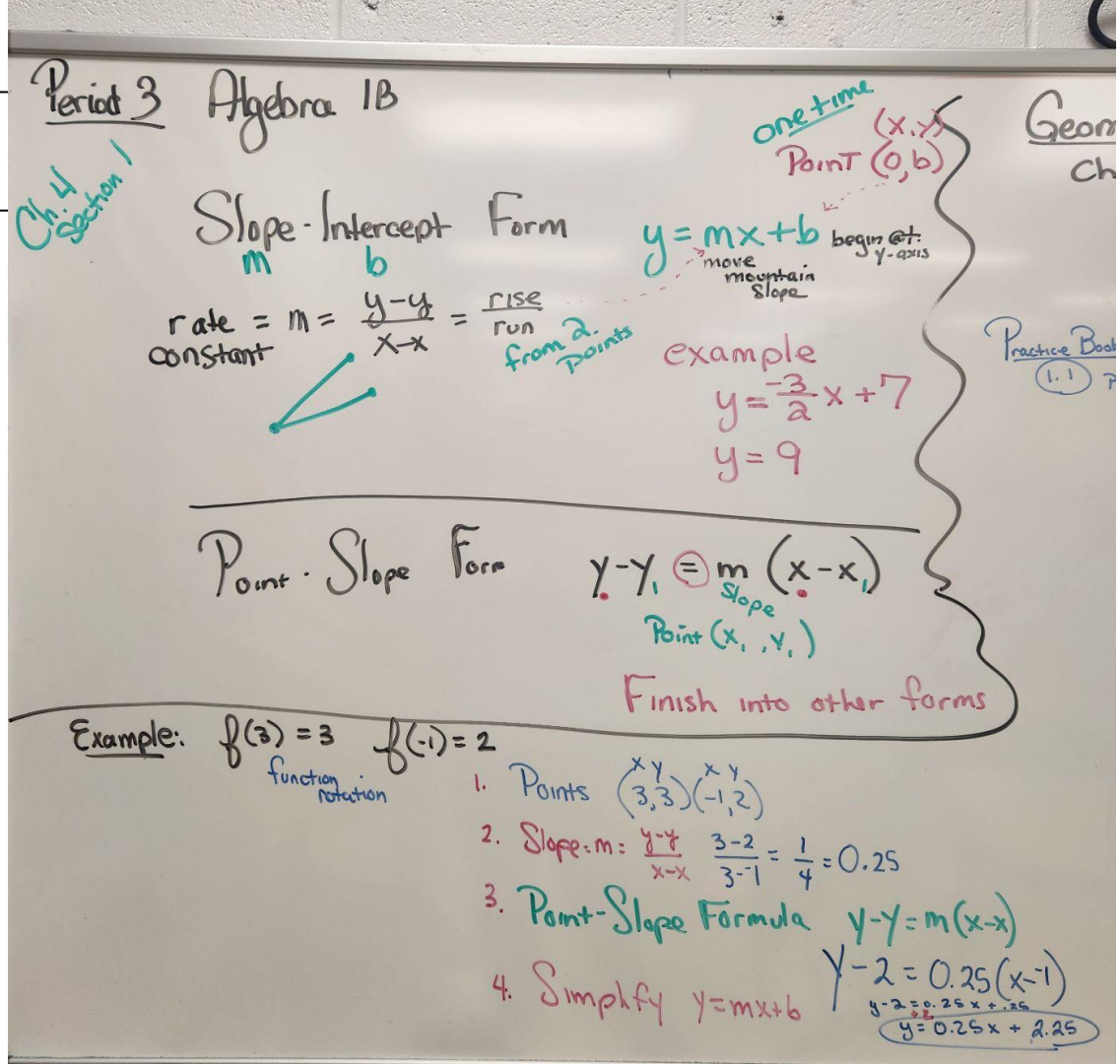
Overview

Writing LINEAR equations

Section 1 -- Slope Intercept Form

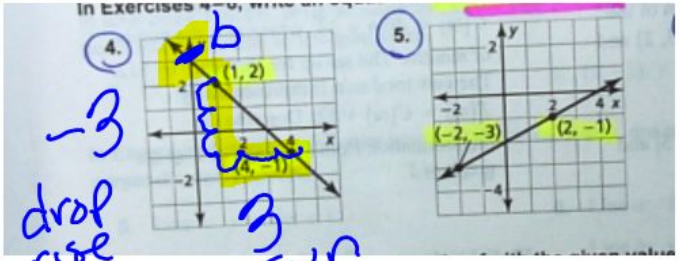
Section 2 -- Point Slope Form

Linear Functions rewrite



Slope Intercept Form:

$y = mx + b$



b

−3

drop rise

3 run

#4 (1,2) (4,−1) m= formula

$m = \frac{-3}{3} = -1$

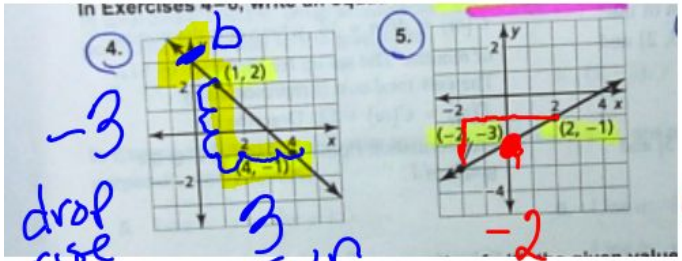
$m = \frac{\text{rise}}{\text{run}}$

$y = -1x + b$

$y = -1x + 3$

Slope Intercept Form:

$y = mx + b$



b

−3

drop / rise

3 run

−2

$m = \frac{2}{4} = \frac{1}{2}$

move PT TO PT

b

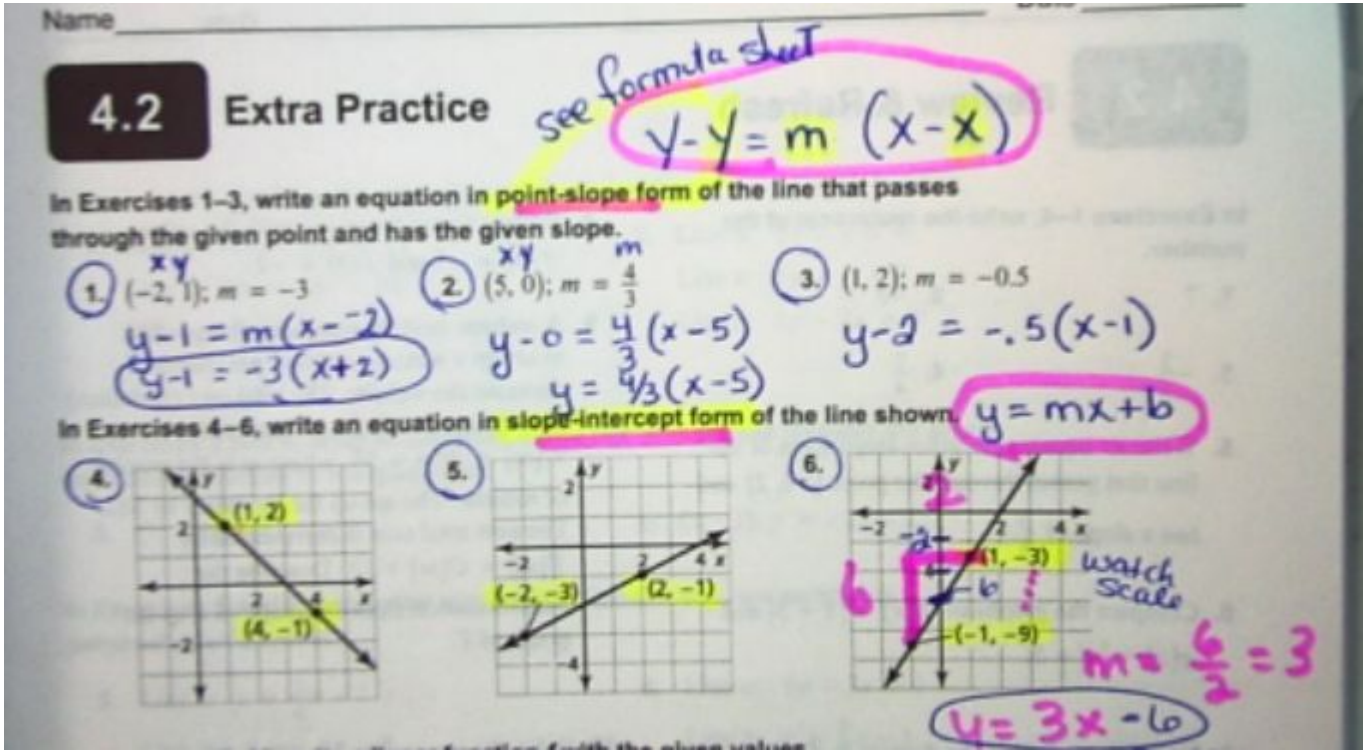
begin

on y axis

$y = \frac{1}{2}x + b$

$y = \frac{1}{2}x - 2$

Black practice book



Name _____

4.2 Extra Practice

see formula sheet

$y - y = m(x - x)$

In Exercises 1–3, write an equation in point-slope form of the line that passes through the given point and has the given slope.

1. $(-2, 1)$; $m = -3$

$y - 1 = m(x - -2)$

$y - 1 = -3(x + 2)$

2. $(5, 0)$; $m = \frac{4}{3}$

$y - 0 = \frac{4}{3}(x - 5)$

$y = 4/3(x - 5)$

3. $(1, 2)$; $m = -0.5$

$y - 2 = -.5(x - 1)$

In Exercises 4–6, write an equation in slope-intercept form of the line shown.

$y = mx + b$

4.

5.

6.

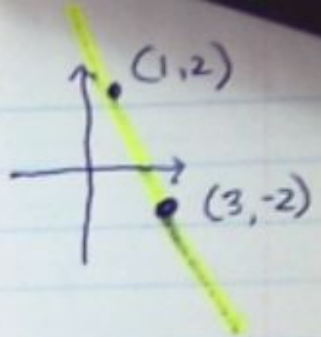
watch scale

$m = \frac{6}{2} = 3$

$y = 3x - 6$

Write in Slope Intercept Form

$y = mx + b$



Steps off Formula Sheet

1. Slope
2. Point Slope Form
3. Slope Intercept Form

1. Slope $m = \frac{y-y}{x-x}$

$m = \frac{2 - -2}{1 - 3}$

Substitute
$x = 1 \quad y = 2$
$x = 3 \quad y = -2$

$m = \frac{2+2}{-2} = \frac{4}{-2} = -2$

2. Point Slope Form

$y - y = m(x - x)$ (Point 1,2)

Mon. 9/9 Notes

	x	y
#9 $f(5) = -1.5$	5	-1.5
$f(-7) = 4.5$	-7	4.5

write a linear function

write the equation

1. Slope
2. Point Slope
3. Rewrite Slope-intercept

☺ function

$$\text{Slope} = m = \frac{y-y}{x-x} = \frac{4.5 - -1.5}{-7 - 5} = \frac{6.0}{-12} = -.5$$

$$m = -\frac{1}{2} = -.5$$

Point-Slope Formula $y - y = m(x - x)$

$m = -1/2 = -.5 = -0.5$

Point $(x = -7, y = 4.5)$

$y - 4.5 = -1/2(x - -7)$

$y - 4.5 = -1/2x - 3.5$

$+4.5 \quad +4.5$

$y = -1/2x + 1$

Overview Activities for Week: Sept 16-20

Warmup with solving for y in equations.

Pg 65 of Black practice book with #5 on identifying linear equations

that are parallel, perpendicular, or neither based on equation

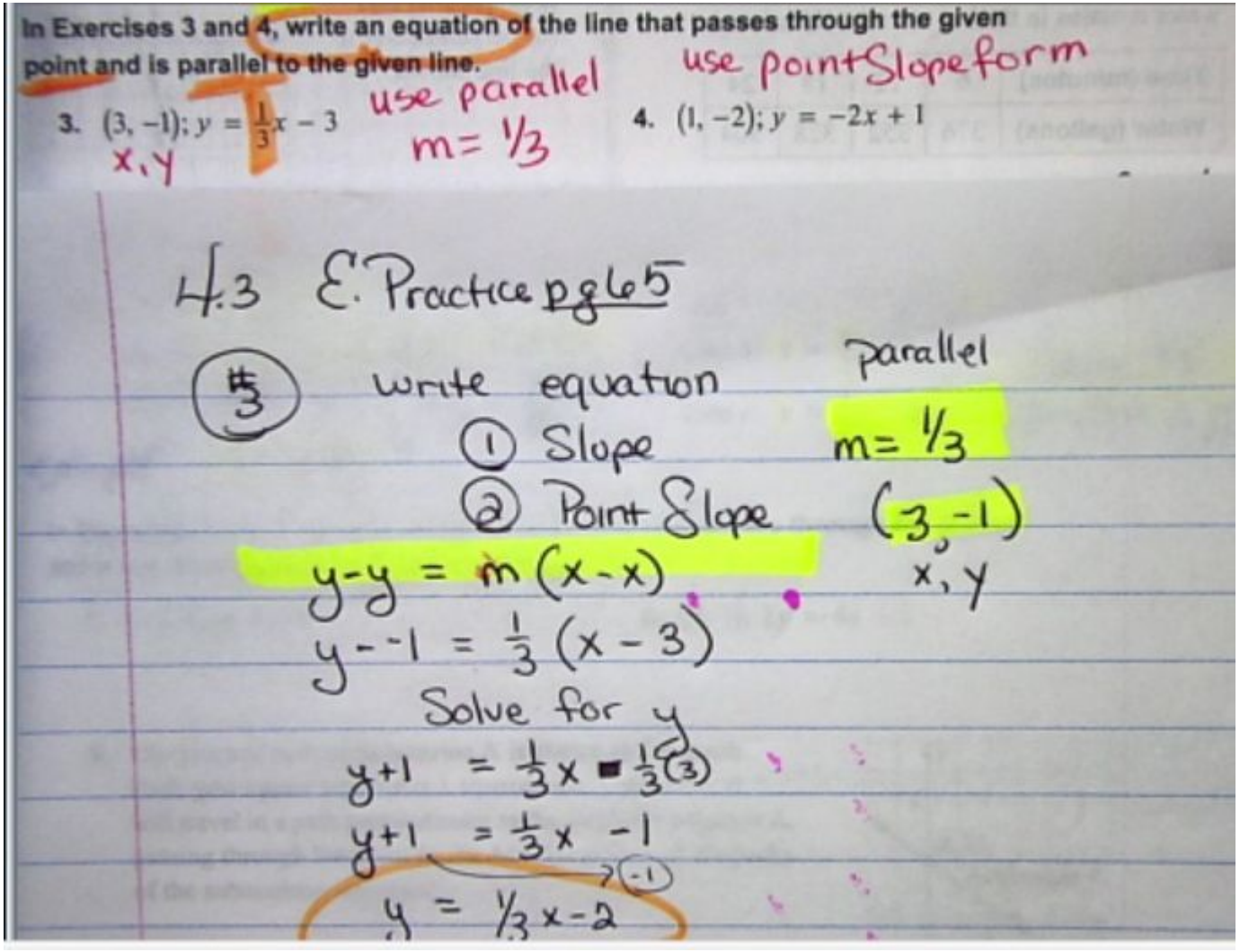
then graph to confirm.

Complete the page- problems # 1,2,3,6 as homework.

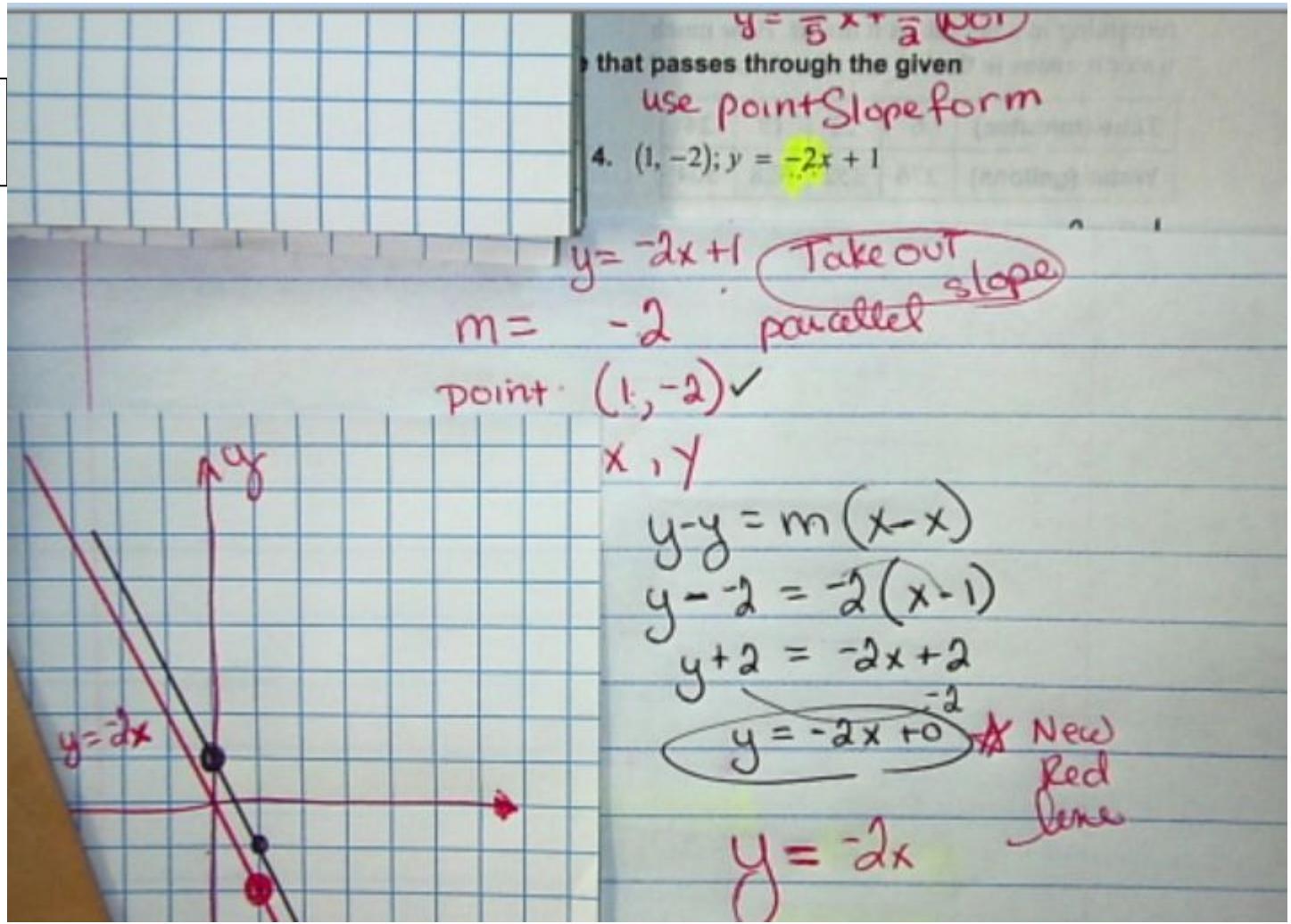
#10 on Black Practice book pg. 65 as warmup

4,7-11 from the page and finish.

parallel


In Exercises 3 and 4, write an equation of the line that passes through the given point and is parallel to the given line.
use parallel
use point Slope form
3. $(3, -1); y = \frac{1}{3}x - 3$
x, y
m = 1/3
4. $(1, -2); y = -2x + 1$
4.3 E. Practice pg 165
#3
write equation
① Slope
② Point Slope
parallel
m = 1/3
(3, -1)
x, y
y - y = m(x - x)
y - -1 = 1/3 (x - 3)
Solve for y
y + 1 = 1/3 x - 1/3 (3)
y + 1 = 1/3 x - 1
-1
y = 1/3 x - 2

Parallel Ex.


that passes through the given
use point-Slope form
4. (1, −2); y = −2x + 1
y = −2x + 1
Take out slope
parallel
m = −2
point (1, −2) ✓
x, y
y − y = m(x − x)
y − −2 = −2(x − 1)
y + 2 = −2x + 2
−2
y = −2x + 0
New Red line
y = −2x
y
y = −2x