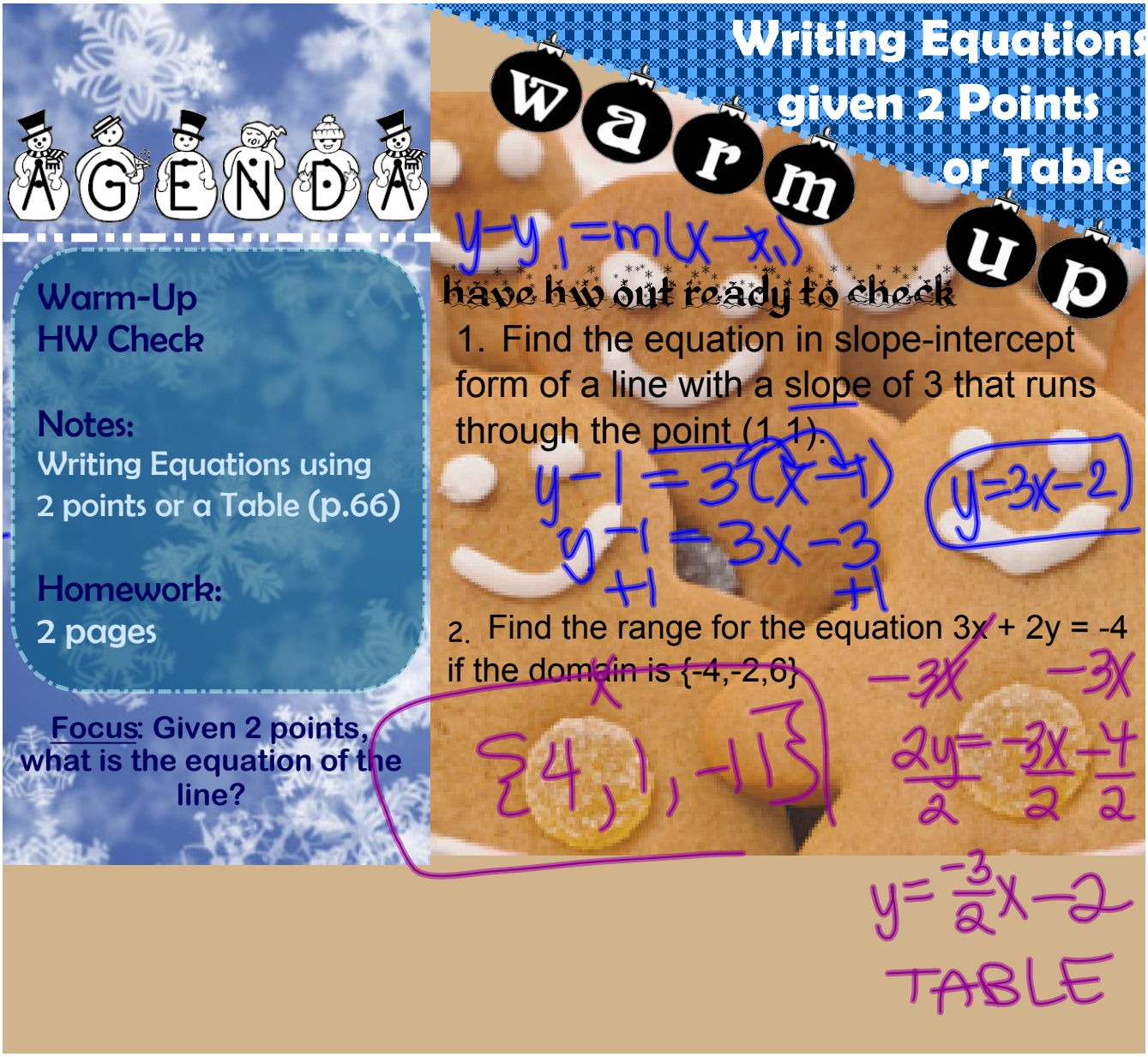
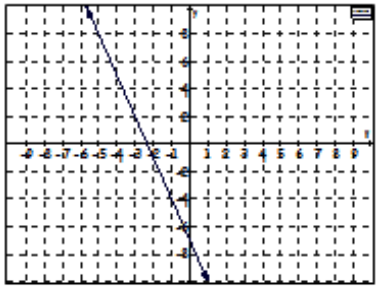

AGENDA
Warm-Up
HW Check
Notes:
Writing Equations using
2 points or a Table (p.66)
Homework:
2 pages
Focus: Given 2 points, what is the equation of the line?
Writing Equations given 2 Points or Table
warm up
$y-y_1=m(x-x_1)$
have hw out ready to check
1. Find the equation in slope-intercept form of a line with a slope of 3 that runs through the point (1,1).
$y-1=3(x-1)$
$y-1=3x-3$
$+1 \quad +1$
$y=3x-2$
2. Find the range for the equation 3x + 2y = -4 if the domain is {-4,-2,6}
$-3x \quad -3x$
$\frac{2y}{2}=\frac{-3x}{2}-\frac{4}{2}$
$y=\frac{-3}{2}x-2$
{4, 1, -11}
TABLE

Answers

1. $y-4=-3(x+2)$
2. $y=2x+2$
3. $y=3x-7$
4. $y+12=\frac{3}{4}(x-8)$
5. $y=\frac{2}{3}x+7$
6. $y=\frac{-2}{5}x+9$
7. $y=6$
8. $x=-2$
9. $y=-4x-3$
10. M = -4500 Point: (6,53000)
    a. $y=-4500x+80000$
    b. 80000 sheets
11. $y=-3x-7$



Algebra I - Unit 4: Topic 1 – Writing Equations Given a Slope and a Point

Practice – Writing Equations Given a Slope and a Point **pp 341-342**

Name _____ Date _____ Period _____

1. Write an equation in point-slope form of a line with a slope of -3 that passes through the point (-2, 4)

2. Write an equation in slope-intercept form of a line with a slope of 2 that passes through the point (3, 8)

given:
m=2
point (3,8)
x_1 y_1

$y-8=2(x-3)$
$y-8=2x-6$
$+8 \quad +8$
$y=2x+2$

3. Write an equation in slope-intercept form of a line with a slope of 3 that passes through the point (4, 5)

4. Write an equation in point-slope form of a line with a slope of $\frac{3}{4}$ that passes through the point (8, -12)

5. Write an equation in slope-intercept form of a line with a slope of $\frac{2}{3}$ that passes through the point (3, 9)

6. Write an equation in slope-intercept form of a line with a slope of $-\frac{2}{5}$ that passes through the point (5, 7)

7. Write an equation in slope-intercept form of a line with a slope of 0 that passes through the point (-3, 6)

vertical

8. Write an equation in slope-intercept form of a line with a having an undefined slope that passes through the point (-2, 10)

HOY VUA

$x=-2$

Algebra I - Unit 4: Topic 1 – Writing Equations Given a Slope and a Point

9. Write an equation in slope-intercept form of a line with a slope of -4 that has an *y*-intercept of -3

10. After 6 weeks of school, 53,000 sheets of computer paper are left. 4,500 sheets are used each (per) week.

Slope : m = -4500 Point : (6, 53000)

w s

a. Write an equation that represents this situation where *s* is the total number of sheets left and *w* is the number of weeks.

$y - 53000 = -4500(x - 6)$

$y - 53000 = -4500x + 27000$

$+53000 \quad +53000$

$y = -4500x + 80000$

y s w

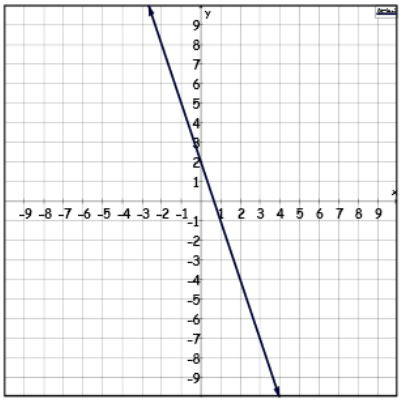
b. How many sheets of paper did this school start with?

80000 sheets

y=mx+b

11. a. Write an equation of a line passing through the point (-5, 8) with the same slope as the graphed line below.

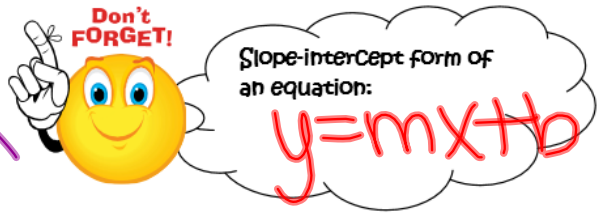
b. Graph the new line on the same coordinate plane.



P. 46

Algebra I - Unit 4: Topic 1 - Writing Equations of Lines from a Table or 2 Points

Student Notes – Writing Equations of Lines from Two Points and a Table pp 343-344



1. Choose any two ordered pairs from the table to find the slope.

x	y
0	11
1	16
2	21

$\frac{\Delta y}{\Delta x}$ Rise / Run

+5 +5

$m = \frac{5}{1}$

x=0

Identify the *y*-intercept for the relationship shown in the table. $b =$ 11

Write the equation in slope-intercept form. $y = 5x + 11$

2. Write an equation in point-slope form for the function represented in the table.

x	y
-2	1.3
-1	2.5
0	3.7

+1.2 +1.2

$m = \frac{1.2}{1}$

$y - 1.3 = 1.2(x + 2)$

3. Write an equation in slope-intercept form for the function represented in the table.

L1 L2 CALCULATOR

x	y
5	-13
10	-10
15	-7

LinReg
y=ax+b
a=.6
b=-16

$y = .6x - 16$

$y = \frac{3}{5}x - 16$

.6 MATH enter enter

4. You can write the equation from a data set the same way.
{(2, 4), (6, 6), (12, 9)}

x	y
2	4
6	6
12	9

$y = \frac{1}{2}x + 3$

2nd + 7 1 2

Algebra I - Unit 4: Topic 1 - Writing Equations of Lines from a Table or 2 Points

Find Equations from points/tables using your calculator

1. Press STAT then press ENTER
2. Put x-values in L_1 and y-values in L_2 (Press ENTER after each value)
3. Press STAT, Right Arrow to CALC, press 4 (LinReg), ENTER to "Calculate"
4. a value is your slope
5. b value is your y-intercept

To Clear a List:
1. Arrow to the top of a list
2. Press CLEAR, then ENTER

NOT DEL

CALC TESTS
1:Edit…
2:SortA(
3:SortD(
4:ClrList
5:SetUpEditor

L1	L2	L3 2
1	5	------
2	6	
3	7	
------	------	

L2(1)=5

EDIT CALC TESTS
1:1-Var Stats
2:2-Var Stats
3:Med-Med
4:LinReg(ax+b)
5:QuadReg
6:CubicReg
7↓QuartReg

LinReg(ax+b)
Xlist:L1
Ylist:L2
FreqList:
Store RegEQ:
Calculate

LinReg
y=ax+b
a=1
b=4

Algebra I - Unit 4: Topic 1 - Writing Equations of Lines from a Table or 2 Points

5. Write the equation which represents the line that passes through the points (0, 2) and (2, 6) in slope-intercept form

x	y
0	2
2	6

$y = 2x + 2$

6. Write the equation of the line that passes through the points (-2, 1) and (0, -7) in standard form.

x	y
-2	1
0	-7

$y = -4x - 7$

$+4x \quad +4x$

$4x + y = -7$

7. A video store is having a sale on a certain kind of movie. At the end of the first day the store had 250 copies of the movie in stock. At the end of the fourth day there were 130 available in stock. Write an equation in slope-intercept that models the sale of this movie when *d* represents days and *m* represents number of movies. ind: time!

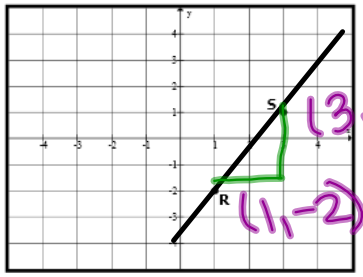
d	m
1	250
4	130

$m = -40d + 290$

40 movies sold each day

started w/ 290 movies

8. Write the linear equation of the line passing throught points *R* and *S* in slope-intercept form.



(3,1)

(1,-2)

Find points OR connect

x	y
3	1
1	-2

$y = 1x - 4$

decimal → MATH, enter, enter

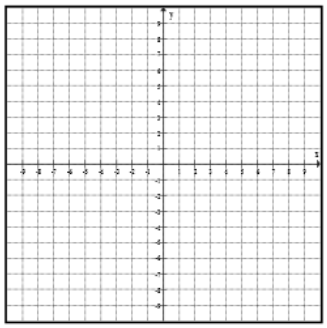
#1-11

Algebra I - Unit 4: Topic 1 - Writing Equations of Lines from a 2 points or a Table

Practice – Writing Equations Given Two Points or a Table **pp 343-347**

Name _____ Date _____ Period _____

1. Write an equation of the line containing the points (-1, -7) and (1, 3) in slope-intercept form, then graph.



2. Which function represents the line that contains the points (4, -1) and (-4, 6)?

A $f(x)=\frac{-7}{8}x+\frac{5}{2}$

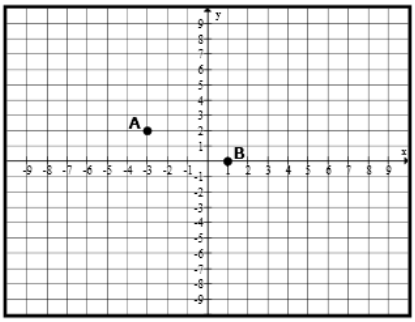
B $f(x)=\frac{-7}{8}x-\frac{9}{2}$

C $f(x)=\frac{-8}{7}x+\frac{30}{7}$

D $f(x)=\frac{-8}{7}x-\frac{5}{7}$

3. Write an equation that describes the line containing the points (-5, 1) and (0, -2) in point-slope form.

4. Write the linear equation of the line passing throught points *A* and *B* in standard form.



5. Bill began his diet when he weighed 268 pounds. After 4 weeks he weighed 250 pounds. Write an equation in slope-intercept form of the line if *w* represents weeks and *p* represents pounds? What is the domain and range of this situation?

Algebra I - Unit 4: Topic 1 - Writing Equations of Lines from a 2 points or a Table

Write the equation of each line in slope-intercept form given the table or data set.

6.

x	*y*
0	11
2	23
4	35

7. $\{(-3,4),(0,10),(3,16)\}$

8.

x	*y*
-7	14
-5	10
-3	6

9.

x	*y*
6	0
6	8
6	10

Answer the following questions.

10. The weight, *w*, in pounds, of a stack of books is dependent on the number of books, *n*, in the stack. This table represents the weight of four different stacks of books. Write an equation in terms of *n* and *w* that represents the data in the table.

Number of books (*n*)	**Weight in pounds (*w*)**
4	10
6	15
10	25
16	40

11. The table below lists corresponding *x* and *y* values of a linear function. Which equation best represents this function?

A $y = x + 1$
B $y = 4x - 1$
C $y = x + 4$
D $y = 4x + 1$

x	*y*
-3	-11
-1	-3
0	1
2	9
3	13
5	21