AGENDA

Warm-Up
HW Check
Notes: p.63
Homework: #1-11

Reminders:

Math Blitz THURSDAY 4:30-6:30PM. If you received an invite and do not attend: you will receive a zero. You MAY attend if you were not invited or work through the packet of information.

Quiz Friday!

Essential Question: How can I use a TI-84 to write the equation of a line?

Writing Equations given 2 Points or Table

warm up

have hw out ready to check

$y = mx + b$

1. Find the equation in slope intercept form of a line with a slope of 3 that passes through the point (1,1).

give: slope 3. point

$x_1 \ y_1$

$y - y_1 = m(x - x_1)$

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

$y - 1 = 3x - 3$

$+1 \qquad +1$

$y = 3x - 2$

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

HOY VUX

$x = -3$

vertical undefined

$x = \_\_$

Questions, Comments, Concerns?

Algebra I - Unit 4: Topic 1 – Writing Equations of Lines
Student Practice – Writing Equations of Lines

Write an equation of a line for each of the following situations:

1.

x	y
-3	0
0	6
3	12

2.

x	y
-10	-3
-5	-3
0	-3

3. Using the graph below, write an equation for a line passing through the point (-5, 8) with the same slope as the line graphed below.

$$m = \frac{-6}{2} = -3 \quad \left(\overset{-5}{\underset{x_1}{}}, \overset{8}{\underset{y_1}{}}\right)$$

$$y - y_1 = m(x - x_1)$$

$$y - 8 = -3(x - (-5))$$

$$y - 8 = -3(x + 5)$$

neg.

4. Write a linear equation that includes the points (8, -2) and (4, -4)

$$-4 < \frac{8}{4} \frac{-2}{-4} > -2$$

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

$$y + 4 = \frac{1}{2}(x - 4)$$

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

$$y - 7 = -\frac{2}{5}(x - 5) \quad \text{solve for } y$$

$$y - 7 = -\frac{2}{5}x + 2$$

$$+7 \qquad\qquad +7$$

$$y = -\frac{2}{5}x + 9$$

Algebra I - Unit 4: Topic 1 – Writing Equations of Lines

6. 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.

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

Write the equation of the line that represents this data.

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

8. Write the linear equation of the line passing throught points *R* and *S*
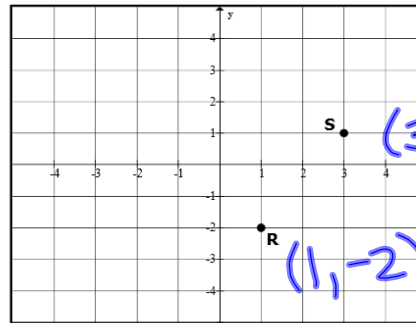
(3,1)

(1,-2)

x | y
1 | -2
3 | 1

plug like #4.
in

Writing Equations Using a Calculator p.63

Essential Question: How can I use a TI-84 to write the equation of a line?

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

Don't FORGET!

Slope-intercept form of an equation:

$$y = mx + b$$

x	y
0	3
1	5
2	7

+1   +2
+1   +2

Slope:

$$m = \frac{\Delta y}{\Delta x} = \frac{2}{1}$$

→When x=0

Identify the y-intercept for the relationship shown in the table. $b = \underline{3}$

Write the equation in slope-intercept form.

$$y = 2x + 3$$

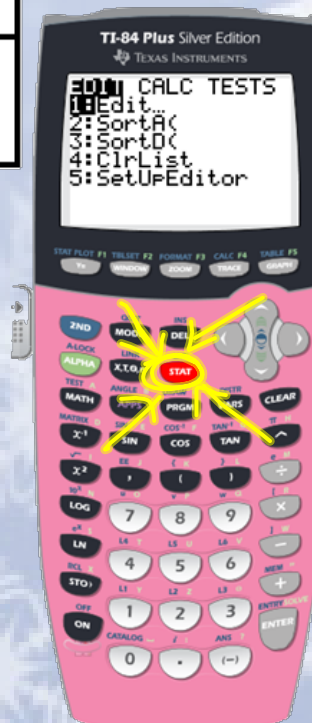# Writing Equations Using a Calculator p.63

Essential Question: How can I use a TI-84 to write the equation of a line?

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**

TI-84 Plus Silver Edition
TEXAS INSTRUMENTS

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

```
EDIT CALC TESTS
1:Edit…
2:SortA(
3:SortD(
4:ClrList
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```

L1	L2	L3	2
0	3	------	
1	5		
2	7		
------	------	------	

L2(1)=3

```
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=2
b=3
```

Writing Equations Using a Calculator p.63

Essential Question: How can I use a TI-84 to write the equation of a line?

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

L1   L2

x	y
-2	1.3
-1	2.5
0	3.7

LinReg
y=ax+b
a=1.2
b=3.7

$$y = 1.2 X + 3.7$$

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

x	y
5	-13
10	-10
15	-7

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

$$y = .6X - 16$$

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

MATH enter enter

4. You can write the equation from a data set the same way.
{(2, 0), (4, 1), (6, 2)}

x	y
2	0
4	1
6	2

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

STAT		ENTER	
L1		L2	
x's		y's	
STAT	➡	4	ENTER

5. Write the equation which represents the line that passes through the points (8, 9) and (4, 6) in slope-intercept form

x	y
8	9
4	6

*need 2 points to use calculator

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

Writing Equations Using a Calculator p.63

Essential Question: How can I use a TI-84 to write the equation of a line?

6. Write the equation of the line that passes through the points (3, -3) and (3, 0).

x	y
3	-3
3	0

to <

```
ERR:DOMAIN
1:Quit
2:Goto
```

$m = \dfrac{3}{0} = $ undefined

HOY VUX

$x = 3$

7. What is the equation of the table?

x	y
-2	5
-1	5
0	5

$y = 5$

$y = 0x + 5$

Writing Equations Using a Calculator p.63

__Essential Question:__ How can I use a TI-84 to write the equation of a line?

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.

days X	movies y
1	250
4	130

$$y = -40x + 290$$

$$\boxed{m = -40d + 290}$$

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

S (-4, 3)

R (-1, -3)
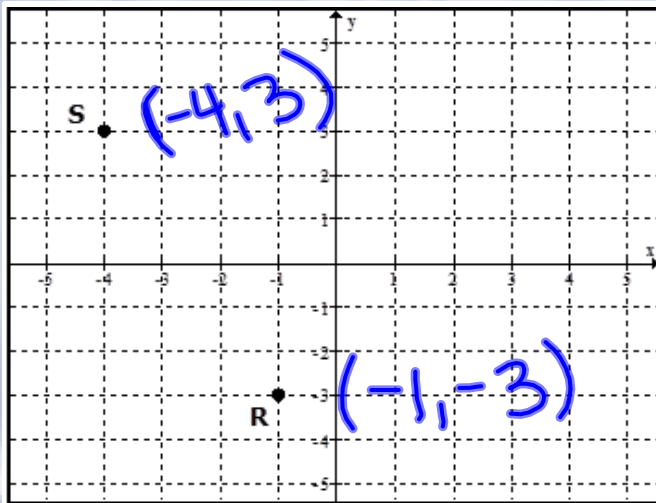
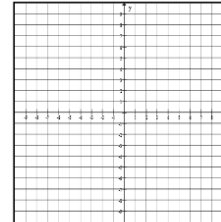| X	y
-4	3
-1	-3

$$y = -2x - 5$$

Algebra I - Unit 4: Topic 1 - Writing Equations of Lines

Practice – Writing Equations of Lines Day 2   **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.
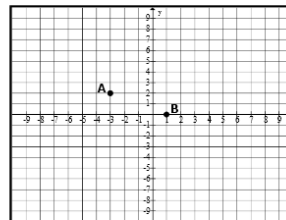
2. Which function represents the line that contains the points (4, -1) and (-4, 6)?

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

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

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

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

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*.

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.

Algebra I - Unit 4: Topic 1 - Writing Equations of Lines

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	14
-3	14

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?

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

Writing Equations Day 2 HW Help!

Need more help or a calculator? Drop by any teachers' tutorials!

1. y = 5x-2. Don't forget to graph!

2. To change a decimal to a fraction: MATH Enter Enter!

3. m = -3/5. Notice you don't need to solve for y!

4. The 2 points are (-3,2) and (1,0)

5. The 2 points are (0, 268) and (4, 250).

6-11 Use LinReg on your calculator! On #9, all the x-values are the same..

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