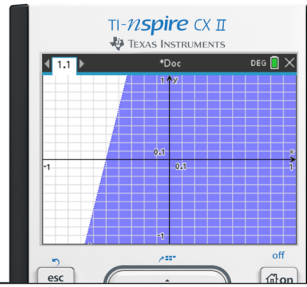
BASKETBALLS IN THE HOOP

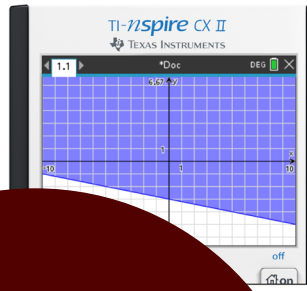
Linear Equations and Inequalities

Challenge G

1. Write the inequality in slope-intercept form.



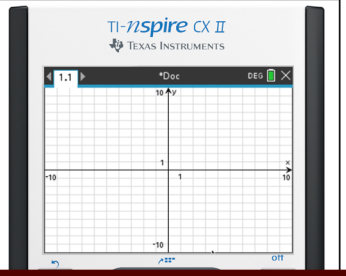
2. Write the inequality in slope-intercept form.



3.

Challenge H

1. Graph the following inequality:
$-3x + y < -7$



ANSWER KEY INCLUDED

RULES

- Students work in groups (up to 8 groups) to solve 8 different challenges. (24 questions in total)

- After each challenge, they bring it to you to get checked!

- If all the questions are *correct*, students choose a hoop to move their basketball to.

- Repeat for each challenge!

- At the end of class, reveal how many points each hoop is worth. The team with the most points WINS!

Score Tracker

Hoop 1: _____ (game pieces) · _____ (point value) =

Hoop 2: _____ (game pieces) · _____ (point value) =

Hoop 3: _____ (game pieces) · _____ (point value) =

Score Tracker

Hoop 1: _____ (game pieces) · _____ (point value) =

Hoop 2: _____ (game pieces) · _____ (point value) =

Hoop 3: _____ (game pieces) · _____ (point value) =

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Hoop 3: _____ (game pieces) · _____ (point value) =

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Score Tracker

Hoop 1: _____ (game pieces) • _____ (point value) =

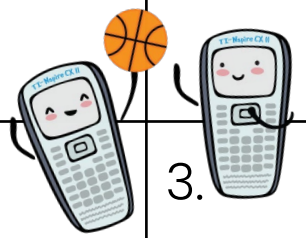
Hoop 2: _____ (game pieces) • _____ (point value) =

Hoop 3: _____ (game pieces) • _____ (point value) =

Basketballs in the Hoop Recording Sheet

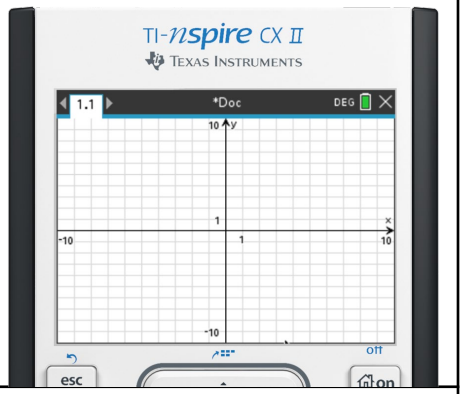
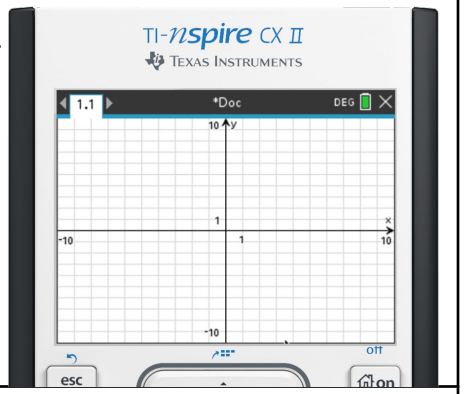
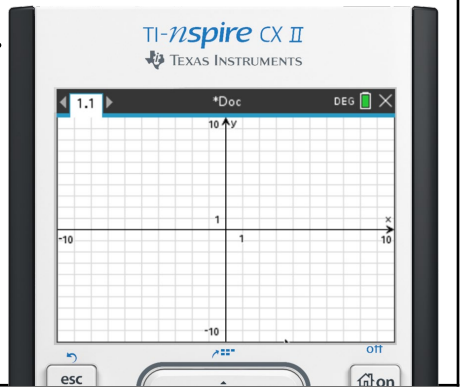
Group Number: _____ Name: _____

Challenge A	Challenge B	Challenge C	Challenge D
1. x-intercept: _____ y-intercept: _____	1.	1.	1.
2. x-intercept: _____ y-intercept: _____	2.	2.	2.
3. x-intercept: _____ y-intercept: _____	3.	3.	3.



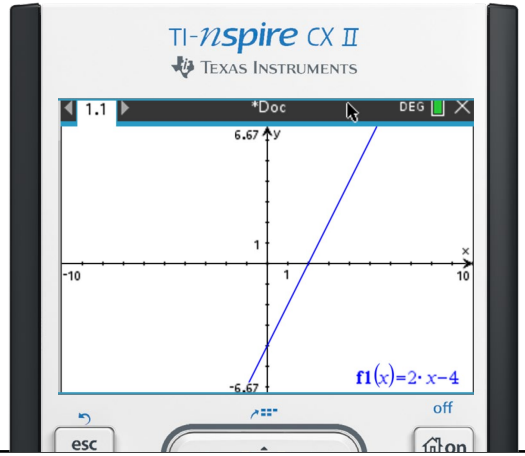
Basketballs in the Hoop Recording Sheet

Group Number: _____ Name: _____

Challenge E	Challenge F	Challenge G	Challenge H
1.	1. 	1.	1. 
2.	2.	2.	2. 
3. 	3.	3.	3. 

Challenge A

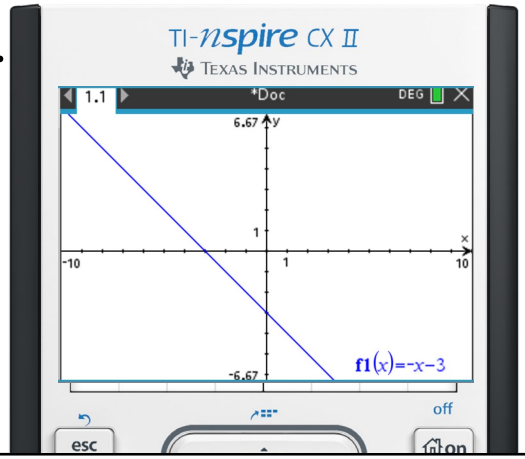
1.



x-intercept:

y-intercept:

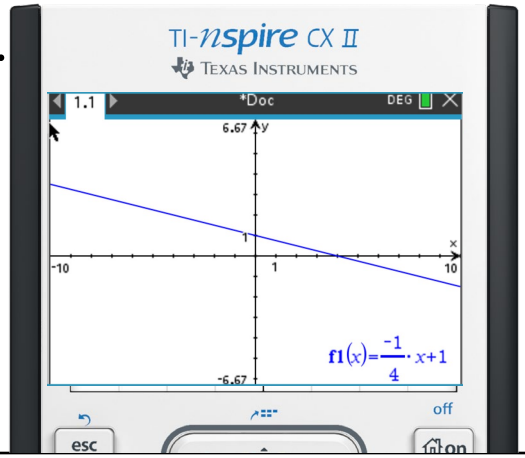
2.



x-intercept:

y-intercept:

3.

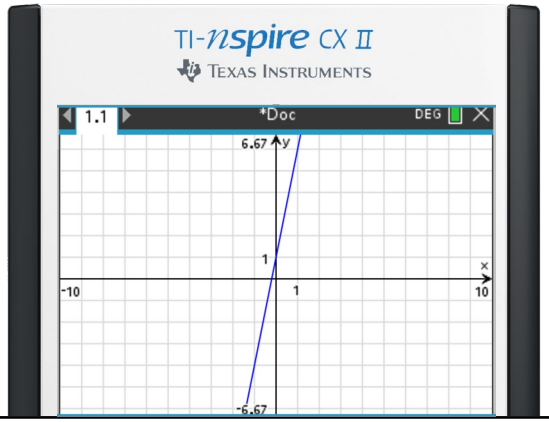


x-intercept:

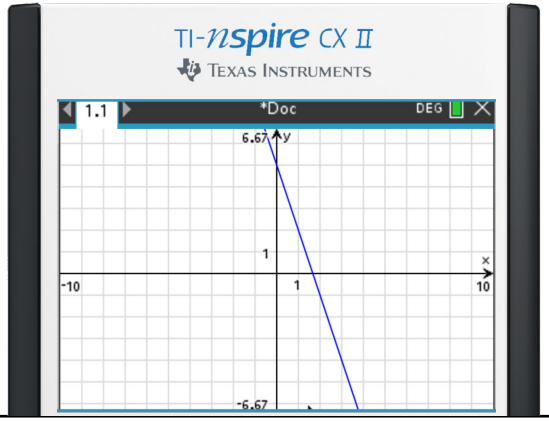
y-intercept:

Challenge B

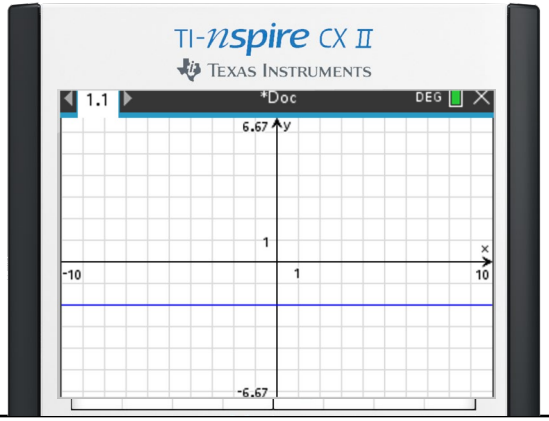
1. Write the equation for the following graph.



2. Write the equation for the following graph.



3. Write the equation for the following graph.



Challenge C

1. Rewrite the equation in slope-intercept form.

$$y - 5 = 2(x + 3)$$

2. Rewrite the equation in slope-intercept form.

$$y - 1 = 6(x + 2)$$

3. Rewrite the equation in slope-intercept form.

$$y - 4 = 12(x - 4)$$

Challenge D

1. Rewrite the equation in slope-intercept form.

$$10x - y = 12$$

2. Rewrite the equation in slope-intercept form.

$$3x + 4y = 12$$

3. Rewrite the equation in slope-intercept form.

$$-x + 2y = 5$$

Challenge E

1. Write the equation of a line in point slope form that passes through (5,4) and (-2,-3).

2. Write the equation of a line in point slope form that passes through (6,3) and (9,4).

3. Write the equation of a line in point slope form that passes through (-8,-3) and (-4,2).

Challenge F

1. Write the equation of the line in slope-intercept form.

x	y
-4	1
0	-2
4	-5
8	-8

2. Write the equation of the line in slope-intercept form.

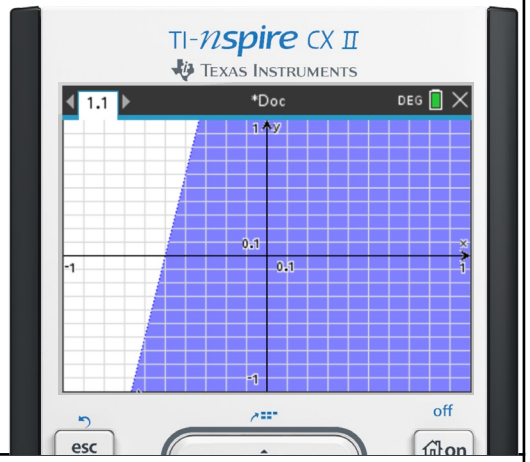
x	y
-8	20
-6	16
-4	12
-2	8

3. Write the equation of the line in slope-intercept form.

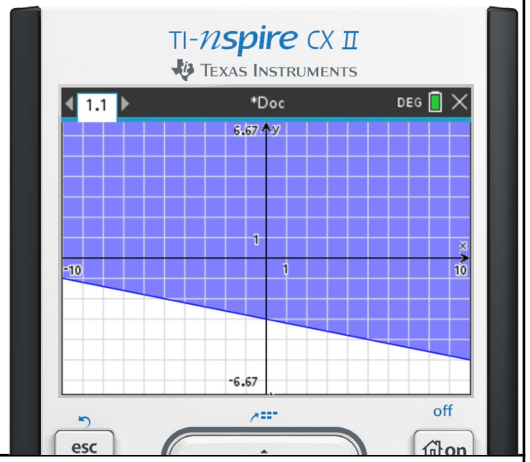
x	y
5	5
10	8
15	11
20	14

Challenge G

1. Write the inequality in slope-intercept form.



2. Write the inequality in slope-intercept form.



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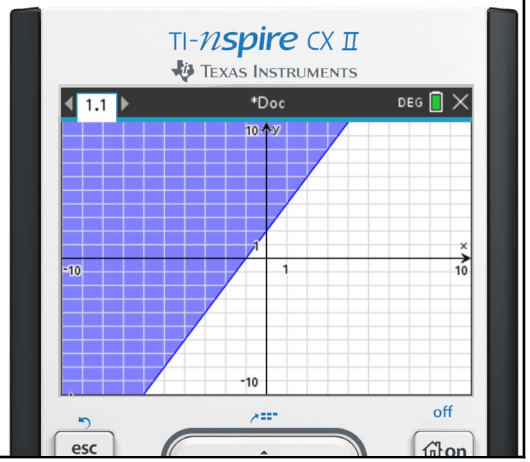
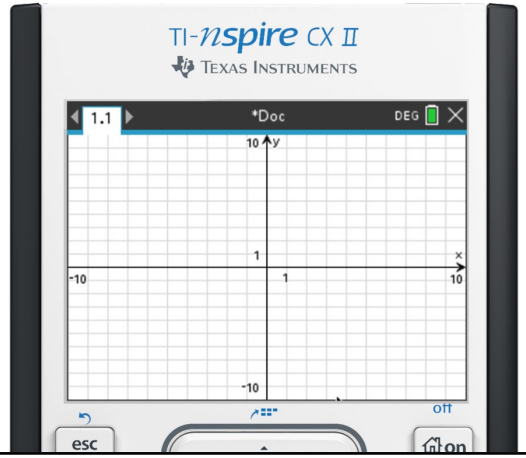
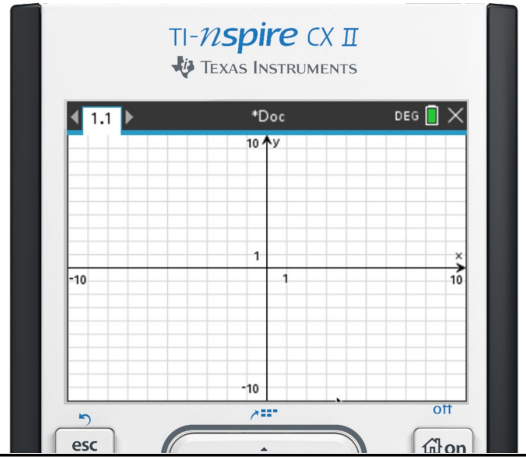


Challenge H

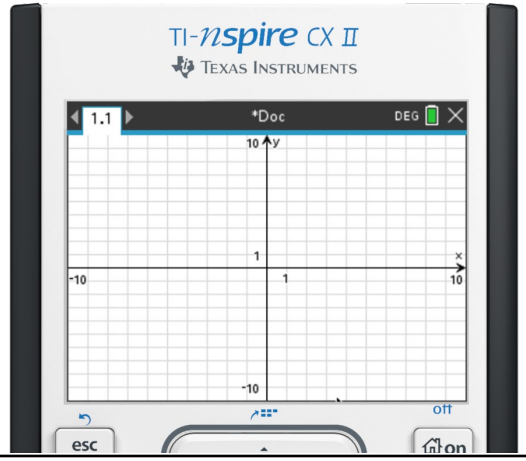
1. Graph the following inequality: $-3x + y < -7$



2. Graph the following inequality: $x - 5y > -10$

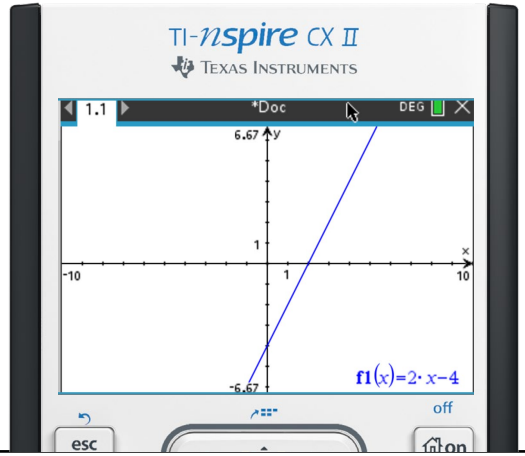


3. Graph the following inequality: $3x + 2y \geq -6$



Challenge A

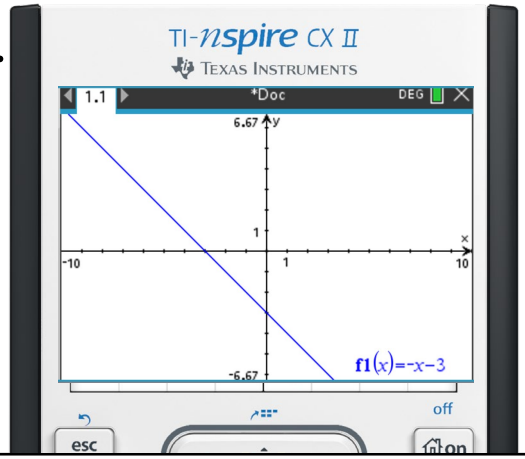
1.



x-intercept:
(2,0)

y-intercept:
(0,-4)

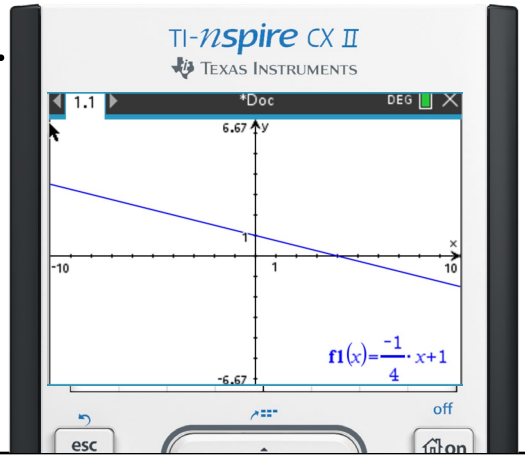
2.



x-intercept:
(-3,0)

y-intercept:
(0,-3)

3.



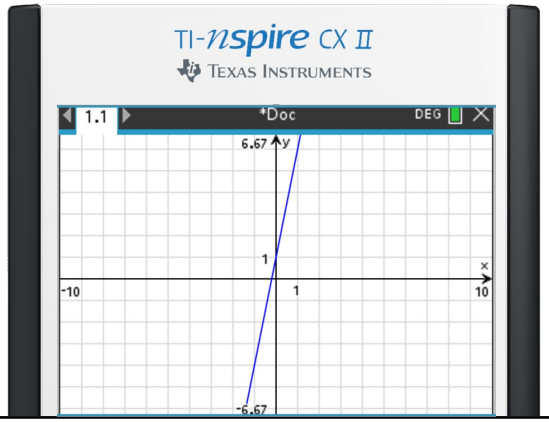
x-intercept:
(4,0)

y-intercept:
(0,1)

Challenge B

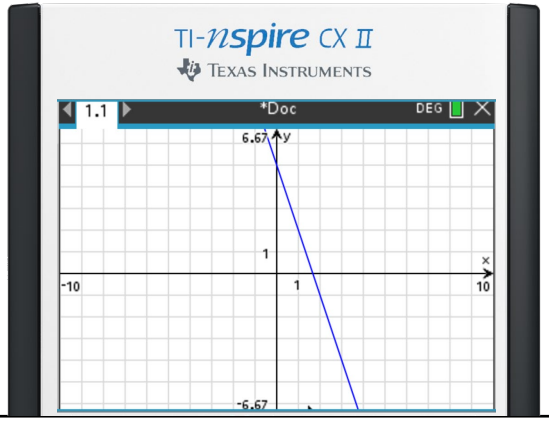
1. Write the equation for the following graph.

y = 5x + 1



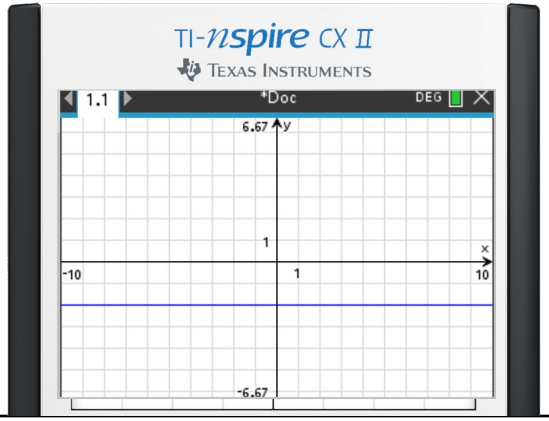
2. Write the equation for the following graph.

y = −3x + 5



3. Write the equation for the following graph.

y = -2



Challenge C

1. Rewrite the equation in slope-intercept form.

$$y - 5 = 2(x + 3)$$

$y = 2x + 11$

2. Rewrite the equation in slope-intercept form.

$$y - 1 = 6(x + 2)$$

$y = 6x + 13$

3. Rewrite the equation in slope-intercept form.

$$y - 4 = 12(x - 4)$$

$y = 12x - 44$

Challenge D

1. Rewrite the equation in slope-intercept form.

$$10x - y = 12$$

$y = 10x - 12$

2. Rewrite the equation in slope-intercept form.

$$3x + 4y = 12$$

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

3. Rewrite the equation in slope-intercept form.

$$-x + 2y = 5$$

$y = \frac{1}{2}x + \frac{5}{2}$

Challenge E

1. Write the equation of a line in point slope form that passes through (5,4) and (-2,-3).

$y - 4 = 1(x - 5)$

2. Write the equation of a line in point slope form that passes through (6,3) and (9,4).

$y - 3 = \frac{1}{3}(x - 6)$

3. Write the equation of a line in point slope form that passes through (-8,-3) and (-4,2).

$y + 3 = \frac{5}{4}(x + 8)$

Challenge F

1. Write the equation of the line in slope-intercept form.

x	y
-4	1
0	-2
4	-5
8	-8

$y = -\frac{3}{4}x - 2$

2. Write the equation of the line in slope-intercept form.

x	y
-8	20
-6	16
-4	12
-2	8

$y = -2x + 4$

3. Write the equation of the line in slope-intercept form.

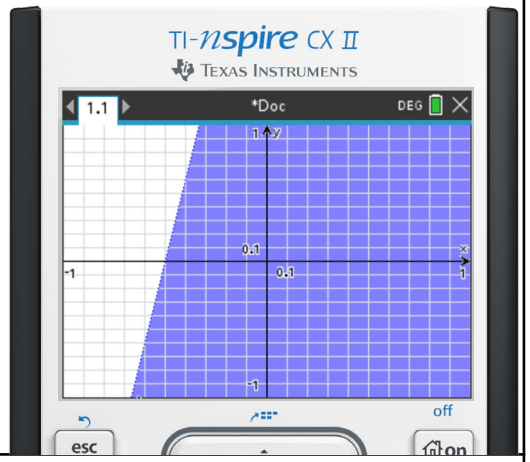
x	y
5	5
10	8
15	11
20	14

$y = \frac{3}{5}x + 2$

Challenge G

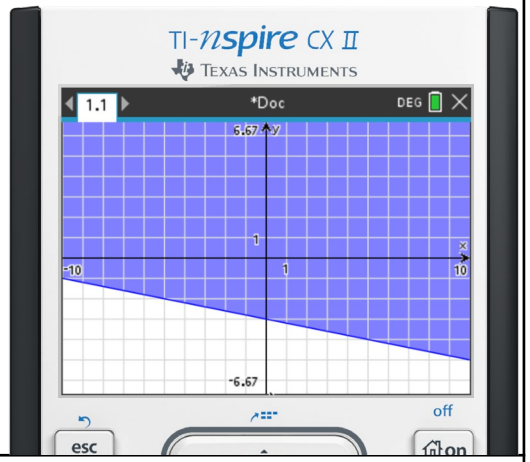
1. Write the inequality in slope-intercept form.

$y < 6x + 3$



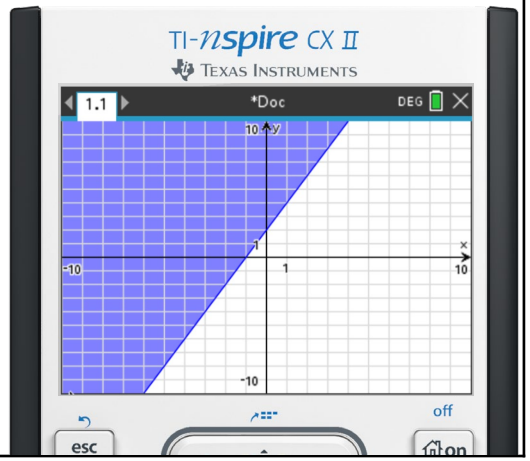
2. Write the inequality in slope-intercept form.

$y \geq -\frac{1}{5}x - 3$



3. Write the inequality in slope-intercept form.

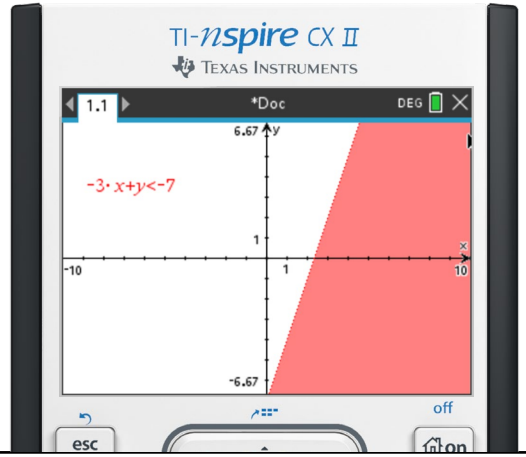
$y \geq 2x + 2$



Challenge H

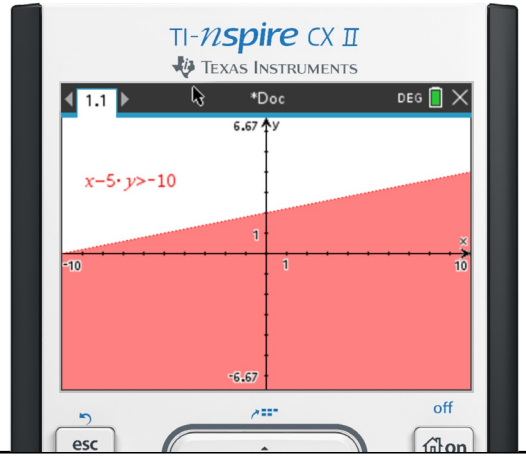
1. Graph the following inequality:

$-3x + y < -7$



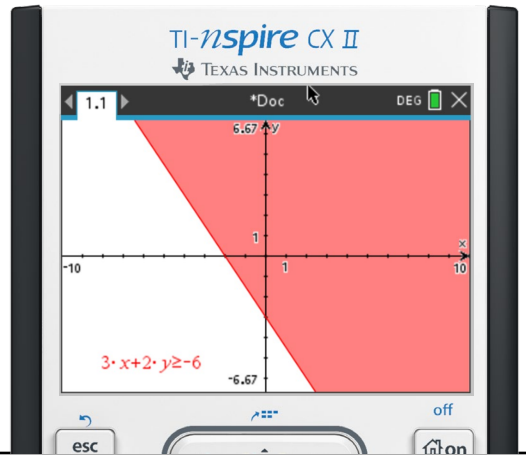
2. Graph the following inequality:

$x - 5y > -10$



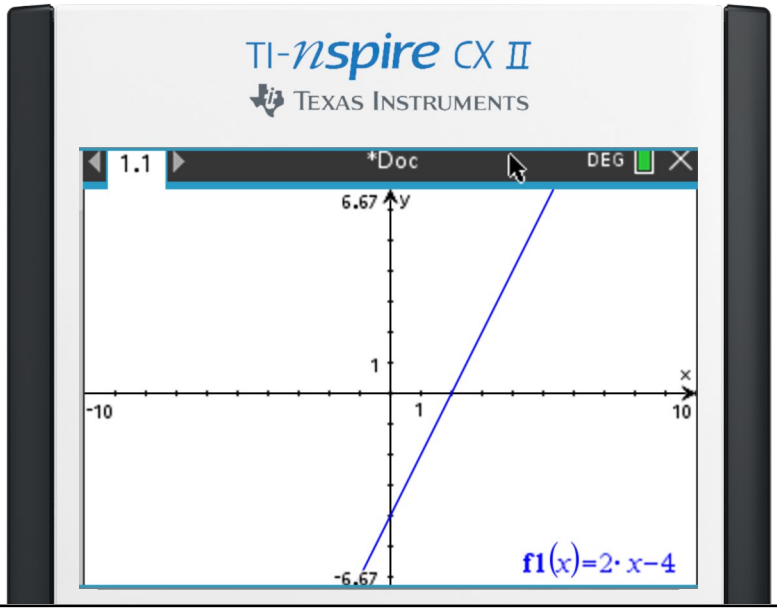
3. Graph the following inequality:

$3x + 2y \geq -6$



Challenge A

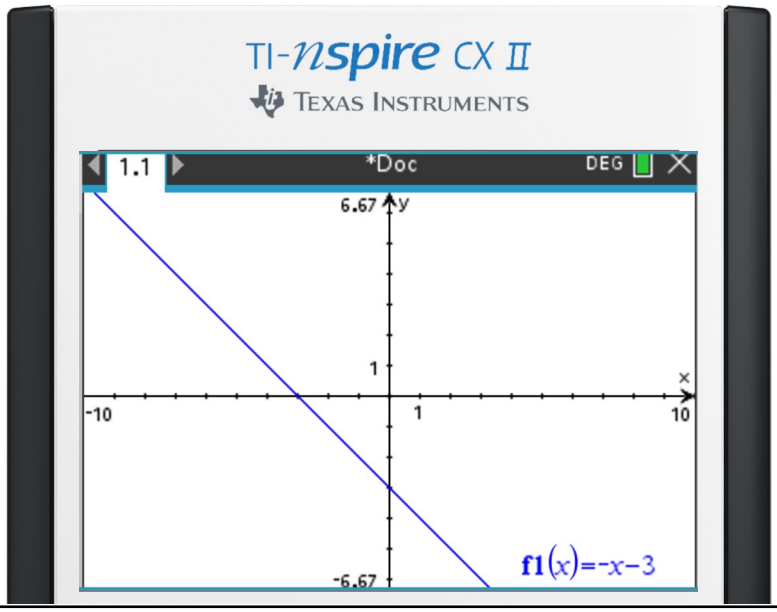
1.



x-intercept:

y-intercept:

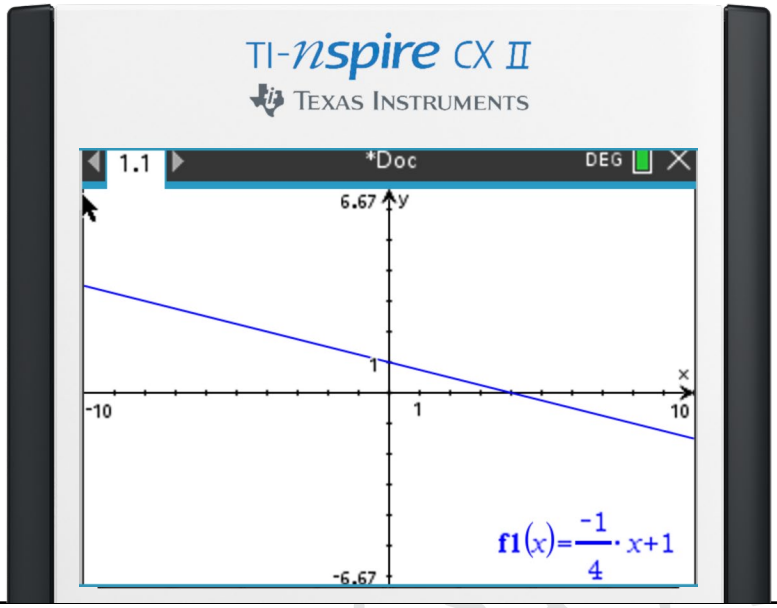
2.



x-intercept:

y-intercept:

3.

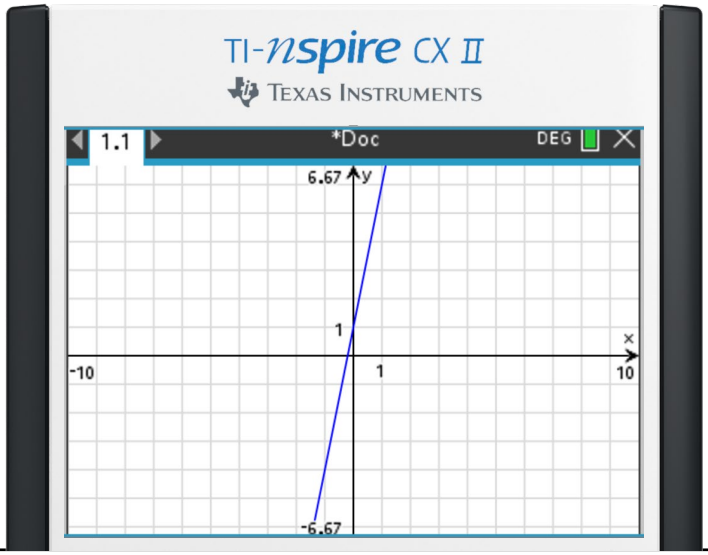


x-intercept:

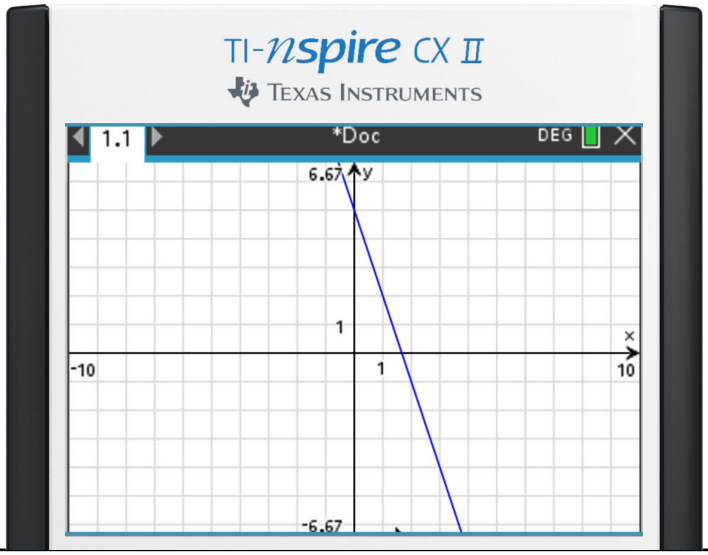
y-intercept:

Challenge B

1. Write the equation for the following graph.



2. Write the equation for the following graph.



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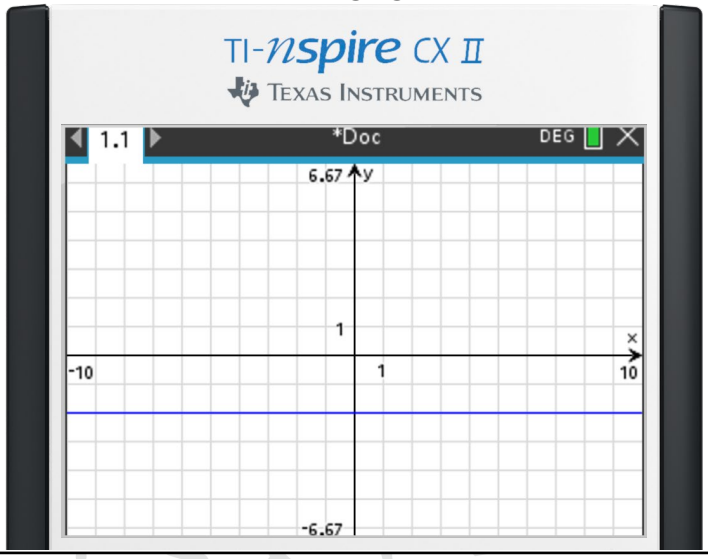

Challenge C

1. Rewrite the equation in slope-intercept form.

$$y - 5 = 2(x + 3)$$

2. Rewrite the equation in slope-intercept form.

$$y - 1 = 6(x + 2)$$

3. Rewrite the equation in slope-intercept form.

$$y - 4 = 12(x - 4)$$

Challenge D

1. Rewrite the equation in slope-intercept form.

$$10x - y = 12$$

2. Rewrite the equation in slope-intercept form.

$$3x + 4y = 12$$

3. Rewrite the equation in slope-intercept form.

$$-x + 2y = 5$$

Challenge E

1. Write the equation of a line in point slope form that passes through (5,4) and (-2,-3).

2. Write the equation of a line in point slope form that passes through (6,3) and (9,4).

3. Write the equation of a line in point slope form that passes through (-8,-3) and (-4,2).

Challenge F

1. Write the equation of the line in slope-intercept form.

x	y
-4	1
0	-2
4	-5
8	-8

2. Write the equation of the line in slope-intercept form.

x	y
-8	20
-6	16
-4	12
-2	8

3. Write the equation of the line in slope-intercept form.

x	y
5	5
10	8
15	11
20	14

Challenge G

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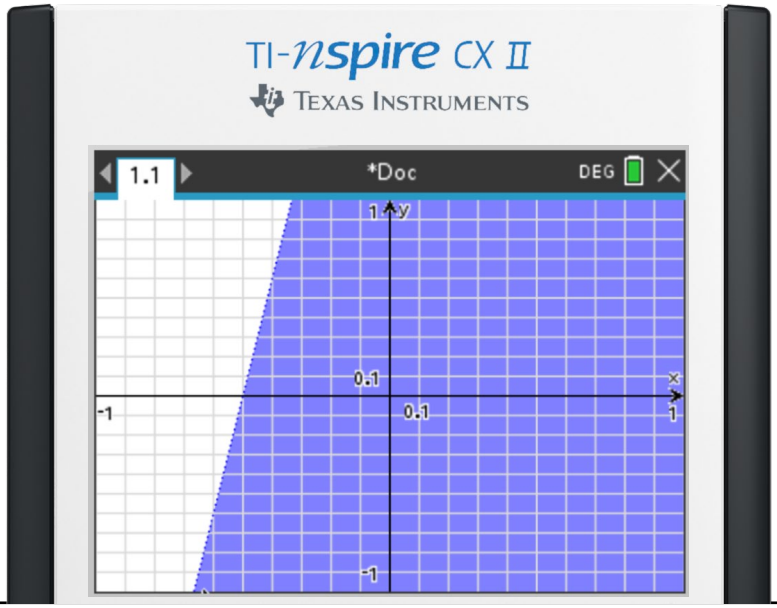

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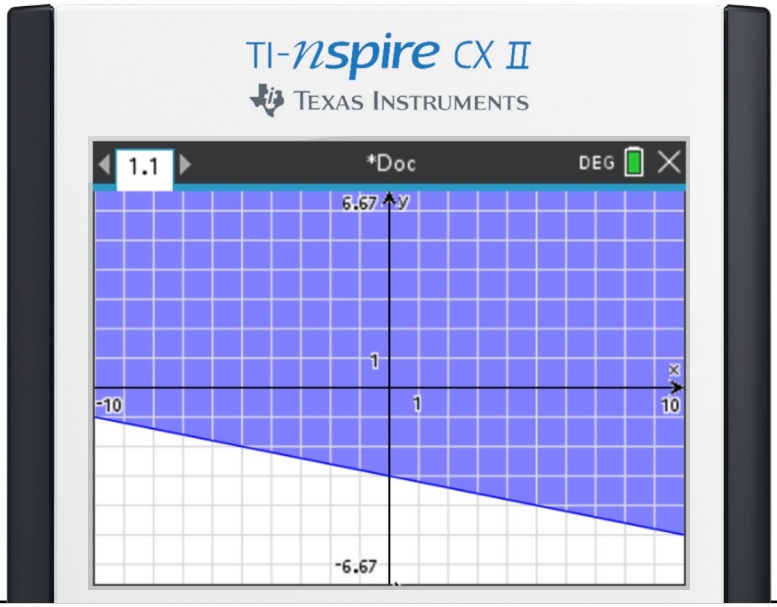

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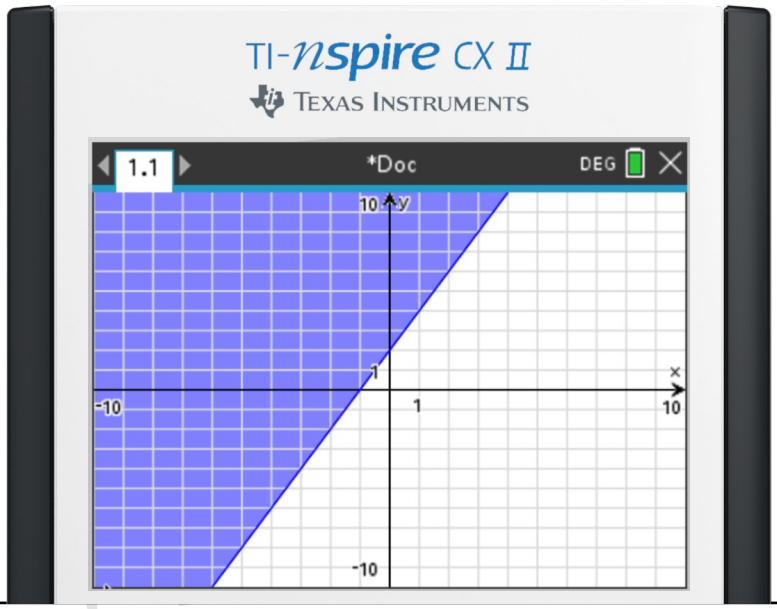

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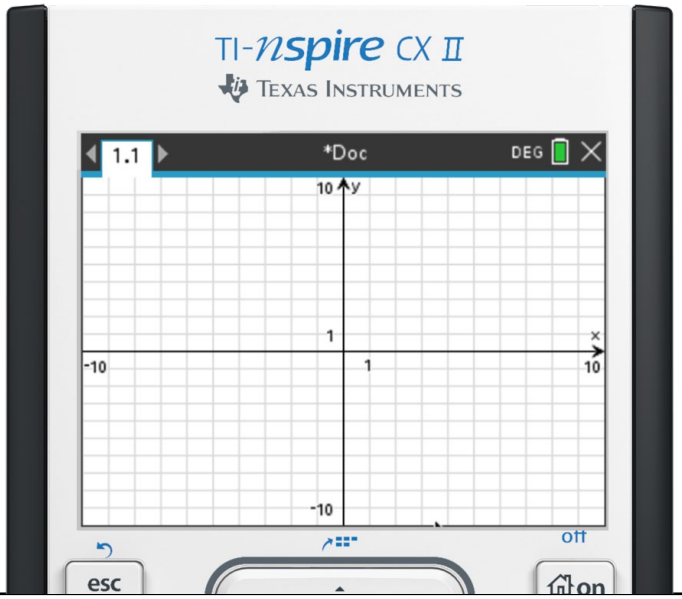

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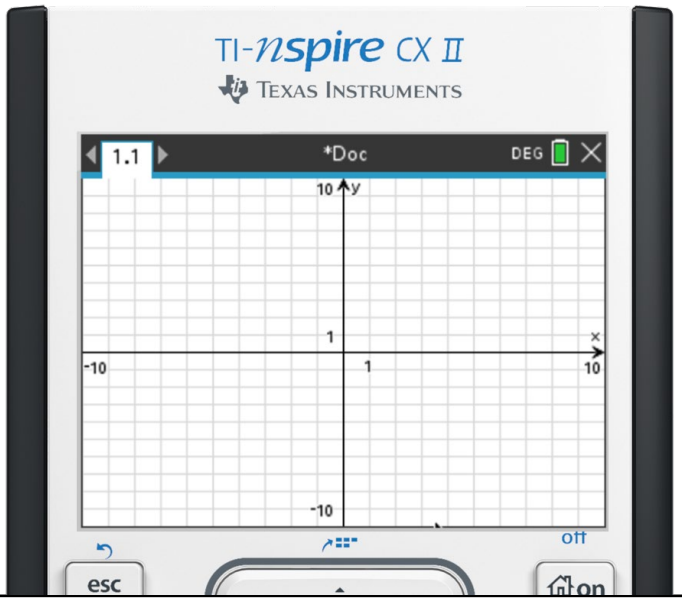

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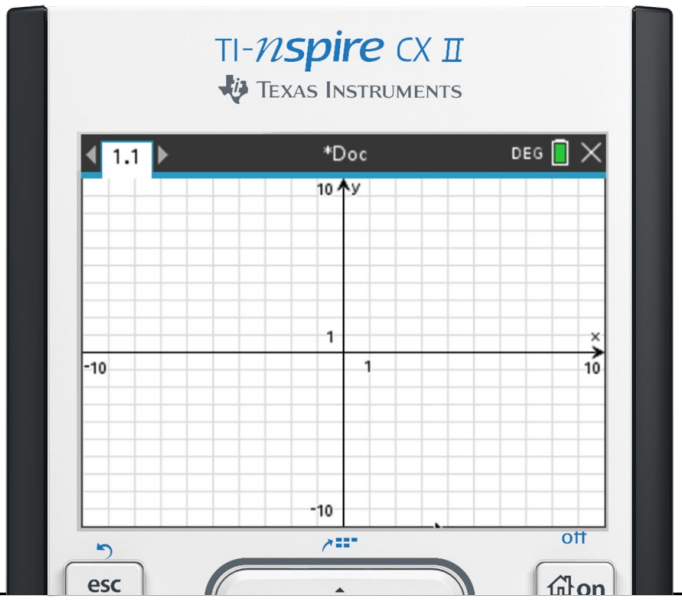
$3x + 2y \geq -6$



Writing Equations in Slope Intercept Form

NAME: _____

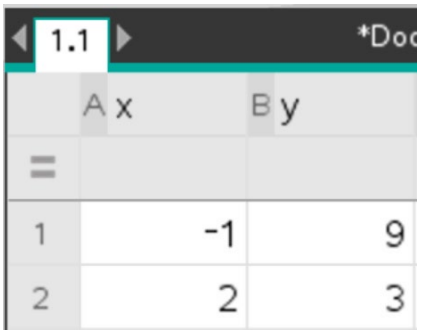
DATE: _____

With the TI-Nspire Calculator

STEP 1 :CREATE A TABLE

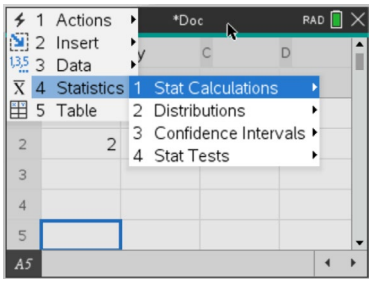
- New document- 6 Add List & Spreadsheets **OR** choose List & Spreadsheet on the home screen
- Label the top of column A as **x**
- Label the top of column B as **y**
- Enter the data from table in each column

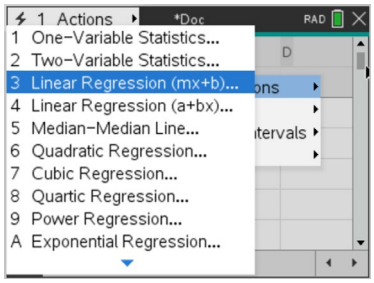
(-1, 9) and (2, 3)

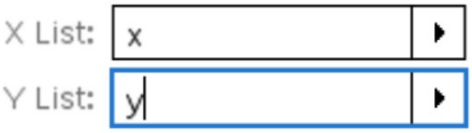


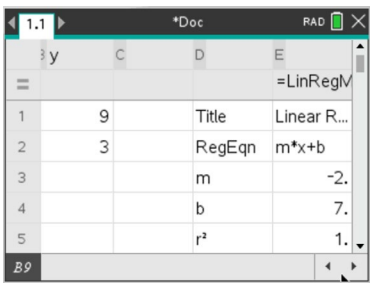
STEP 2 :CALCULATE THE LINEAR EQUATION

- MENU - 4 Statistics - 1 Stat Calculations - 3 Linear Regression
- X list is **x**
- Y list is **y**
- This will calculate the linear equation of the data entered
- Look at the **m** value to determine the slope
- Look at the **b** value to determine the y-intercept









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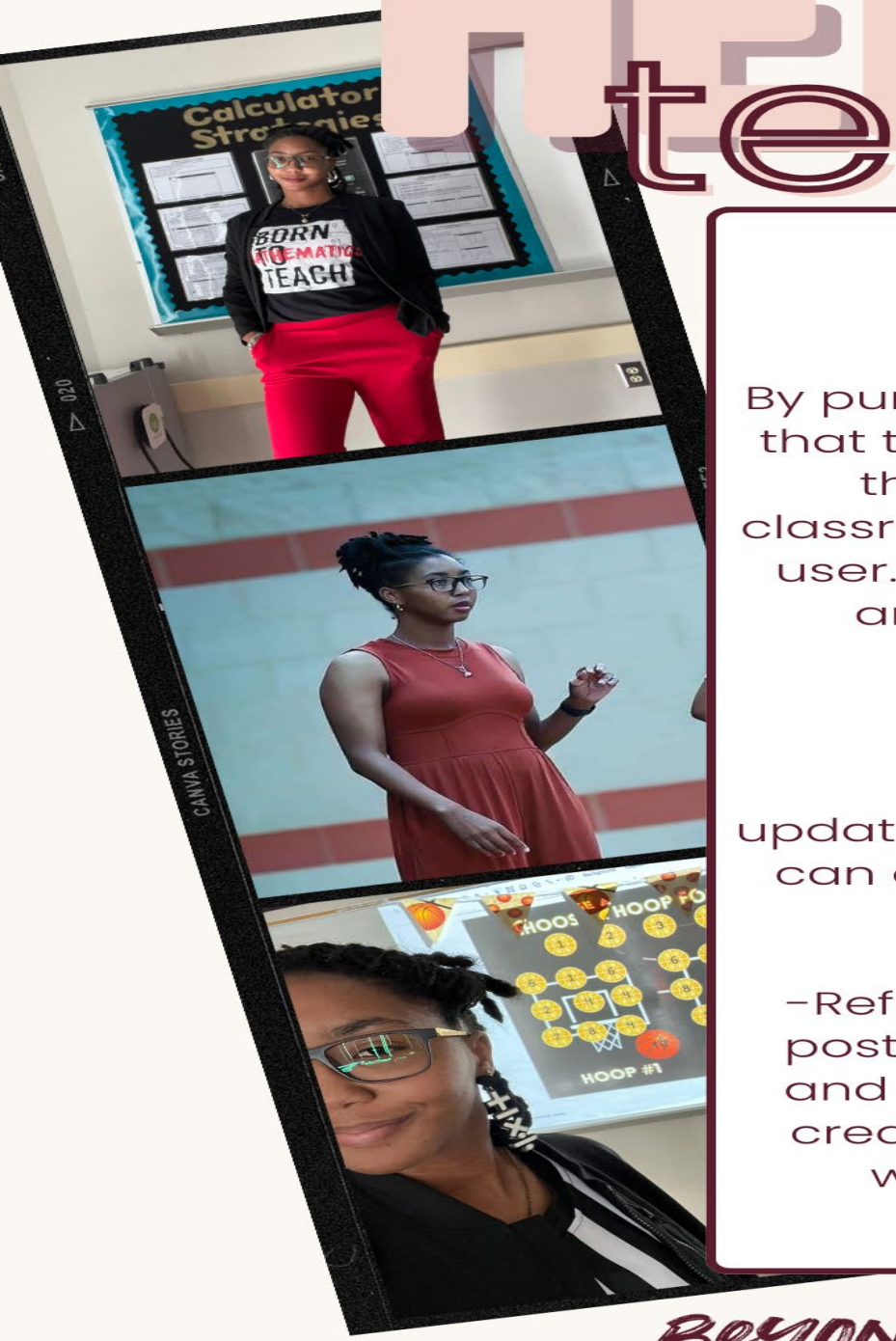

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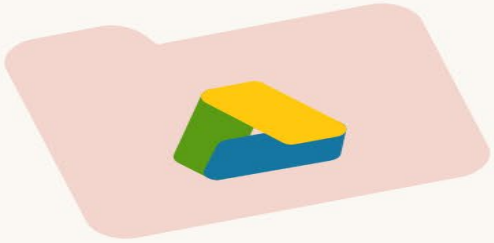

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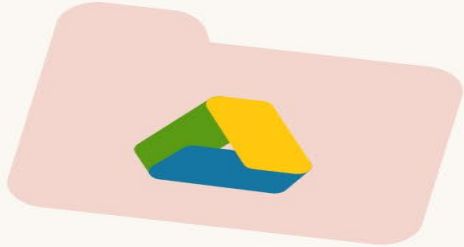

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