Pick up the Graphing Calculator

Warm-Up Wkst on the answer key desk

Warm -Up

EXAMPLE 3 Check Your Progress

Write $3x + 2y = 6$ in slope-intercept form.

$-3x \quad -3x$

$$\frac{2y}{2} = \frac{-3x+6}{2}$$

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

Your Turn: Write $4x - y = 8$ in slope-intercept form.

$-4x \quad -4x$

$$\frac{-y}{-1} = \frac{-4x+8}{-1}$$

$$y = 4x - 8$$

Graphing with Standard Form

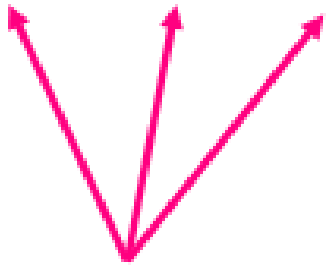
Goals aligned to the Common Core Standards:

- You will create linear functions and inequalities from a sequence, table, or a given relationship.

- You will be able to describe key features of a linear function.

The standard form of a linear equation is

$$Ax+By=C$$



*Integers (no fractions or decimals)
*The x term is positive
*Greatest common factor of 1
*No exponents larger than 1

Example of an equation in standard form:

$$3x+2y=5$$

$$A=3,\ B=2,\ C=5$$

Options for Graphing with Standard form:

1) Solve for y
(put in slope intercept form)

2) Graph using x- and y- intercepts

Reminder:
Solving for Slope-intercept form

$$3x + y = 6$$

$$-3x \qquad -3x$$

$$y = -3x + 6$$

$3(0) + y = 6$

$y = 6$

$(0, 6)$ y-intercept

$3x + 0 = 6$

$\frac{3x}{3} = \frac{6}{3}$

$x = 2$

$(2, 0)$ x-intercept

Now you can graph it!

A linear equation can also be graphed on a coordinate plane using the x & y- intercepts

STANDARD FORM TASK!

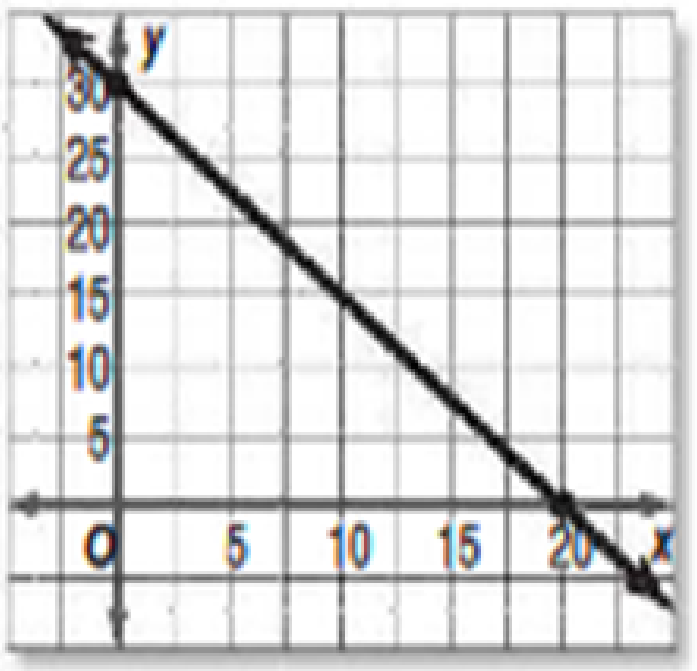
(x, 0) ↑ plug in y=0

The x-intercept (also known as a zero/solution) is the x-value where the equation crosses the x-axis.

(0, y) plug in x=0

The y-intercept is the y-value where the equation crosses the y-axis.

Find the *x*- and *y*-intercepts of the line graphed at the right.



A *x*-intercept is 0; *y*-intercept is 30.

B *x*-intercept is 20; *y*-intercept is 30.

C *x*-intercept is 20; *y*-intercept is 0.

D *x*-intercept is 30; *y*-intercept is 20.

The x-intercept's point is (20,0)

The y-intercept's point is (0, 30)

Notice the zero in both points. Why will this always be the case?

Find the x- and y-intercepts from the table.

Draining a Pool	
Time (h)	Volume (gal)
x	y
0	10,080
2	8640
6	5760
10	2880
12	1440
14	0

y-int

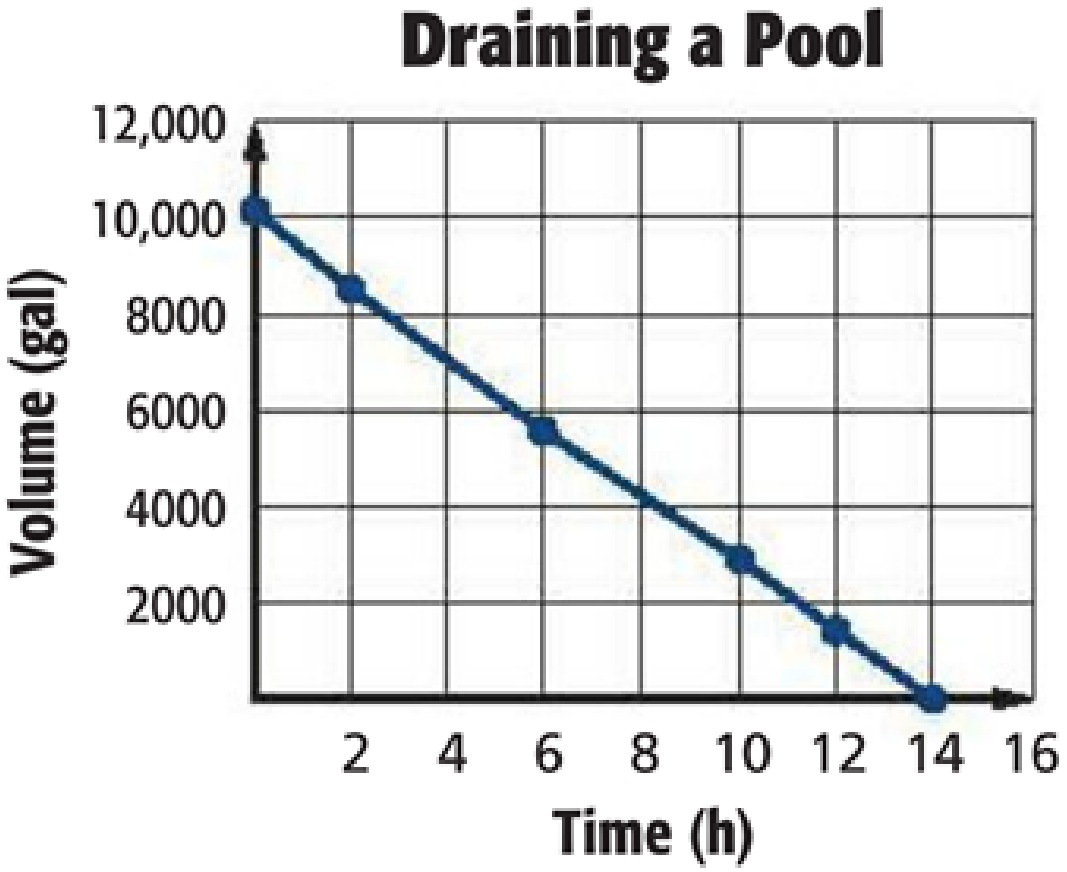
x-int

How did you determine the x & y-intercepts?

y=0

x=0

Describe what the intercepts mean in this situation.



y-int: Volume started in pool

x-int: Time it took to drain the pool

Graphing with x- and y-intercepts

x-intercept: What is the value of y?

0

y-intercept: What is the value of x?

0

What are the x & y-intercepts of this equation?

$-x + 2y = 8$

x-int: $y=0$

$(-8,0)$

$-x+2(0)=8$

$-x=8$

$x=-8$

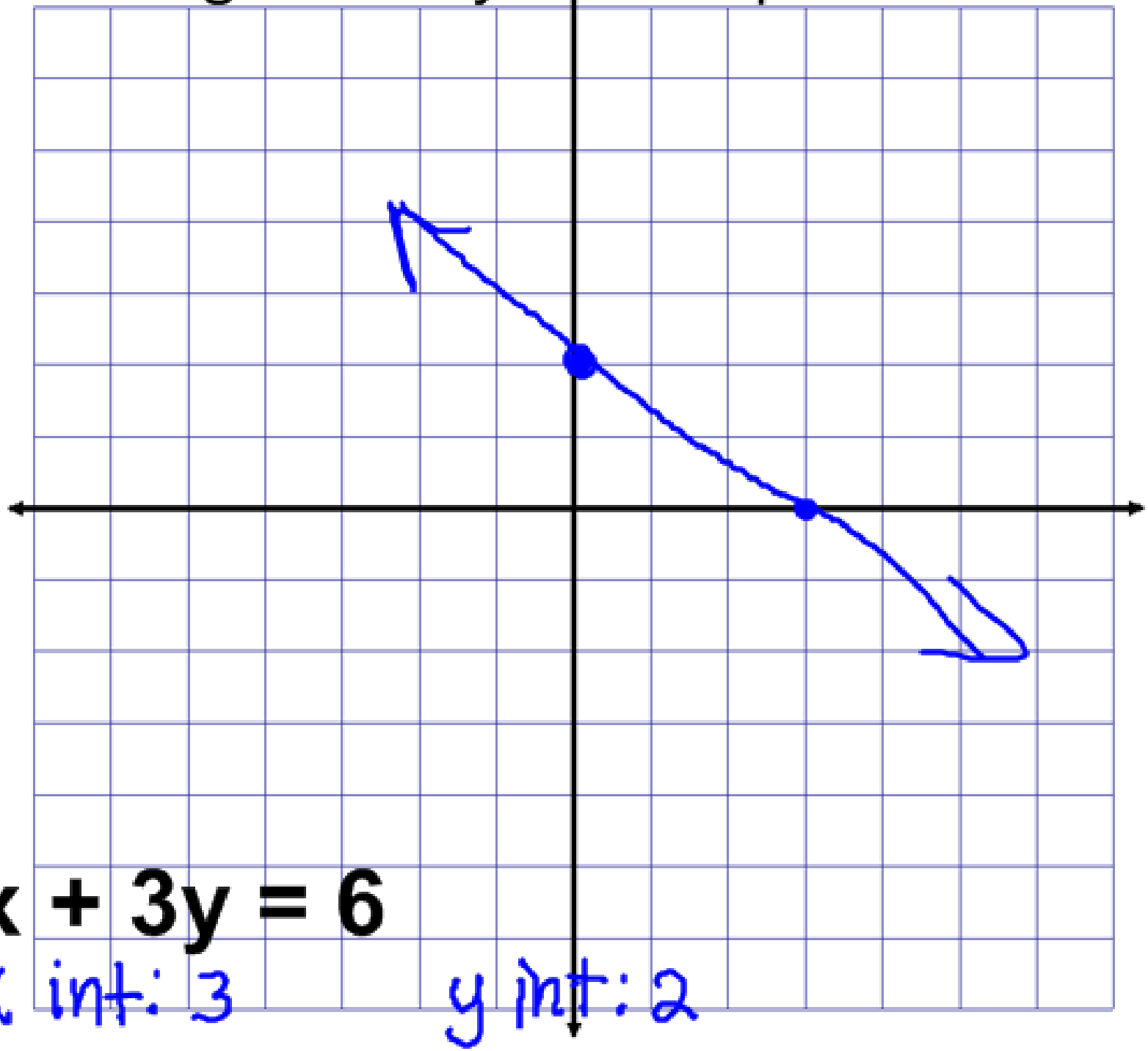
y-int: $x=0$

$(0,4)$

$0+2y=8$

$y=4$

Graph using x- and y- intercepts.



2x + 3y = 6

x int: 3

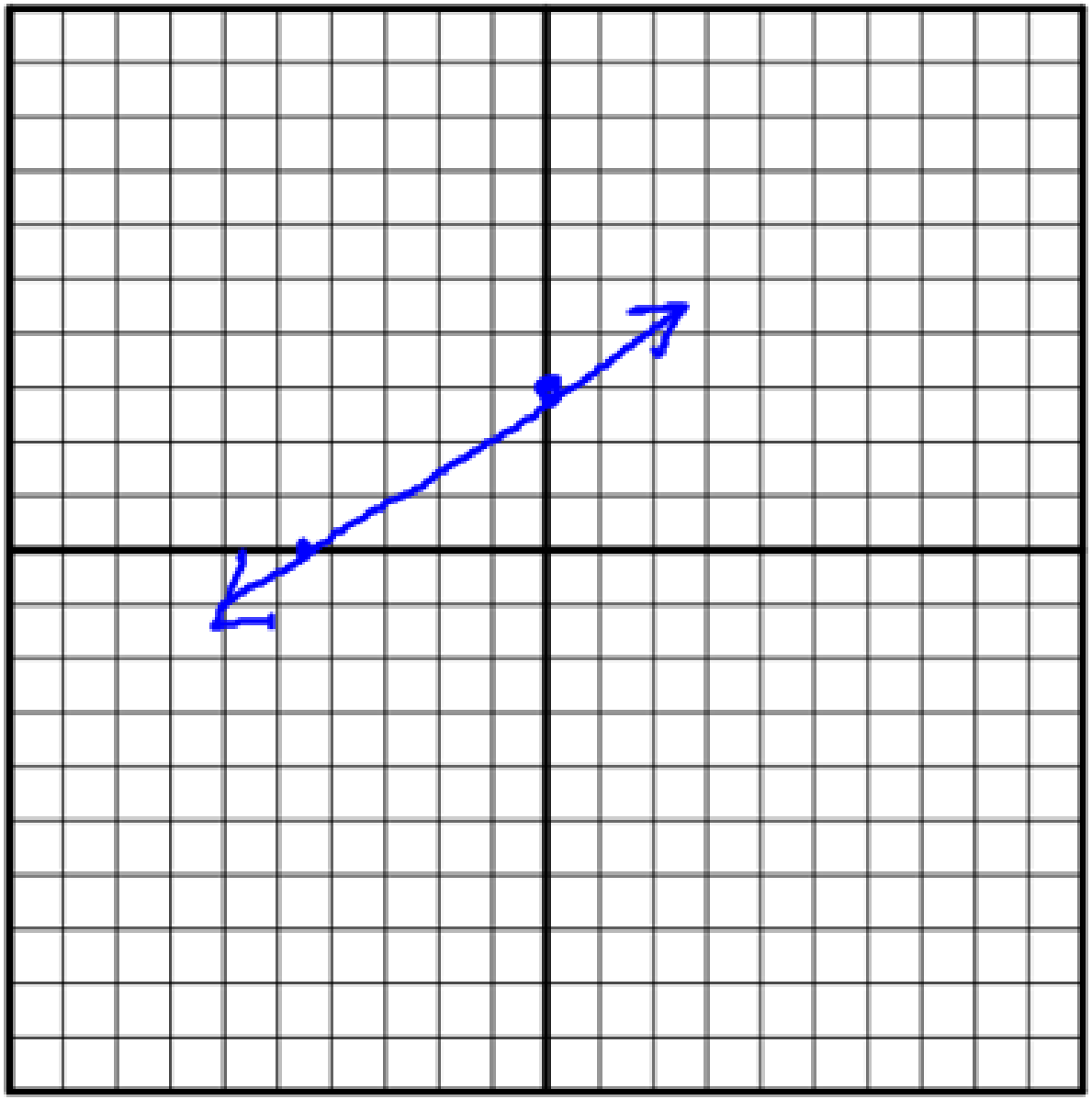
y int: 2

graph

$2x - 3y = -9$

x int: -4.5

y int: 3

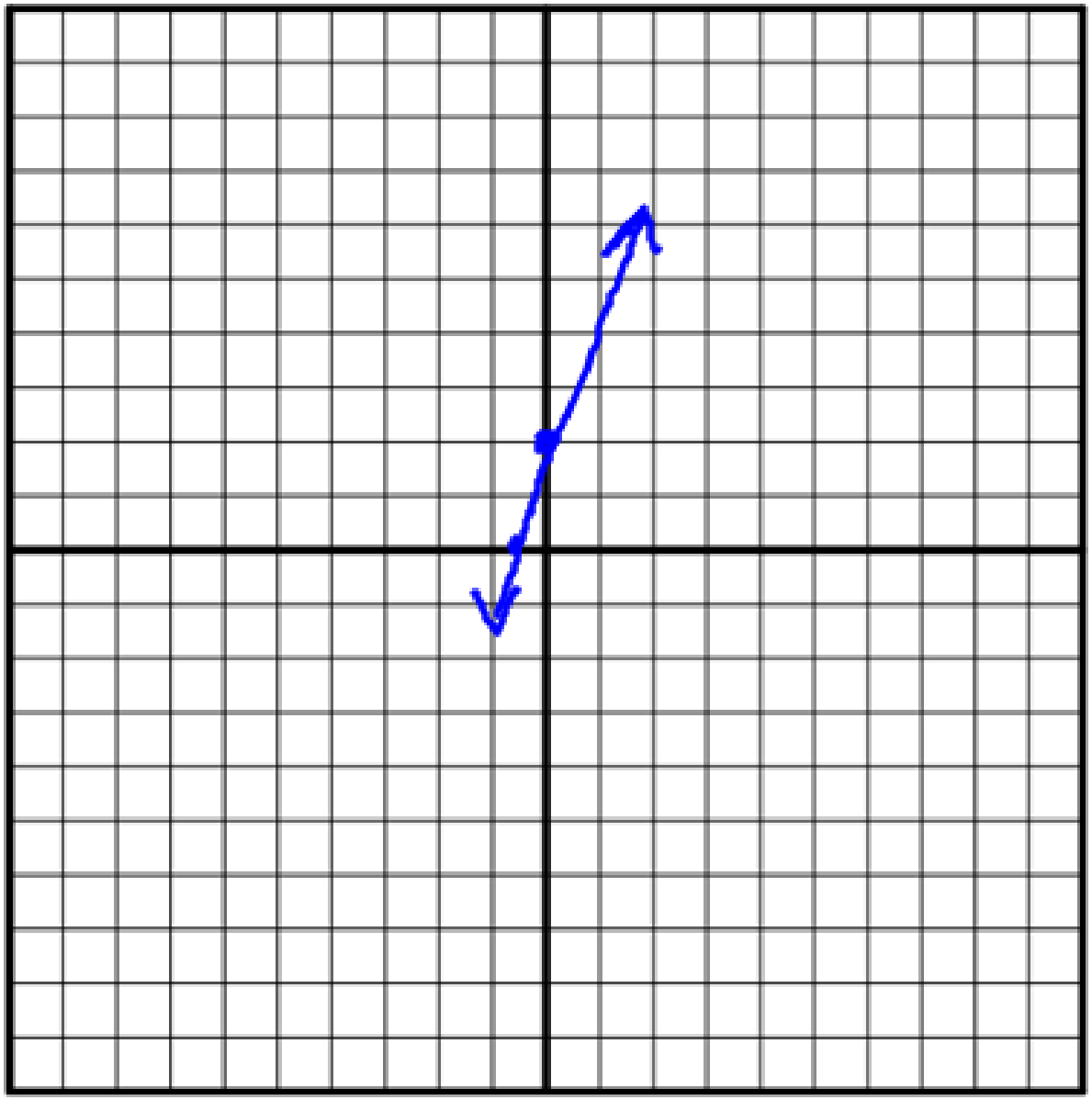


graph

$4x - y = -2$

x int: $-\frac{1}{2}$

y int: 2



Determine which ordered pairs are part of the solution set for each inequality. $3x + 4y < 7$

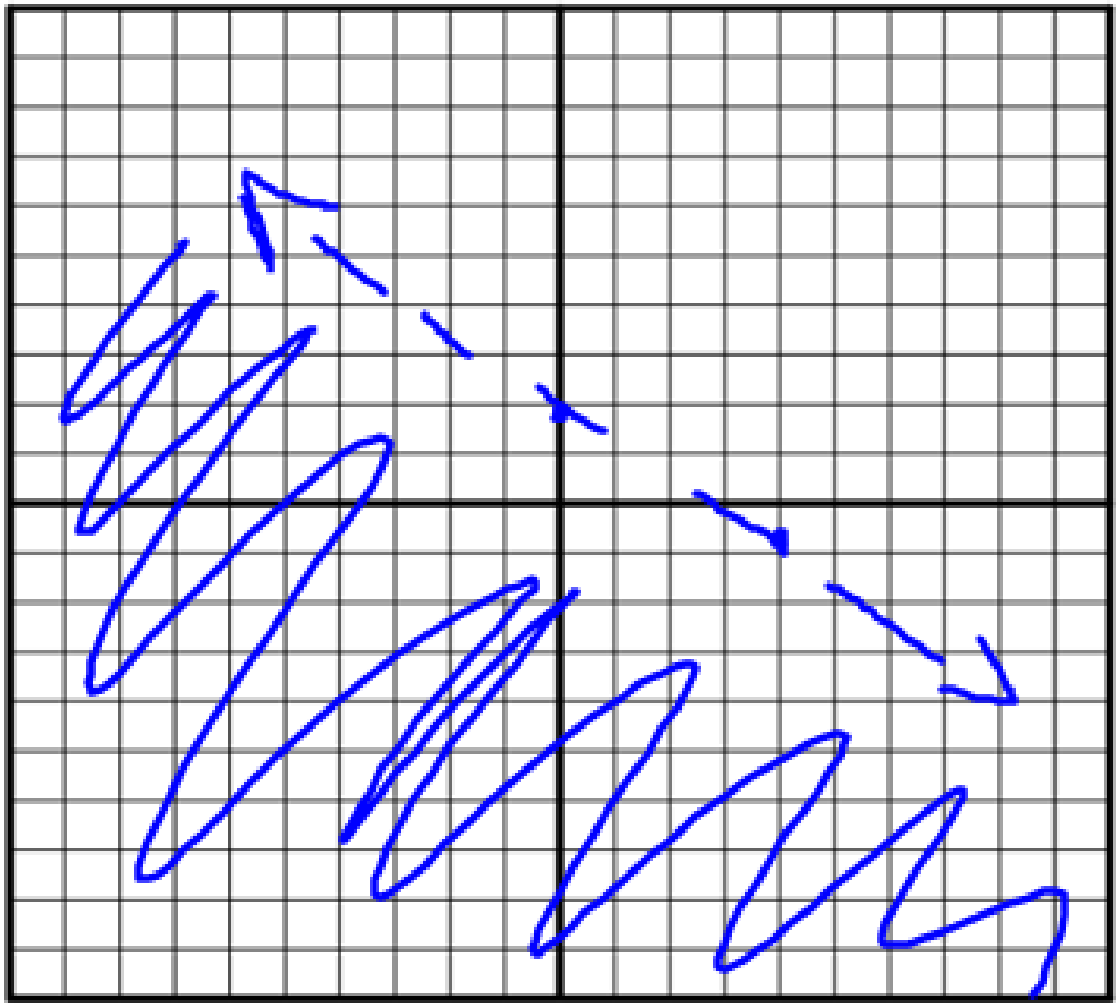
$\{(1,1), (2,-1), (-1,1), (-2,4)\}$

yes yes yes no

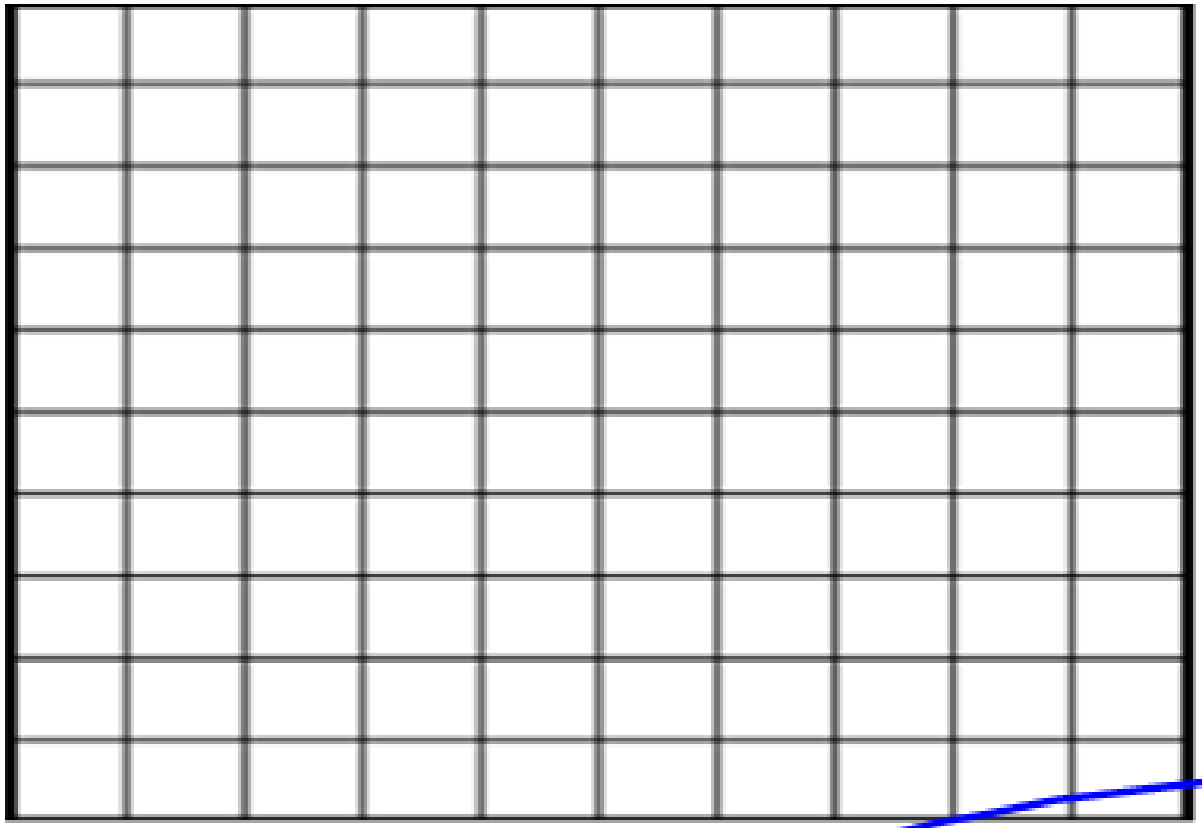
$3x+4y<7$

$4y<-3x+7$

$y<-\frac{3}{4}x+\frac{7}{4}$



Coach McMahan wants to take her soccer team out for pizza and soft drinks after the last game of the season. She doesn't want to spend more than $60. Write an inequality that represents this situation and graph the solution set.



$12L + 3S < 60$

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- You can describe key features of a linear function.

Homework!!!

Standard Form Wkst