Today's Plan:

Learning Target (standard): I will graph linear inequalities on a coordinate plane. I will describe the meaning of the solution set.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

NAME _____ #67

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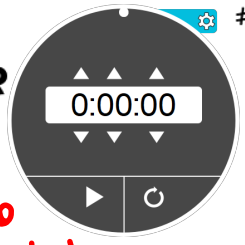


1.) Solve $2x - 4(x + 8) = -2x + 6$.

$2x-4x-32=-2x+6$

$-2x-32=-2x+6$

$-32\neq 6$

no solution

2.) Solve the system $y = 2x + 3$ (any method) $y = x + 4$

3.) Simplify $3/4 + 5/8$. $\frac{3\cdot 2}{4\cdot 2}+\frac{5}{8}=\frac{6}{8}+\frac{5}{8}=\frac{11}{8}$

$y = 2x + 3$

$y = x + 4$

$x+4=2x+3$

$-x+4=3$

$-x=-1$

$x=1$

$y=1+4$

$y=5$

independent

$(1, 5)$

Graph using the slope-intercept method.

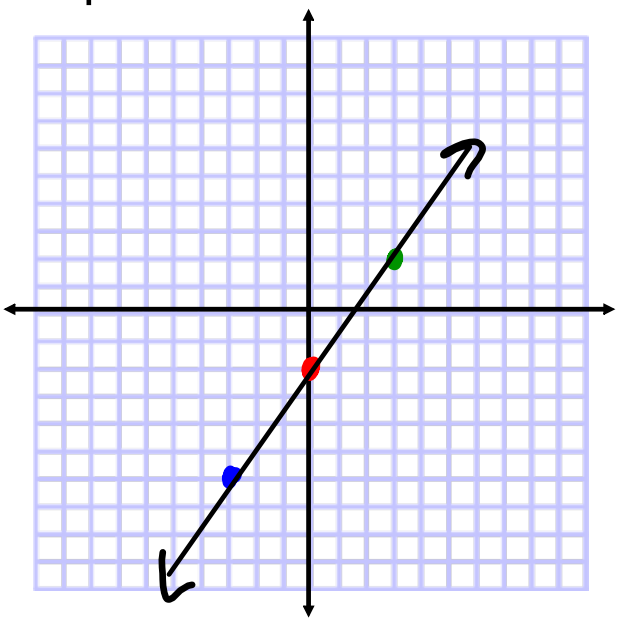
$$4x - 3y = 6$$

$\frac{-3y}{-3} = \frac{-4x}{-3} + \frac{6}{-3}$

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

$m = \frac{4}{3}$ ↗

$I_y: (0, -2)$



Graph using the slope-intercept method.

$$-2x - 5y = -15$$

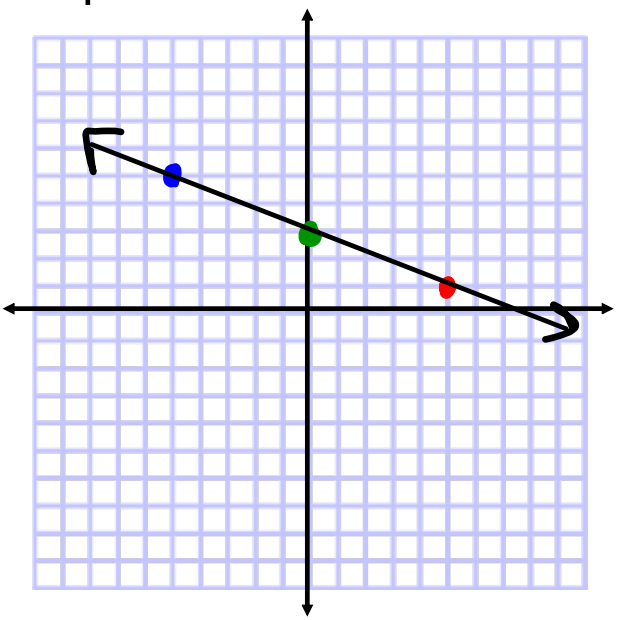
$+2x \qquad +2x$

$\frac{-5y}{-5} = \frac{2x}{-5} - \frac{15}{-5}$

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

$m = -\frac{2}{5}$ ↘

$I_y: (0, 3)$



Graph using the slope-intercept method.

$$4x - 6 = 6$$

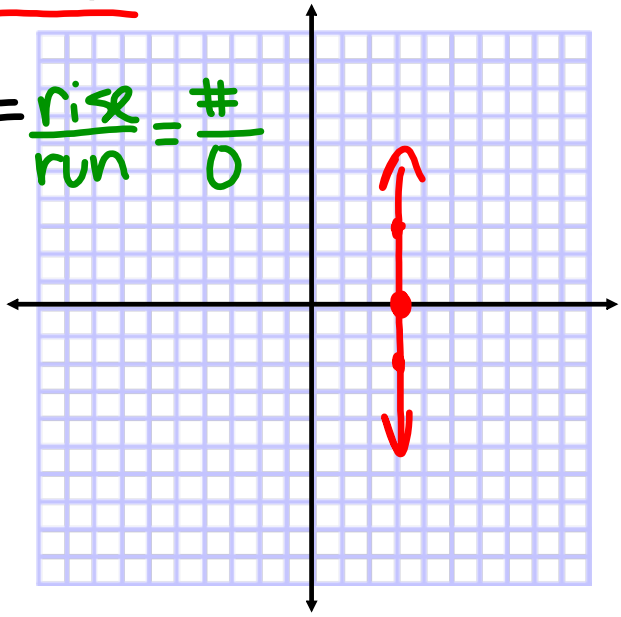
$4x = 12$

$x = 3$

$I_x: (3, 0)$

$m = \text{und}$

$m = \frac{\text{rise}}{\text{run}} = \frac{\#}{0}$



Graph using the slope-intercept method.

$$3x + 4y = 12$$

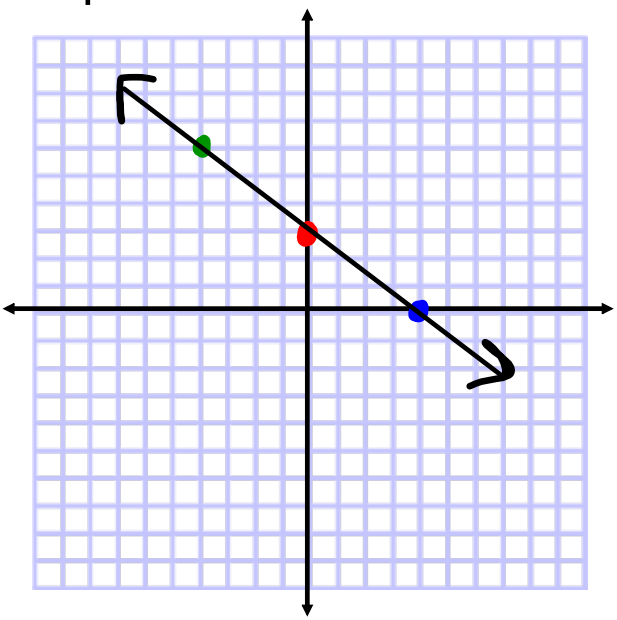
$-3x \quad -3x$

$$\frac{4y}{4} = \frac{-3x}{4} + \frac{12}{4}$$

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

$m = -\frac{3}{4}$

$I_y: (0, 3)$



Graph using the slope-intercept method.

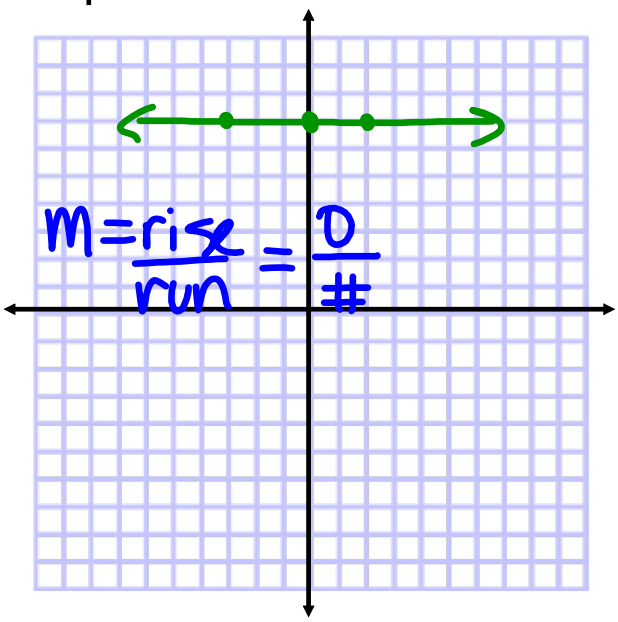
$$-2y+5=-9$$

$-2y=-14$

$y=7$

$m=0$

y-Int: $(0,7)$



Linear Inequalities in Two Variables:

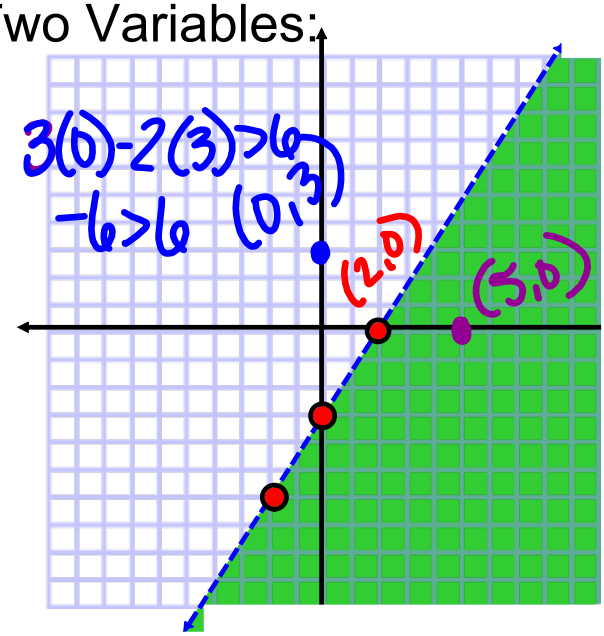
$$3x-2y>6$$

$3(5)-2(0)>6$

$15>6$ ✓

$3(2)-2(0)>6$

$6>6$



Graphing Linear Inequalities:

- Linear inequalities in two variables result in the graphs of lines on the Cartesian plane that require shading
- The shaded area is the set of ordered pairs that make the inequality statement true
  - This is called the solution set and includes the line itself if the inequality has an equal to symbol
  - The solution set does NOT include the line itself if the inequality does NOT have an equal to symbol

Graphing Linear Inequalities:

- In order to graph these, put the inequality into slope-intercept form $y = mx + b$ even though it is not an equation
  - If you divide by a negative #, flip the inequality symbol
- Determine the slope of the line and the *y-intercept*
- Decide if the line is solid ($\leq$ or $\geq$) - line is part of the solution set
- Decide if the line is dotted ($<$ or $>$) - line is not part of the solution set
- Graph the line

Graphing Linear Inequalities:

- Once the line has been graphed, look at the inequality symbol in the slope-intercept form of the line to decide where the shading will go
- If the inequality is greater than (> or ≥), shade above the line and its y-intercept
- If the inequality is less than (< or ≤), shade below the line and its y-intercept

Graph the linear inequality.

$$2x - y < -4$$

$-y < -2x - 4$

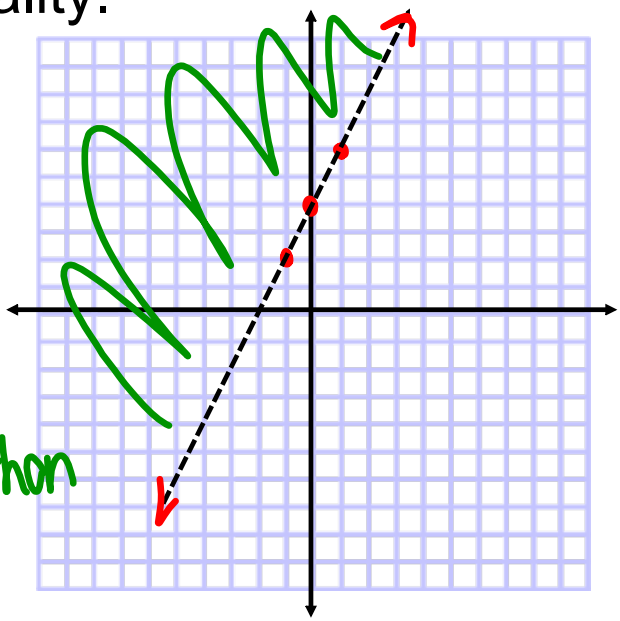
$y > 2x + 4$

dotted

bigger than

$m = 2$

$I_y: (0, 4)$



Graph the linear inequality.

$x + y < 1$

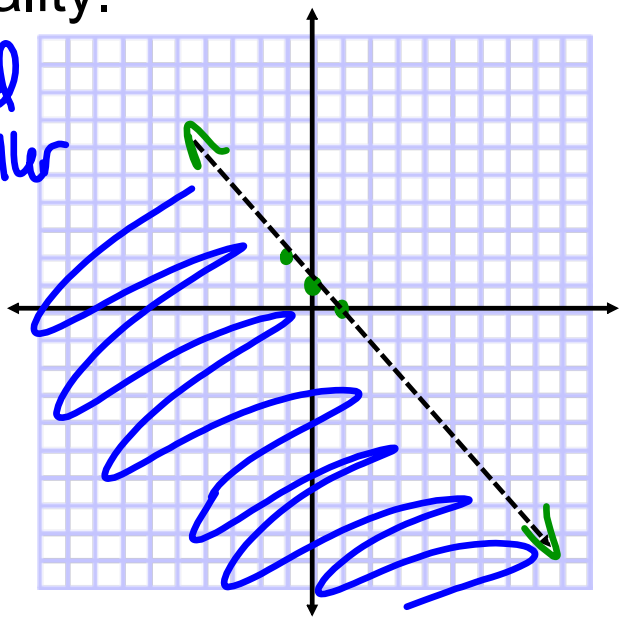
dotted

smaller

$y < -x + 1$

$m = -1$

$I_y: (0,1)$



Graph the linear inequality.

$2x - 3y \geq 6$

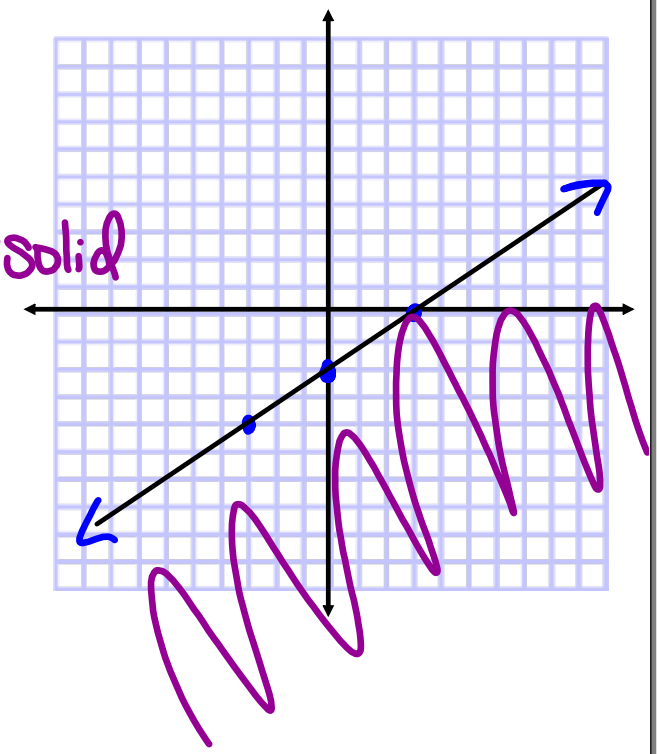
$-3y \geq -2x + 6$

solid

$y \leq \frac{2}{3}x - 2$

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

$I_y: (0,-2)$



Assignment:

Graphing Linear Inequalities 2

#1-10