

Guided Notes: Graphing Equations and Inequalities

Graphing Equations –

Slope-Intercept Form: $y = mx + b$

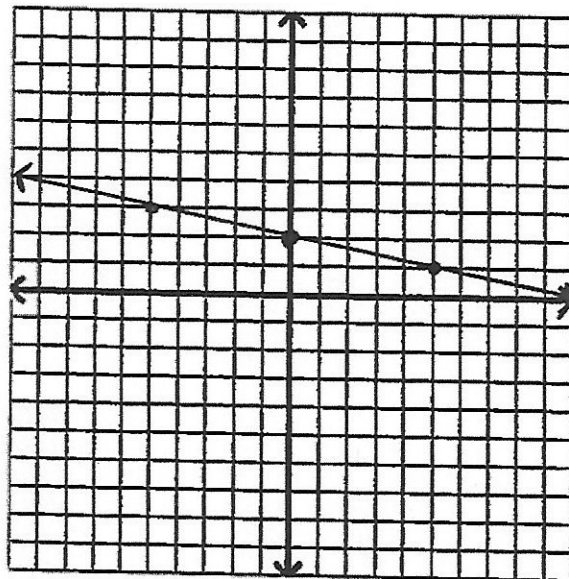
Standard Form: $Ax + By = C$

Ex 1.

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

slope: $-\frac{1}{5}$

y-intercept: $(0, 2)$



Ex 2.

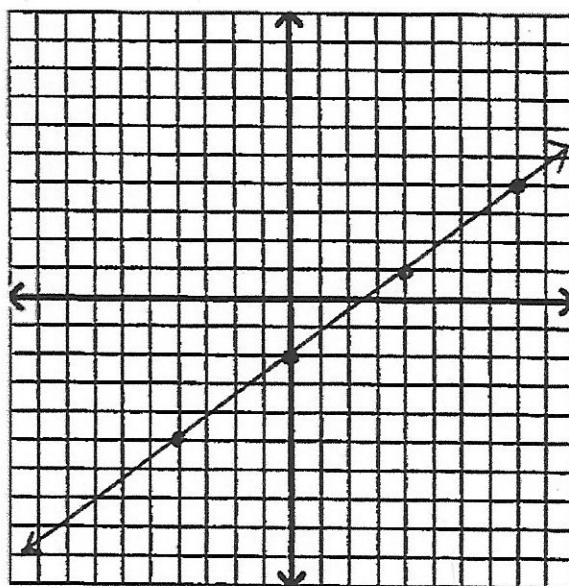
$$\begin{array}{rcl} 3x - 4y & = & 8 \\ -3x & & -3x \end{array}$$

$$\frac{-4y}{-4} = \frac{-3x + 8}{-4}$$

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

slope: $\frac{3}{4}$

y-intercept: $(0, -2)$



Graphing Inequalities -

Ex. $3x - 2y \leq -6$

Rewrite in slope-intercept...

$$\begin{array}{rcl} 3x - 2y & \leq & -6 \\ -3x & & -3x \end{array}$$

$$\frac{-2y}{-2} \leq \frac{-3x - 6}{-2}$$

$$y \geq \frac{3}{2}x + 3$$

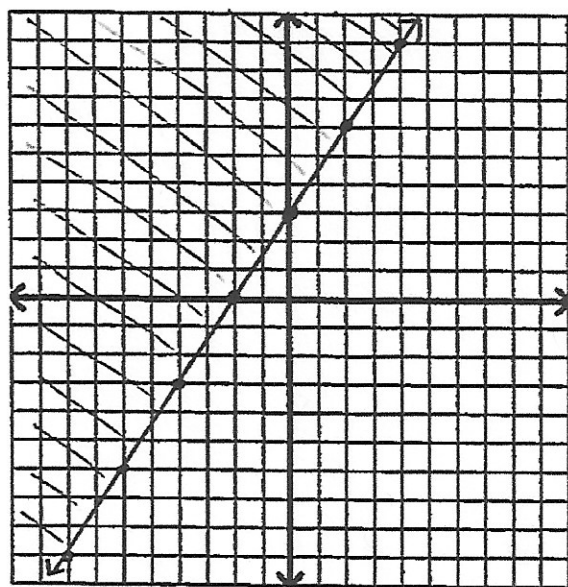
* When dividing by a negative, flip the inequality.

Slope: $\frac{3}{2}$

y-intercept (0, 3)

* solid line when you have $\geq, \leq$

Since y is "greater,"
we will shade above
the line.



Name: _____ Graphing Equations

Use the attached graph paper to graph #1-4.

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

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

3. $2x - 3y \leq -9$

4. $4x + 2y > -2$

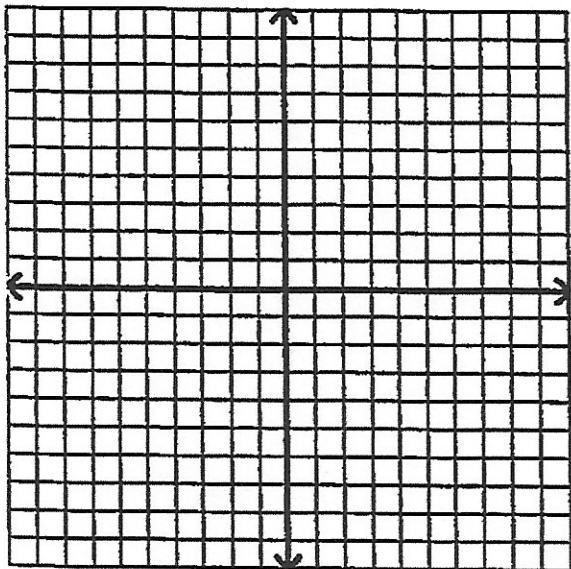
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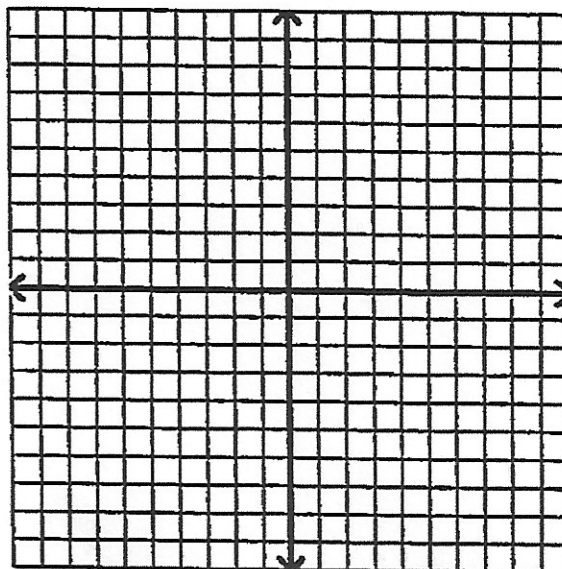
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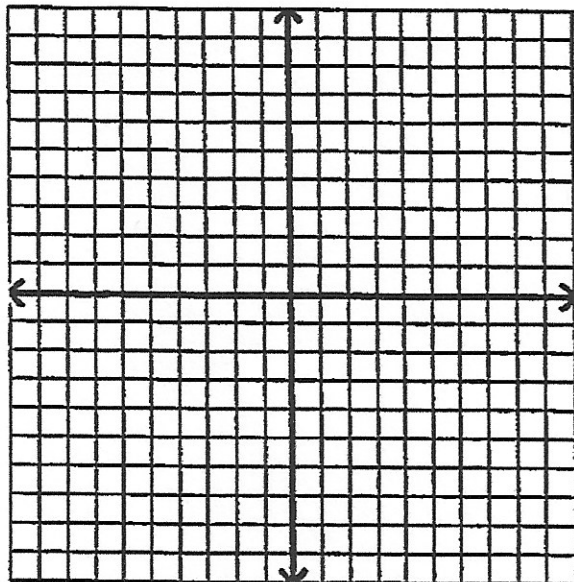
1.)



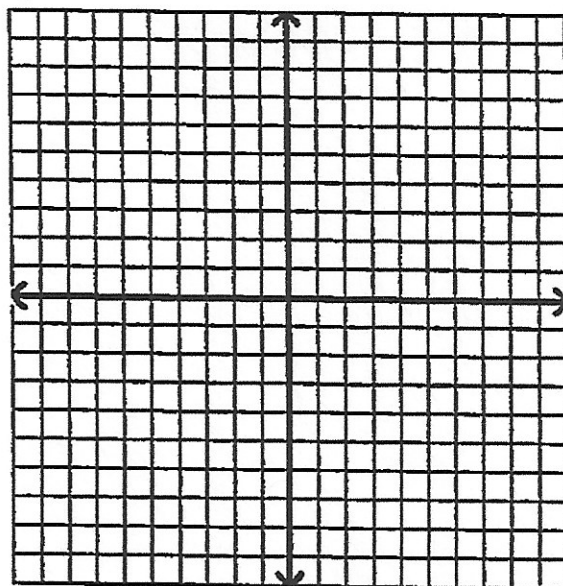
2.)



3.)



4.)



Guided Notes: Writing the Equation of a Line

From 2 points-

(8, -6) (-4, 0)

$$m = \frac{0 + 6}{-4 - 8}$$

* minus a negative
changes to a plus

$$m = \frac{6}{-12}$$

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

Choose one point...

$$(y + 6) = -\frac{1}{2}(x - 8) \quad \text{+ Distribute}$$

$$y + 6 = -\frac{1}{2}x + 4$$

-6 -6

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

Slope

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Point-Slope

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

Slope-Intercept

$$y = mx + b$$

Write the equation in Slope-Intercept Form for each pair of points.

1. (-2, -6), (4, 6)

3. (-4, 12), (-2, -4)

2. (-8, -5), (-3, 10)

4. (4.6, 3.4), (2.2, 2.8)