

11/10 Algebra-Downing

Go over HW

Linear Inequalities

$$\text{Ex) } -3(x-2) > 12 \rightarrow \begin{array}{r} -3x+6 > 12 \\ -6 \quad -6 \end{array}$$



$$\begin{array}{r} -3x > 6 \\ -3 \quad -3 \end{array}$$

$$x < -2$$

★ Flip sign when you divide by a negative

Solve for y, then graph

$$\text{Ex) } \begin{array}{r} 2x - y + 4 = 0 \\ -4 \quad -4 \end{array}$$

$$\begin{array}{r} 2x - y = -4 \\ -2x \quad -2x \end{array}$$

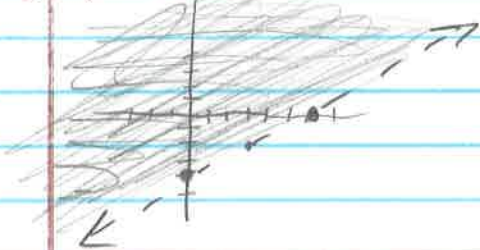
$$\cancel{-y} = \frac{-2x-4}{-1} \quad \frac{-4}{-1}$$

$$y = 2x + 4$$



A linear inequality is similar to a linear equation, but the equal sign is replaced with an inequality symbol. A solution of a linear inequality is any ordered pair that makes the inequality true

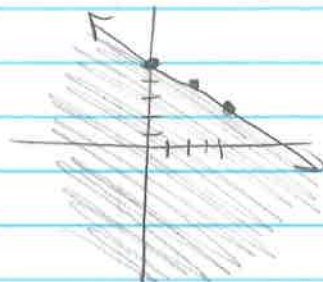
$$\text{Ex) } y > \frac{2}{3}x - 4$$



$$\text{Ex) } \begin{array}{r} -2x - 4y \geq -20 \\ +2x \quad +2x \end{array}$$

$$\begin{array}{r} -4y \geq 2x - 20 \\ -4 \quad -4 \end{array}$$

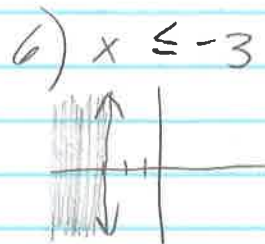
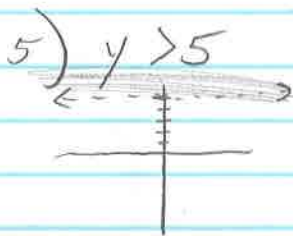
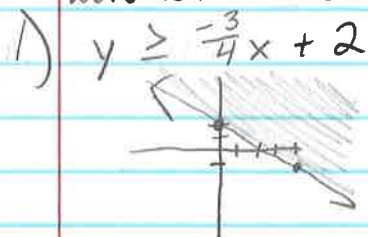
$$y \leq -\frac{1}{2}x + 5$$



Steps to Graph Linear Inequalities

1. Get y by itself (slope-intercept form) * Flip sign when mult. or div. by a neg.
2. Graph the line
 - Dashed line if $<$ or $>$
 - Solid line if \leq or \geq
3. Shade the graph
 - Shade above y -int when $>$ or \geq
 - Shade below y -int when $<$ or \leq

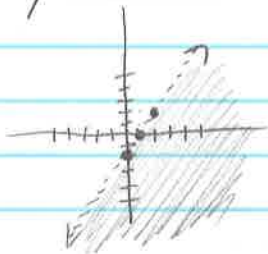
Worksheet - Notes



12) $\frac{2x - y > 2}{-2x \quad -2x}$

$\frac{y > -2x + 2}{-1 \quad -1}$

$y < 2x - 2$



HW Linear Inequalities WS