Name: _____ Date: _____

Example Mac and Justin manufacture trail mix. Their supplier charges $25/kg for mixed nuts and $8/kg for chocolate covered craisins.

a. If Mac and Justin have $200 to spend on supplies, what mixtures could they make?

Nuts only: $\frac{\$25}{kg} \times 8\ kg = \$200$

Craisins only: $\frac{\$8}{kg} \times 25\ kg = \$200$

50/50: $4\ kg \times \frac{\$25}{kg} = \$100$

$12.5\ kg \times \frac{\$8}{kg} = \$100$

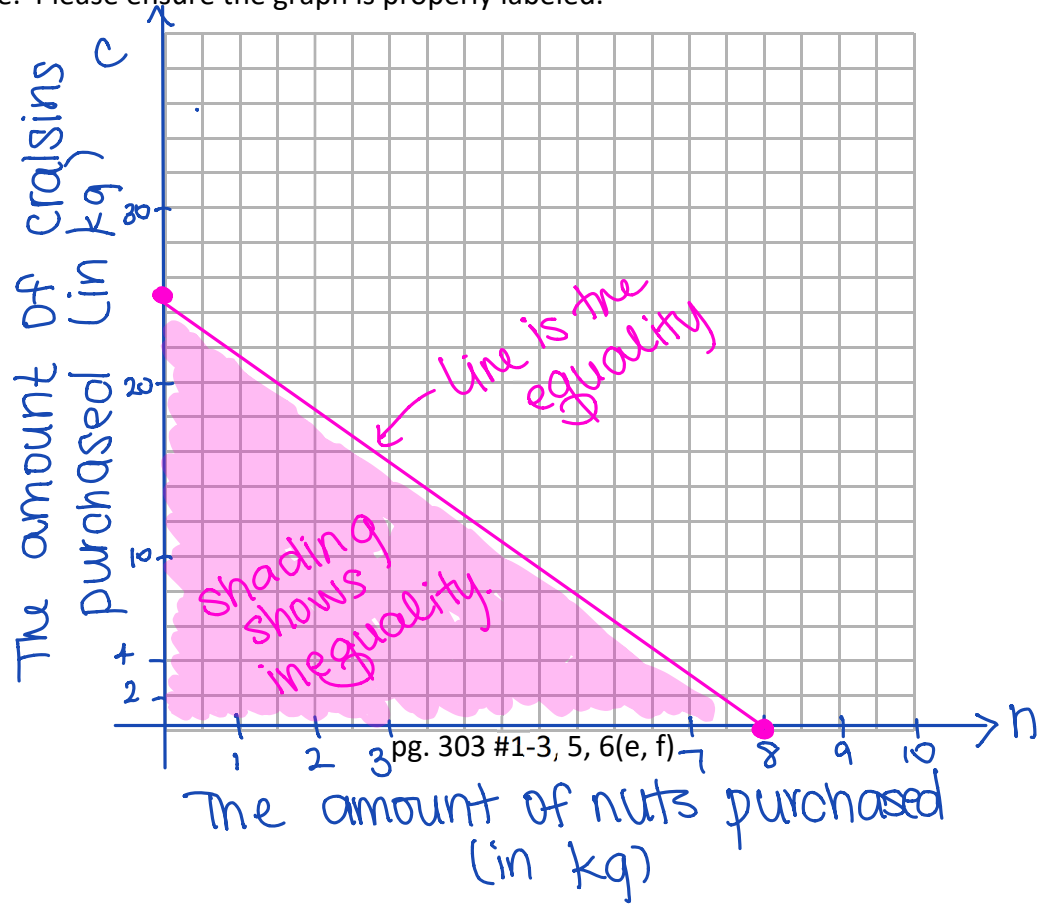
b. Can you make an equation to represent this situation?

Let n = the amount of nuts bought.
c = the amount of craisins bought.

$$25n + 8c \leq 200$$

↑ we can't spend more than $200.

c. Graph the equation from b), let nuts be the independent variable and raisins be the dependent variable. Please ensure the graph is properly labeled.



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Quiz: Next Day!

d. What is the domain and range of the graph you drew?

Domain $0 \le n \le 8$ horizontal axis

Range $0 \le C \le 25$ vertical axis.

e. What does each region of the graph represent? Above the line? Below the line?

If we were able to spend more than $200

We have spent less than $200

f. The solution set is:

① $0 \le 25n + 8c \le 200$

② $0 \le n \le 8$

$0 \le C \le 25$

either is fine.

Example Graph each of the following inequalities:

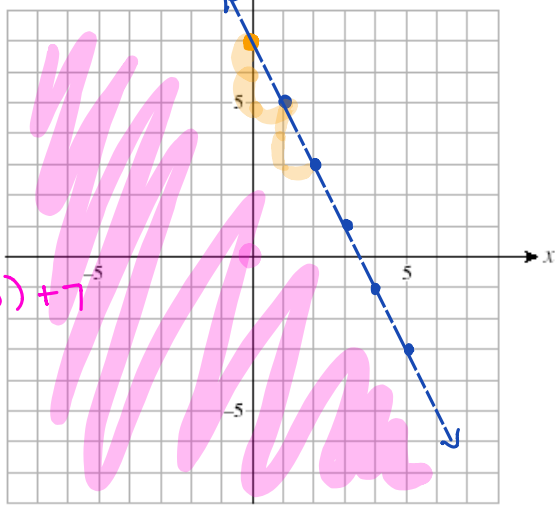
a) $y > -2x + 7$ slope y-int.

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

$0 > -2(0) + 7$

$0 > 0 + 7$

$0 > 7$ ✓



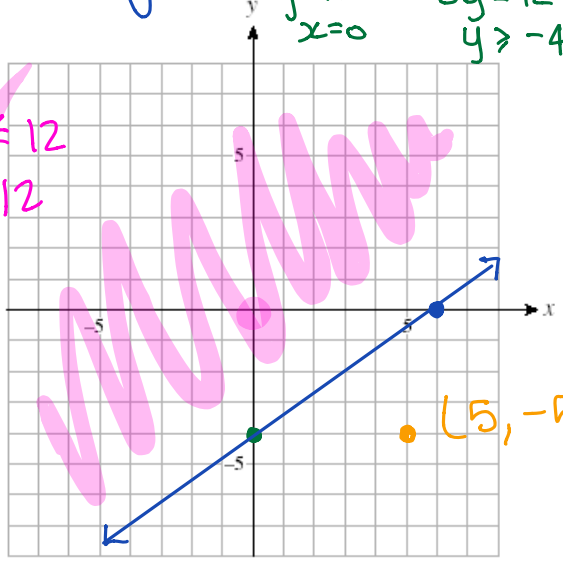
b) $2x - 3y \le 12$

x-int $y=0$ $2x \le 12$ $x \le 6$

y-int $x=0$ $-3y \le 12$ $y \ge -4$

$0 - 0 \le 12$

$0 \le 12$ ✓



(5, −5)

$2(5) - 3(-5)$

$10 + 15 \not\le 12$

Assignment pg. 303 #1-3, 5, 6(e, f)

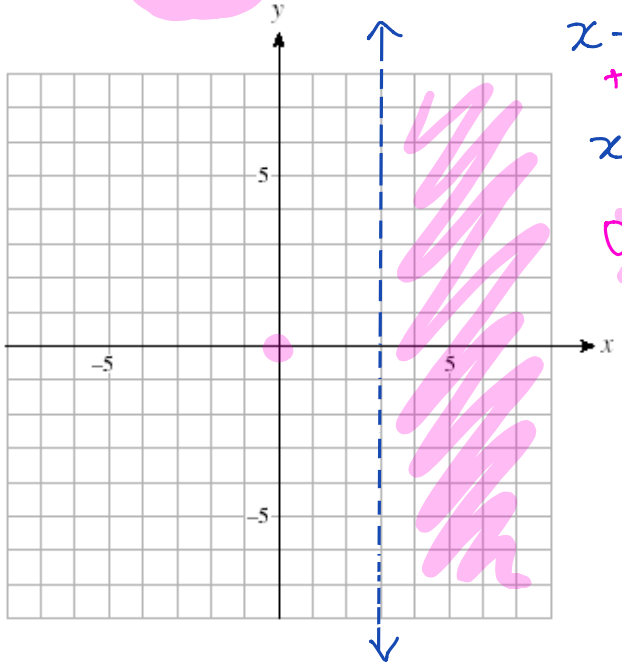
Quiz: Next Day!

Steps to graphing an inequality:

1. Graph the line (slope-int, slope-pt, standard)
   - if it is a strict inequality, use a dashed line
   - Else, use a solid line.
2. Choose and test a test point that is not on the line and shade based on whether it's true or false.

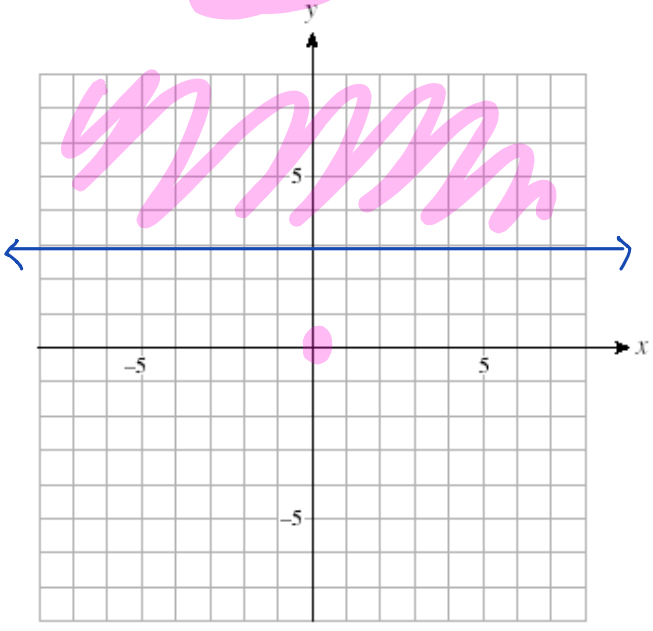
Ex. #3 Graph the solution set for each linear inequality.

a) $\{(x,y)|x-3>0, x\in\mathbb{R}, y\in\mathbb{R}\}$



$x-3>0$
$+3\ +3$
$x>3$
$0>3$ ✗

b) $\{(x,y)|-2y+6\leq 0, x\in\mathbb{R}, y\in\mathbb{R}\}$



$-2y+6\leq 0$
$-6\ \ -6$
$\frac{-2y}{-2}\leq\frac{-6}{-2}$
$y\geq 3$

or

$-2y+6\leq 0$
$+2y\ \ +2y$
$\frac{6}{2}\leq\frac{2y}{2}$
$3\leq y$
$0\geq 3$ ✗