

**Your Turn**

Feb. 5, 2020

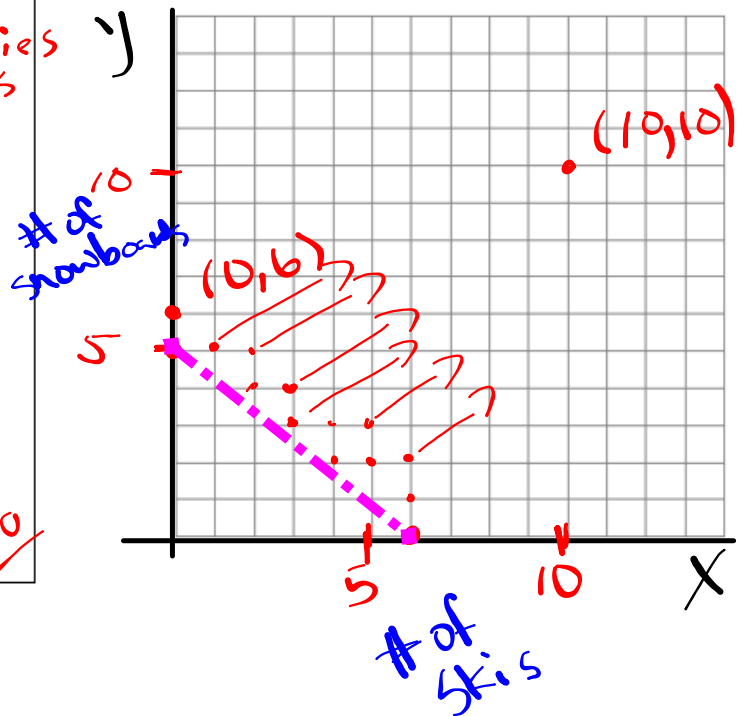
A sports store has a net revenue of \$100 on every pair of downhill skis sold and \$120 on every snowboard sold. The manager's goal is to have a net revenue of more than \$600 a day from the sales of these two items. What combinations of ski and snowboard sales will meet or exceed this daily sales goal?

**Step 1:** Define your variables  
 x: # of pairs of skis  
 y: # of snowboards  
 $(x,y) \quad x \in W, y \in W$

**Step 2:** Determine the inequality.  
 $100x + 120y > 600$   
 $y = 5 \quad x = 6$

**Step 3:** Graph your inequality. Label your graph.

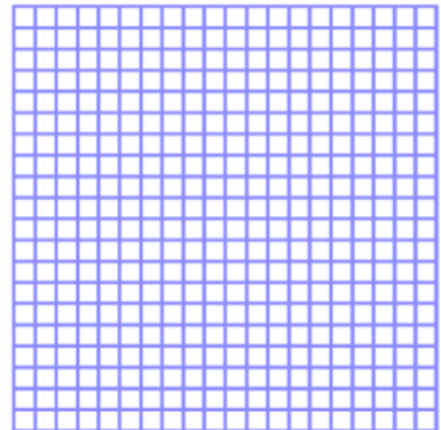
**Step 4:** Identify two coordinates that satisfy your inequality and prove why it satisfies the inequality.  
 $100(10) + 120(10) > 600$   
 $2200 > 600 \checkmark$



**PRACTICE**

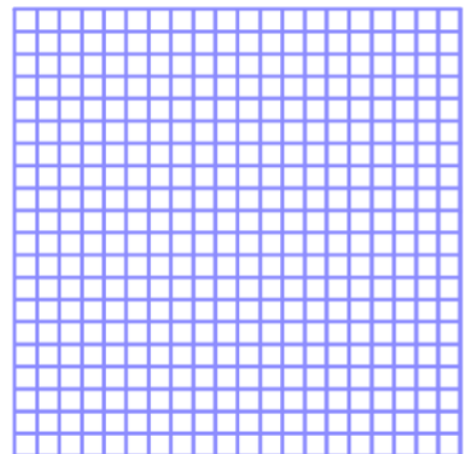
1. For a school fundraiser, the drama students are selling white and dark chocolates. The goal is to sell at least 70 kg of chocolates, in total, and they need to determine how many kilograms of each to buy.

- a) Given the inequality  $x + y \geq 70$  :
  - i) Define the variables: x: \_\_\_\_\_  
y: \_\_\_\_\_
- b) Graph the situation and appropriately label your graph.
- c) State a possible solution and verify your solution.



3. Ben and Andrea volunteer at a seniors' center. Together they volunteer, at most, 30 hours each week and work only a whole number of hours.

- a) Given the inequality  $x + y \leq 30$  :
  - i) Define the variables: x: \_\_\_\_\_  
y: \_\_\_\_\_
- b) Graph the situation and appropriately label your graph.
- c) State a possible solution and verify your solution.



PRACTICE

Solutions:

1. For a school fundraiser, the drama students are selling white and dark chocolates. The goal is to sell at least 70 kg of chocolates, in total, and they need to determine how many kilograms of each to buy.

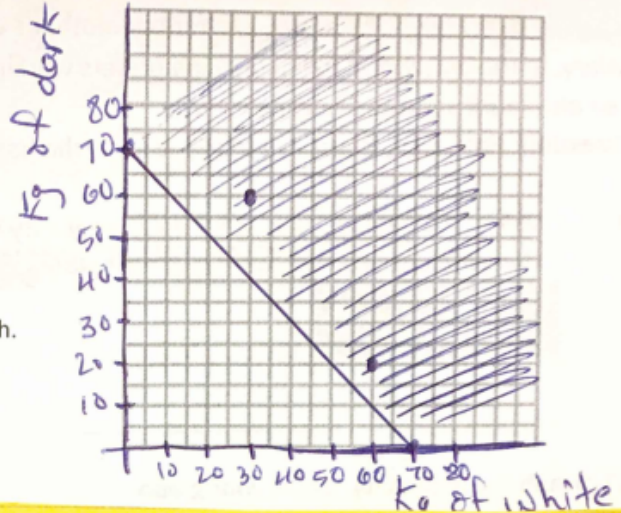
a) Given the inequality  $x + y \geq 70$ :  $x \geq 0, y \geq 0$

i) Define the variables:  $x$ : Kg of white  
 $x \in \mathbb{R}, y \in \mathbb{R}$   $y$ : Kg of dark

b) Graph the situation and appropriately label your graph.

c) State a possible solution and verify your solution.

$(30, 60) \rightarrow 30 + 60 \geq 70? \checkmark$   
 $(60, 20) \rightarrow 60 + 20 \geq 70? \checkmark$



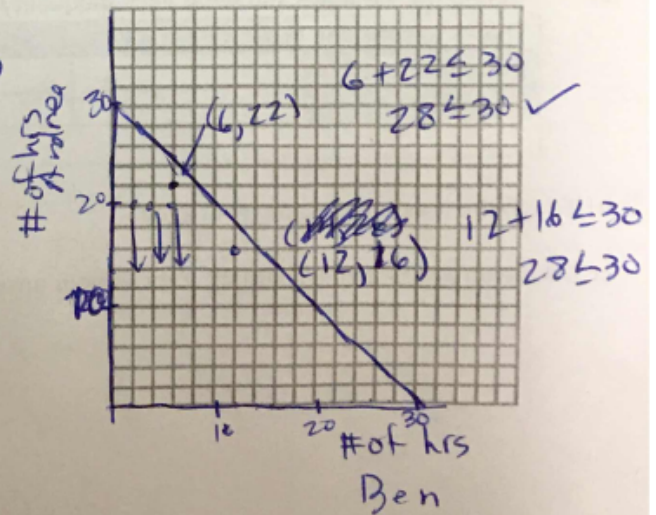
2. Ben and Andrea volunteer at a seniors' center. Together they volunteer, at most, 30 hours each week and work only a whole number of hours.

a) Given the inequality  $x + y \leq 30$ :  $x \geq 0, y \geq 0$

i) Define the variables:  $x$ : # of hrs Ben  
 $x \in \mathbb{W}, y \in \mathbb{W}$   $y$ : # of hrs Andrea

b) Graph the situation and appropriately label your graph.

c) State a possible solution and verify your solution.



## In-class assignment : Due Thursday Feb. 6

Section 5.1 - Assignment

/20

Name: \_\_\_\_\_

1. Page 221-222: # 1, 2, 5abc(assume Real #'s), 8 & 10

2. Graph the following:

a)  $-x + y < 1$