**Example 1:** Here is a continuation of the question from last time.

Jack has to buy pop for family movie night. They need at least 3 litres of Coke. They need at least 6 litres of Dr. Pepper. Jack has enough money to buy a maximum of 12 litres total. Jack’s family is trying to be healthy. He’s noticed there are 3000 calories in a litre of Coke and 2000 calories in a litre of Dr. Pepper. How much of each should he buy to minimize the amount of calories his family consumes??

**Step 1 – Graph the inequalities (don’t worry about calories, yet!)**



**Step 2 - Write a formula using x, y, and C for the number of calories.**

**Step 3 - Check points from the possibilities for number of calories.**

* Jack should buy \_\_\_\_\_ litres of cola and \_\_\_\_\_litres of Dr. Pepper to minimize calories his family consumes.
* You probably noticed that calories went up in one direction across the graph. Because of this, the maximums and minimums will always be on the edges and usually the corners.

**\*\*\*When looking for maximums and minimums you only have to check the corners.\*\*\***

**Example 2:** Change the following into inequalities and graph them.

Buffy the farmer is going to plant corn and beans. Buffy has enough seed to plant 4 acres of corn. She has enough seed to plant 6 acres of beans. Buffy only has 8 acres of land. Buffy makes $100 for every acre of corn planted and $150 for every acre of beans planted. How much of each should she plant to maximize profits? What is that maximum?



**Step 1 - Graph the inequalities**

**Step 2 - Write a formula for profit.**

**Step 3 - Check ALL corners to find the maximum.**

Buffy should plant \_\_\_\_\_\_ acres of corn and \_\_\_\_\_\_\_ acres of beans to get a max profit of \_\_\_\_\_\_\_\_\_\_\_.