**Chapter 6 Review**

1. Which of the following are solutions to the inequality $2y-3x<4$? Circle all that apply.

a) $(2, 5)$ b) $(4, 3)$ c) $(-2, 6)$

d) $(-6, -2)$ e) $(8, -3)$ f) (0, 0)

****2. Graph: $2y-3x<4$

 3. Graph: $y+x\geq 7$

4. You have just graphed the system:

$2y-3x<4$

$y+x\geq 7$

Where can the solutions to the system of inequalities be found? Give two valid solutions.

 Solutions: (\_\_\_\_\_,\_\_\_\_\_\_) and (\_\_\_\_\_,\_\_\_\_\_)

5. A toy company manufactures two types of toy vehicles: racing cars and sport-utility vehicles. No more than 40 racing cars and 60 sport-utility vehicles can be made in a day. The company can make 70 or more vehicles, in total, each day.

a) Step 1—Define your variables

Step 2—Determine Constraints

 (ie. Determine your inequalities

 —not your objective function)

Step 3—Graph.

b) It costs $8 to make a racing car and $12 dollars to make a sport-utility vehicle. What combinations will result in the minimum and maximum costs?

Step 4—Write an equations to show the total cost.

Step 5—Check all corners

Step 6—Answer in sentence

6. A vending machine sells pop and juice. The machine holds, at most, 240 cans of drinks. Sales from the vending machine show that that least 2 cans of juice are sold for each can of pop.

a) Step 1—Define your variables



Step 2—Determine Constraints

 (ie. Determine your inequalities)

Step 3—Graph

b) Each can of juice sells for $1.00 and each can of pop sells for $1.25. Determine the maximum revenue from the vending machine.

Step 4—Write an equation to show the total cost.

Step 5—Check all corners

Step 6—Answer in sentence

7. Jane has two summer jobs.

* She works no more than a total of 35 h a week. Both jobs allow her to have flexible hours but in whole hours only.
* At A&W, Jane works no less than 15 h and earns $8.50/h.
* At The Bay, Jane works no more than 20 h and earns $9.25/h.
* What combination of numbers of hours will allow her to maximize her earnings? What can she expect to earn?

Step 1: Define Variables:

Let $x=$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Let $y=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Step 2: Constraints:

Step 3: Graph

Step 4: Equation:

Step 5: Test Corners:

Step 6: Answer

8. On a flight between Winnipeg and Vancouver, there are business class and economy seats. At capacity, the airplane can hold no more than 145 passengers. No fewer than 130 economy seats are sold, and no more than 8 business class seats are sold. *The airline charges $615 for business class seats and $245 for economy seats. What combination of business class and economy seats will result in the maximum revenue? What will this maximum revenue be?*

