

**Notes 7.5 part 2 The following problem is in your textbook Section 7.5 Pg. 417-420 Examples 1-4. Use the textbook to help you through this problem.**

Bottled water and medical supplies are to be shipped to victims of an earthquake by plane. Each container of bottled water will serve 10 people and each medical kit will aid 6 people. Each plane can carry no more than 80,000 pounds. The bottled water weighs 20 pounds per container and each medical kit weighs 10 pounds. Each plane can carry a total volume of supplies that does not exceed 6000 cubic feet. Each water bottle is 1 cubic foot and each medical kit also has a volume of 1 cubic foot. Determine how many bottles of water and how many medical kits should be sent on each plane to maximize the number of earthquake victims who can be helped.

**A) Identify your variables:** HINT: “What is it that you want to make, produce, sell, deliver...?”

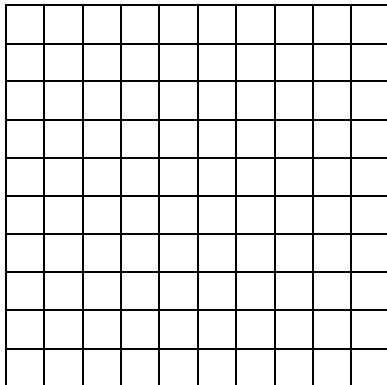
**x =**

**y =**

**B) Objective Function:** HINT: “What is it that you want to Maximize or Minimize?”

**C) Constraints:** HINT: “What are your limitations?”

**D) Graph:**



**E) Corners:**

**Objective Function Value:**

**Intersection between Weight and Volume**

**F) Answer:**

**The following problem was done in the last class. Use your notes from class to help you through this problem.**

A company manufactures bookshelves and desks for computers. The company's profits are \$25 per bookshelf and \$55 per desk. To maintain high quality, the company should not manufacture more than a total of 80 bookshelves and desks per day. To meet customer demand, the company must manufacture between 30 and 80 bookshelves per day, inclusive. Furthermore, the company must manufacture at least 10 and no more than 30 desks per day. How many bookshelves and how many desks should be manufactured per day to obtain maximum profit? What is the maximum profit?

**A) HINT:** "What is it that you want to make, produce, sell, deliver...?"

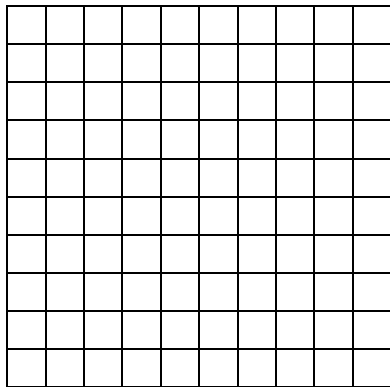
**Let  $x =$**

**$y =$**

**B) Objective Function:** HINT: "What is it that you want to Maximize or Minimize?"

**C) Constraints:** HINT: "What are your limitations?"

**D) Graph:**



**E) Corners:**                      **Objective Function Value**

**F) Answer:**