**Linear Programming Day 2 Notes**

**Example 1:** A farmer has 10 acres to plant in wheat and rye. He has to plant at least 7 acres. However, he has only $1200 to spend and each acre of wheat costs $200 to plant and each acre of rye costs $100 to plant. Moreover, the farmer has to get the planting done in 12 hours and it takes an hour to plant an acre of wheat and 2 hours to plant an acre of rye. If the profit is $500 per acre of wheat and $300 per acre of rye how many acres of each should be planted to maximize profits?

I. Define variables. IV. Graph profit equation and constraints



II. Write profit equation.

III. Define constraints as a system of inequalities.

V. State the corner points (vertices) and

determine the profit at each vertex.

VI. Answer question as a complete sentence.

**Example 2:** A calculator company produces a scientific calculator and a graphing calculator. Long-term projections indicate an expected demand of at least 100 scientific and 80 graphing calculators each day. Because of limitations on production capacity, no more than 200 scientific and 170 graphing calculators can be made daily. To satisfy a shipping contract, a total of at least 200 calculators much be shipped each day. If each scientific calculator sold results in a $2 loss, but each graphing calculator produces a $5 profit, how many of each type should be made daily to maximize net profits?

I. Define variables. IV. Graph profit equation and constraints



II. Write profit equation.

III. Define constraints as a system of inequalities.

V. State the corner points (vertices) and

determine the profit at each vertex.

VI. Answer question as a complete sentence.