# **Your Problem Assignment**

PRODUCTION: Wilson Manufacturing produces both baseballs and softballs, which it wholesales to vendors around the country. Its facilities permit the manufacture of a maximum of 500 dozen baseballs and a maximum of 500 Dozen softballs each day. The cowhide covers for each ball are cut from the same processed cowhide sheets. Each dozen baseballs require five square feet of cowhide, including waste, whereas every-dozen softballs require six square feet. Wilson has 3600 square feet of cowhide sheet available each day.

Production of baseball and softballs includes making the inside core, cutting and sewing the cover, and packaging. It takes about one minute to manufacture a dozen baseballs and two minutes to manufacture a dozen softballs. A total of 960 minutes is available for production daily.

If Wilson estimates that its profit is $7 per dozen baseballs and $10 per dozen softballs, determine a production schedule that maximizes Wilson’s daily profit.

1. LP Formulation: Formulate a set of linear constraints and an objective function that characterizes the production process at Wilson manufacturing.
2. Graph the feasible region for this problem
3. Wilson is considering manufacturing either 300 dozen baseballs and 300 dozen softballs or 350 dozen baseballs and 350 dozen softballs. Characterize each of these solutions as an interior point, extreme point, or infeasible point and explain why, regardless of Wilson Manufacturing’s objective, neither could be an optimal solution.