

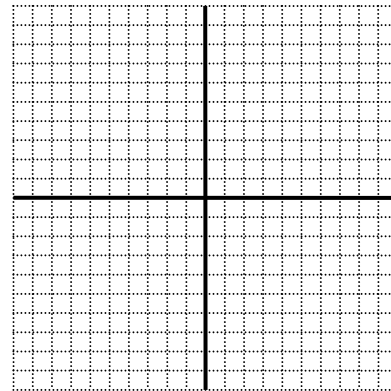
Nicholson

MA110

5-3 Linear Programming in Two Dimensions : A Geometric Approach

South Shore Sail Loft manufactures regular and competition sails. Each regular sail takes 2 hours to cut and 4 hours to sew. Each competition sail takes 3 hours to cut and 10 hours to sew. There are 150 hours available in the cutting department and 380 hours available in the sewing department.

- a) If the Loft makes a \$100 profit on each regular sail and \$200 on each competition sail, how many sails of each type should they manufacture to maximize profit? What is the maximum profit?



- b) If an increase in demand for competition sails causes the profit on a competition sail to rise to \$260, does this change the production levels to maximize profit?

- c) If a decrease in demand for competition sails drops the profit to \$140, does this change the production levels to maximize profit?