

Project 1 IMSE 680

You work for a consulting firm and have been assigned to work for Sole Pineapple Company. Through Sole's current planting policy, Sole typically generates a profit of \$10,000,000. Each year they have \$50,000,000 to pay for overhead expenses of the company (salaries, factory improvements, etc.). Thus, their selling of the pineapples minus planting costs bring in \$60,000,000 per year.

Sole can plant up to 120,000 acres of pineapple fields in any given year. There are 3 different fields that can be planted. The first field has 40,000 acres and produces pineapples that have an average grade of 9. The second field is 30,000 acres and produces pineapples of grade 7.5. The third field is 50,000 acres and produces pineapples of grade 7. Each acre produces 1,000 pounds of pineapples regardless of the field. The pineapples are transported to a factory in trucks that vary in size and shape. The average transportation cost is \$10 per thousand pounds of pineapples. It costs on average \$200 to plant, weed, fertilize, maintain and harvest an acre of planted pineapples.

From picked pineapples, Sole produces juice, whole pineapples, crushed pineapples and sliced pineapples. It takes 2 pounds of pineapples to produce one gallon of juice, which is sold to vendors for \$1.50. Juice must have an average quality of 7.5. A pound of whole pineapples is sold for \$.75 and whole pineapples must have an average grade of 9. Both canned and sliced pineapples are sold for \$1.25 a pound and their average grade must each be 8.0. There is a \$.05 charge for processing whole pineapples, a \$.2 charge to produce a gallon of juice, a \$.25 charge to produce a pound of sliced pineapples and a \$.30 charge to produce a pound of crushed pineapples.

Sole has a contract with their canning supply company and they only receive enough cans for 50,000,000 pounds of sliced and crushed pineapples in a year. Additionally, assume that at most 20,000,000 pounds of whole pineapples and 30,000,000 gallons of juice can be sold each year. To keep customers happy, at least 10,000,000 pounds or gallons of each product must be made each year.

As is specific to your company, you are supposed to produce a 1 page Executive Summary, that is intended to be written to upper level management to convince them that the proposed changes are worth further exploration. Additionally, you are to write a Technical Report that an industrial engineer could verify your results. There is no set length to the Technical Report, but this report should convince the engineer that you are competent and your solution is correct.