COSC 480/MATH 482
Excel Exercises
Fall 2012

Problem 1 - Done in Class Sept. 10

Hi-U produces three types of canned juice drinks, A (apple), B (bear), and C (artificial snozzberries), using fresh strawberries, grapes, and apples. The daily supply is limited to 200 tons of strawberries, 100 tons of grapes, and 150 tons of apples. The cost per ton of strawberries, grapes, and apples is $200, $100, and $90, respectively. Each ton makes 1500 lb of strawberry juice, 1200 lb of grape juice, and 1000 lb of apple juice. Drink A is a 1:1 mix of strawberry and apple juice. Drink B is a 1:1:2 mix of strawberry, grape, and apple juice. Drink C is a 2:3 mix of grape and apple juice. All drinks are canned in 16-oz cans. The price per can is $1.15, $1.25, and $1.20 for drinks A, B, and C. Determine the optimal mix of the three drinks using Excel!

Solution: a = 0, b = 300000, c = 0 (see Excel spreadsheet on webpage)

Source: Taha, 2.4E.1

Problem 2

Ed Goon is the production manager for Bilco Corp., which produces three types of spare parts for automobiles. The manufacture of each part requires processing on each of two machines, with the following processing time (in hours):

Machine	Part A	Part B	Part C
1	0.02	0.03	0.05
2	0.05	0.02	0.04

Profit margins for the parts are: A - $300; B - $250; C - $200. Maximize profit assuming that each machine is only available 40 hours per week.

Solution: a = 363.63, b = 1090.91, c = 0

Source: Hillier & Lieberman 3.5.3