

Deterministic Math Models (550.251)
Homework 3 (Due Thursday, February 21, 2008)

General Directions: You must show all work and document any assumptions to receive full credit. All problems are to be done by hand unless otherwise stated. When formulating linear programs, make sure you define your variables and label all constraints.

Algebraically formulate a linear program to determine the best solution for the situations stated in the problems below. Then solve your models using Excel. Make sure you print out your Excel Answer Report.

1. Winston & Albright: Problem 4.9.45(a)
2. Winston & Albright: Problem 4.9.120
3. Winston & Albright: Problem 5.7.50. The job time data for this problem are presented in the table below (as well as in the Excel file that comes with your text).

	Job 1	Job 2	Job 3	Job 4
Person 1	22	18	30	18
Person 2	18	–	27	22
Person 3	26	20	28	28
Person 4	16	22	–	14
Person 5	21	–	25	28

4. Winston & Albright: Problem 5.7.57. The unit shipping cost data for this problem are presented in the table below (as well as in the Excel file that comes with your text).

From \ To	City 1	City 2	City 3
Detroit	\$800	\$600	\$300
Dallas	\$500	\$200	\$200

Now suppose the restriction that “at most 2700 cars can be sent from a given plant to a give city” is removed. How does the formulation above change? What is the solution to this new problem?

5. Winston & Albright: Problem 5.7.64