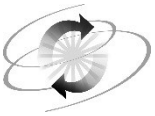

Exercise

Formulating a Transportation Problem

Consider the transportation problem with unit shipping costs, supply, and demand in the table below.

DESTINATIONS

ORIGINS		Boston	Newark	Toronto	Supply
	Chicago	40	25	15	200
	Detroit	30	15	10	150
	Demand	50	150	100	

a. Complete the parameter declaration statements in part **4a** of the program **ch2ex.sas**. Replace each *INDEX-SET* with the appropriate (declared) index set and *INITIALIZERS* with the appropriate data items from the table. This assigns values to a two-dimensional array **unit_cost** of unit costs, an array **supply** of supplies, and an array **demand** of demands. How does PROC OPTMODEL format the output of the PRINT statement in the SAS program?

b. Complete the variable declaration statements in part **4b** of the program **ch2ex.sas**. Replace each *INDEX-SET* with the appropriate (declared) index set and *EXPRESSION* with the appropriate variable expression. (The decision variables are initialized to 50 in order to print values for the implicit variables.)

c. Complete the constraint and objective declaration statements in part 4c of the program ch2ex.sas and solve the transportation problem using PROC OPTMODEL. Use the EXPAND statement to check your formulation.

Hint: The optimal objective value is $5,750.