

Why

Many optimization problems that are not directly about moving commodities nevertheless fit the transportation problem setup and solution methods. In particular, division of work among several work centers (with profitability/cost for each type of work, each type of center known) and scheduling of production for different time periods often fit transportation-type models – though these tend to be maximization (profit) rather than minimization (cost))

LEARNING OBJECTIVES

1. Work as a team, using the team roles
2. Learn how to set up & solve transportation models on a spreadsheet.
3. See how the model can be extended to deal with special requirements or different problems.

CITERIA

1. Success in working as a team and in fulfilling the team roles.
2. Understanding of the material by all team members
3. Success in completing the exercises.

RESOURCES

1. Your class notes on transportation models
2. Your text – section 4.2
3. Microsoft Excel, on the college network
4. 50 minutes

PLAN

1. Select roles, if you have not already done so, and decide how you will carry out steps 2 and 3
2. Work through the exercises given below you will submit one (team) copy of the work, with the usual reports [see the syllabus]
3. Assess the team's work and roles performances and prepare the Reflector's and Recorder's reports including team grade.
4. Be prepared to discuss your results

EXERCISES

1. Model and solve the problem (Using Excel) and answer questions a, b, c (not d) for Exercise #8 on p.241 in your text. Be sure you actually write out your answer (using words). Some things to note:
 - (a) Demands are greater than the supply. You must either set up a dummy supply or use \leq constraints (rather than equal) on the demands.
 - (b) Figuring out the per unit cost for each route involves handling costs at both ends as well as the mileage cost.
 - (c) for parts c and d create new worksheets (remember copy/move command or use copy/paste, to preserve solver setup on a,b) because you will need an additional set of constraints —you can write them below the columns and put them in solver
2. Model and solve the problem for #2 on p. 239 in your text (an assignment problem)

READING ASSIGNMENT (in preparation for next class meeting)

Section 4.4 in Text (We will modify *our* transportation model – rather than the network model – to deal with assignment problems, so read only to see what *adjustments* are made – don't need a lot of detail.

SKILL EXERCISES:(hand in - individually - next Monday)

- 1 Text p. 239 (Ch 4) # 31, 38