Homework #10
Supply Chain Models: Manufacturing & Warehousing (ISyE 3104) - Fall 2001
Due November 15, 2001

Show all your steps to get credit.

Reading assignment: Read Chapter 7.

1. A company expects the following demand over the next 4 months: 76, 22, 56, 90. The setup cost for production is $150 and the holding cost per unit per month is $3.

   (a) (11 points) Create a graph which can help you find the optimal lot sizing policy. Compute the costs for each of the arcs on the graph.

   (b) (4 points) Consider the path 1-3-4-5 on the graph. What is the corresponding lot sizing policy? Compute the cost of this policy using the arc costs you computed in part (a).

   (c) (4 points) Consider the following lot sizing policy: Produce 76 units in month 1, 22 units in month 2, and 146 units in month 3. Which path on the graph corresponds to this lot sizing policy? What is the cost of this policy?

2. (9 points) What is the difference between “push” and “pull” systems, in terms of

   (a) Initiating production.
   (b) Work-in-process (WIP) inventory.
   (c) The ability to catch and correct defective items.

   Explain each of your answers clearly.

3. (6 points) Think of a retail store, e.g., The Gap. Do you think they use a push system or a pull system? Why? Can you think of a company (e.g., a fast food restaurant) which uses a pull system (at least in making the “final product”). Explain.

4. (6 points) List 3 reasons as to why it might be difficult or not desirable to implement a pull system.