

inventory

Based on historical data, the Simplex Company knows that the demand for its flagship product, Pivot, during each of the next 12 months will be as follows:

Month	Demand
1	11
2	13
3	23
4	45
5	16
6	32
7	21
8	44
9	17
10	32
11	22
12	47

At the beginning of each month, the company must determine how many units should be produced during the current month. There is a variable cost of \$1 for every unit produced. At the end of each month a holding cost of 50 cents per unit on hand is incurred. Capacity limitations allow a maximum of 30 units to be produced during each month. The size of the company's warehouse restricts the ending inventory for each month to at most 40 units.

Write a linear program that determines a production schedule that will meet all demands on time and minimizes the sum of production and holding costs during the four months. Assume that 10 units are on hand at the beginning of the first month.