

Example: 3.10 (Sailco)

Sailco must determine how many boats should be produced during each of the next four quarters. The demand during each is as follows: first quarter, 40; second quarter, 60; third quarter 75; and fourth quarter, 25.

Sailco must meet demands on time. At the beginning of the first quarter, Sailco has an inventory of 10 boats. At the beginning of each quarter, Sailco must decide how many boats to produce for the quarter. For simplicity, we assume that boats manufactured during a quarter can be used to meet the demand for that quarter. During each quarter, Sailco can produce up to 40 boats with regular time labor at a cost of \$400 per boat. Using overtime, each additional boat costs \$450.

At the end of each quarter (after production has occurred and the current quarter's demand has been satisfied), a carrying cost of \$20 per boat is incurred. Use an LP to determine the production schedule that minimizes costs during the next four quarters.

Next Example: Bakery