A Production Planning Problem

Acme Manufacturing Company has received a contract to deliver home windows over the next 6 months. The successive demands for the six periods are 100, 250, 190, 140, 220, and 110, respectively. Production cost for window varies from month to month depending on labor, material, and utility costs. Acme estimates the production cost per window over the next 6 months to be \$50, \$45, \$55, \$48, \$52, and \$50, respectively. To take advantage of the fluctuations in manufacturing cost, Acme may elect to produce more than is needed in a given month and hold the excess units for delivery in later months. This, however, will incur storage costs at the rate of \$8 per window per month assessed on end-of-month inventory. An initial inventory of 25 windows is left- over from the last month.

Develop a LP to determine an optimum production schedule for Acme.