

**Problem Definition**

Problem 25. Find the marginal profit for producing  $x$  units.

$$P = -2x^2 + 72x + 145$$

**Solution Step 1:**

The marginal profit is the instantaneous rate of change of the profit function with respect to the number of units produced. That is, we compute the derivative of the profit function. This gives

$$P'(x) = \frac{d}{dx}(-2x^2 + 72x + 145) = -4x + 72$$