**Chapter Five - Baye**

**The Production Process and Costs**

GM and UAW Butt Heads over Jobs

In an effort to save its shrinking rank and file, the United Auto Workers (UAW) began a two-month-long strike against General Motors. At issue was GM’s desire to eliminate its “pegged rate” pay system and cut its North American work force by about 40,000 jobs over for years. GM’s pegged rate pay system allows plant workers who meet a daily quota in five or six hours to either go home for the day or collect overtime pay for the remaining portion of the-a system that GM says creates great in efficiencies in production. GM believes that eliminating its pegged rate pay system and some workers will make its operations more efficient and raise workers’ productivity. However, the UAW is fighting tooth and nail on both issues to keep its declining membership from further shrinking.

To support their position, GM officials cited lagging efficiency measures and high wages relative to other automakers. Workers at Ford produced an average of 33.2 vehicles per year and were paid wages that average $43 per hour. In contrast, GM workers produced an average of 27.9 vehicles per year and received $45 per hour.

Do these figures justify GM’s proposed actions? Why or why not?

**Demonstration Problem 5-1**

The engineers at Morris Industries obtained the following estimate of the firm’s production function:

*Q* = *F (K, L)* = min *(3K, 4L)*

How much output is produced when 2 units of labor and 5 units of capital are employee?

**Demonstration Problem 5-2**

A firm produces output that can be sold at a price of $10. The production function is given by

*Q* = *F (K, L)* =

If capital is fixed at 1 unit in the short run, how much labor should the firm employ to maximize profits if the wage rate is $2?

**Demonstration Problem 5-3**

Temporary Services uses four word processors and two typewriters reports. The marginal product of a typewriter is 50 pages per day, and the marginal product of a world processor is 500 pages per day.

The rental price of a typewriter is $ 1 / day, whereas the rental price of a word processor is $50/day.

Is Temporary Services utilizing typewriters and word processors in a cost-minimizing manner?

**Demonstration Problem 5-4**

ACME Coal paid $5,000 to lease a railcar from the Reading Railroad. Under the terms of the lease, $1,000 of this payment is refundable if the railcar is returned within two days of signing the lease.

1. Upon signing the lease and paying $5,000, how large are ACME’s fixed costs? Its sunk costs?
2. One day after signing the lease, ACME realizes that it has no use for the railcar. A farmer has a bumper crop of corn and has offered to sublease the railcar from ACME at a price of $4,500. Should ACME accept the farmer’s offer?

**Demonstration Problem 5-5**

The cost function for Managerial Enterprises is given by C (Q) = 20 + 3 Determine the marginal costs, average variable costs, and average total costs when *Q* = 10.

**Demonstration Problem 5-6**

Suppose the cost function of firm A, which produces two goods, is given by

C = 100 *-* .5 (*Q*1)2 +(*Q*2)2

The firm wishes to produce 5 units of good 1 and 4 units of good 2.

1. Do cost complementarities exist? Do economies of scope exist?
2. Firm A is considering selling the subsidiary that produces good 2 firm B, in which case it will produce only good 1. What will happen to firm A’s costs if it continues to produce 5 units of good 1?