

International Institute for
Technology and Management



Tutoring Sheet #13

Unit 05a: Mathematics 1

1. Find the total cost function if the marginal cost is

$$q + 5q^2 + e^q \quad \text{and the fixed cost is } 10 .$$

2. A company's marginal cost function is :

$MC = 32 + 18q - 12q^2$ and fixed costs of 43. Find the firm's total cost function, average cost function and variable cost.

3. A firm's marginal cost function is :

$$\frac{20}{\sqrt{q}} e^{\sqrt{q}} + q^3 + \frac{1}{q+1} \quad \text{and fixed costs of } 20.$$

Determine the total cost function.

4. The marginal cost is a function of output as follows :

$$MC = 10 - q + q^2$$

Determine the extra cost which is incurred when production is increased from 2 to 4 .

5. A company produces only product X. When producing q units the Marginal cost is given by:

$$MC = 1 - \frac{1}{(q+1)^2} \quad \text{if the average cost per unit when producing}$$

4 units is 3.05. what is the total cost of producing 5 units of X?

6. The marginal revenue for a commodity is given by :

$MR = 10 - 2q^2$ and the total cost is $TC = q^2 + 4q + 2$ where q is the number of units produced. Find the revenue function and determine the profit function.