



Lab Problem Set 1

Cost for Markets

This problem set is intended to support the presentation by your teacher in the class. You are not required to submit written solutions to this problem set. It is highly recommended that you work on these problems at home since you will be expected to know how to solve similar tasks in the controlled works.

Problem 1

Complete the following table:

Output	Total Cost	Variable Cost	Fixed Cost	Marginal Cost
0			60	
1		10		
2	90			
3				100
4		80		
5	180			
6				50

Problem 2

A firm's total cost function is given by the equation:

$$TC = 4000 + 5Q + 10Q^2.$$

Write an expression for each of the following cost concepts:

- Total Fixed Cost
- Average Fixed Cost
- Total Variable Cost
- Average Variable Cost
- Average Total Cost
- Marginal Cost

Problem 3

A firm's total cost function is given by the equation:

$$TC = 4000 + 5Q + 10Q^2.$$

Determine the quantity that minimizes average total cost. Demonstrate that the predicted relationship between marginal cost and average cost holds.

Problem 4

A competitive market is made up of 100 identical firms. The short-run total cost function of each firm is given by

$$C = 10q + \frac{q^2}{2} + 150,$$

where q denotes the output of the representative firm.

- (a) Determine the short-run market supply curve.

- (b) Calculate the price when the market supply is 2000.
- (c) Do you expect the long run equilibrium price in the market to be higher, lower or the same as the price you calculated in part (b)? Explain.