



Practice Set 1

Cost for Markets

This problem set contains material for the relevant lab. Lab teachers are expected to provide sufficient guidance for the entire problem set. It is in the teacher's discretion to select the most representative tasks to solve instructionally in every lab. For the rest of the tasks, methodology, hints and final answers will be provided. Students are expected to work on practice problems, however, they are not required to submit written solutions. It is a non-negotiable policy in this course to not provide handouts with the solutions of practice problem sets.

1. Complete the following table:

Output	TC	VC	FC	MC
0			60	
1		10		
2	90			
3				100
4		80		
5	180			
6				50

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.

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.

4. A competitive market is made up of 100 identical firms. The short-run total cost function of each firm is given by $C = 10q + 0.5q^2 + 150$, 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.

5. A company produces olive oil using three inputs: olives, workers and hydraulic presses.

(a) There are 3 different scales of hydraulic presses that achieve their maximum efficiency at 10, 20 and 30 tons of olive oil, respectively. Of course, the larger the scale, the more expensive the press costs for the company to lease. If the company expects production to be between 22 and 28 tons, which press should it lease? Explain why.

(b) In (a) the firm thinks about the S-R or the L-R? How can you tell?

(c) If the prices of presses increase in the S-R period, how is the expected production going to be affected?

6. If we double the price of inputs to a firm, then does its cost function double at every level of output? Prove if the statement is true or false.