

AAE101: Intro to Ag. & Applied Econ.

Discussion Section 7

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Today's goal

- Apply cost and revenue concepts to determine the firm's optimal production level.
- Evaluate short-run and long-run firm decisions based on cost and market conditions.

Practice Questions

1. Assume that mohair farms are a competitive industry. Suppose the demand for mohair sweaters decreases because of shorter winters from climate change. In the short run, what happens to the pounds of mohair sold by each farm? What happens to the profits of each farm? Answer by drawing two clearly labeled graphs and explain your graphs in the space given on the next page.
2. Soap is made by identical firms where each firm's long-run and marginal costs of production are:

$$ATC = 10 - \sqrt{q} \text{ and } MC = q$$

where production (q) measures bars of soap.

- (a) Suppose the price of soap is \$9 a bar, how many bars of soap does each firm produce?

(b) Is the firm profitable with this price?

3. A firm operates in a perfectly competitive market where the price of the good is \$150. The table below contains missing values related to the firm's costs at different output levels.

Output	Price (MR)	Fixed Cost (FC)	Marginal Cost (MC)	Total Variable Cost (TVC)	Total Cost (TC)	Avg Variable Cost (AVC)	Avg Total Cost (ATC)
1	150	500	50				
2	150	500	70				
3	150	500	90				
4	150	500	110				
5	150	500	130				
6	150	500	150				

- (a) Fill in the missing values in the table using the formulas provided.
- (b) Determine the profit-maximizing output level.
- (c) Based on your calculations, should the firm continue operating in the short run?
- (d) Would the firm exit the industry in the long run?
- (e) What would happen if the market price dropped to \$100? Would the firm still produce?