

Economics for Engineers
Some Questions for Practice

Q. 1. Based on the following information answer the questions below:

An airline is considering introducing an advance purchase fare to supplement its existing economy fare. It conducts a study to assess the patronage of such fare. The following table summarizes the projected weekly sales for various advance purchase sales. The economy class fare is 200 USD.

$$[2 + 2 = 4]$$

Advance Purchase Fare (USD)	No. of Advance Purchase Tickets	No. of Economy Tickets
50	2000	200
100	1200	400
120	900	500
150	600	600
180	200	1000

a) What is the cross-price elasticity of economy tickets in response to advance purchase fares when the advance fare increases from 50 to 150 USD?

b) What is the own-price elasticity of advance purchase tickets when the fare rises from \$100 to \$180?

Q. 2. Suppose a Chair manufacturer firm is producing at the following levels of production corresponding to different numbers of workers:

No. of workers	No. of Chairs
1	10
2	18
3	24
4	28
5	30
6	28
7	25

a) Calculate the marginal and average product of labor for this production function.

b) Is the firm operating in the short run or long run? Why?

c) Does this production function exhibit diminishing returns to labor? Explain.

d) Explain what might cause the marginal product to become negative.

Q. 3. Joe quits his computer programming job, where he was earning a salary of \$50,000 per year, to start his own computer software business in a building that he owns and was previously renting out for \$24,000 per year. In his first year of business he has the following expenses: salary paid to himself, \$40,000; rent, \$0; other expenses, \$25,000. Provide the definitions of accounting and economic cost. Also find the accounting and the economic cost associated with Joe's computer software business.

Q.4. A certain car manufacturer regards his business as highly competitive because he is keenly aware of his rivalry with the other few car manufacturers in the market. Like the other car manufacturers, he undertakes vigorous advertising campaigns seeking to convince potential buyers of the superior quality and better style of his automobiles and reacts very quickly to claims of superiority by rivals. Is this the meaning of perfect competition from the economist's point of view? Explain.

Q.5. a The market price facing a perfectly competitive firm in the short run is 25. Complete the following table

Q	TR	P	Short run TC	MC	Profit
0			25		
1			49		
2			69		
3			86		
4			100		
5			114		
6			128		
7			144		
8			163		
9			185		
10			212		
11			246		
12			300		

b. Identify the profit-maximizing output level for the firm

Q. 6 Use the following data to answer the following questions

Q	TVC	MC	AVC
1	10		
2	16		
3	20		
4	25		
5	31		
6	38		
7	46		
8	55		
9	65		

Q. 7 Question for thinking: Why do some firms produce multiple product lines, while others produce only one?

Q.8 Can the problem for adverse selection occur when a job requires intangible or unmeasurable abilities?