



**Irvine Valley College**

**Homework – Price Takers & Searchers  
Economics 1 Honors  
Mark McNeil**

1. Given the following information for a firm that is a price taker (a firm in perfect competition):

Q of Labor	Total Physical Product	Marginal Physical Product	Total Cost	Total Variable Cost	Total Fixed Cost	Average (Total) Cost	Average Variable Cost	Average Fixed Cost	Marginal Cost
0	0	*****	\$3,000			*****	*****	*****	*****
2	50								
4	106								
6	154								
8	198								
10	236								
12	270								
14	300								
16	326								
18	348								
20	366								
22	380								
24	390								
26	396								
28	398								
30	398								

**The price of a unit of labor is \$100**

- Use an Excel spreadsheet to complete the table.
- Graph (using Excel or by hand) the total product function. Indicate clearly where increasing returns ends and diminishing returns begins.
- Graph (using Excel or by hand) the total cost curve, the total variable cost curve, and total fixed cost.
- Graph (using Excel or by hand) the average (total) cost curve, average variable cost curve and marginal cost curve.
- This firm is a price taker.

If the price is \$35, the quantity this firm will produce will be: \_\_\_\_\_

and the total profit will be (show the calculation): \$ \_\_\_\_\_

If the price is \$10, the quantity this firm will produce will be: \_\_\_\_\_

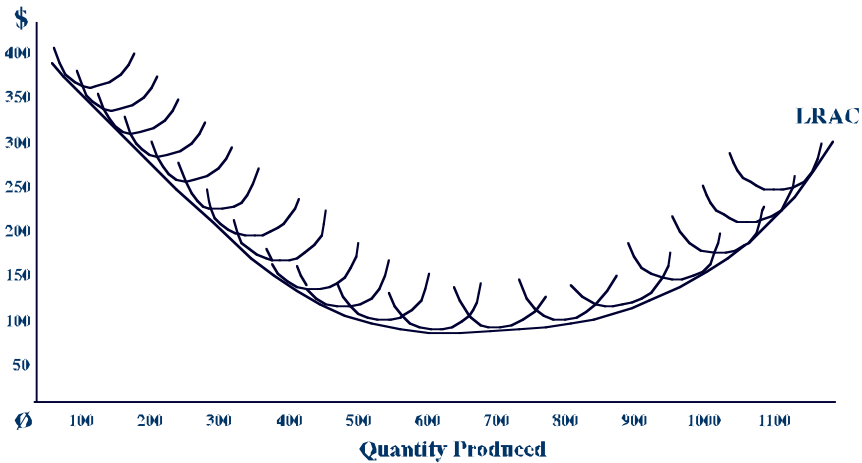
and the total profit/loss will be (show the calculation): \$ \_\_\_\_\_

If the price is \$3.75, the quantity this firm will produce will be: \_\_\_\_\_

and the total profit will be (show the calculation): \$ \_\_\_\_\_

2. Assume that the cost information shown above is for the “typical” firm in a purely competitive industry. What price would you expect to prevail in the long run (time enough for firms to enter or exit) in this industry? Explain why this will be the price and not a higher or lower price.

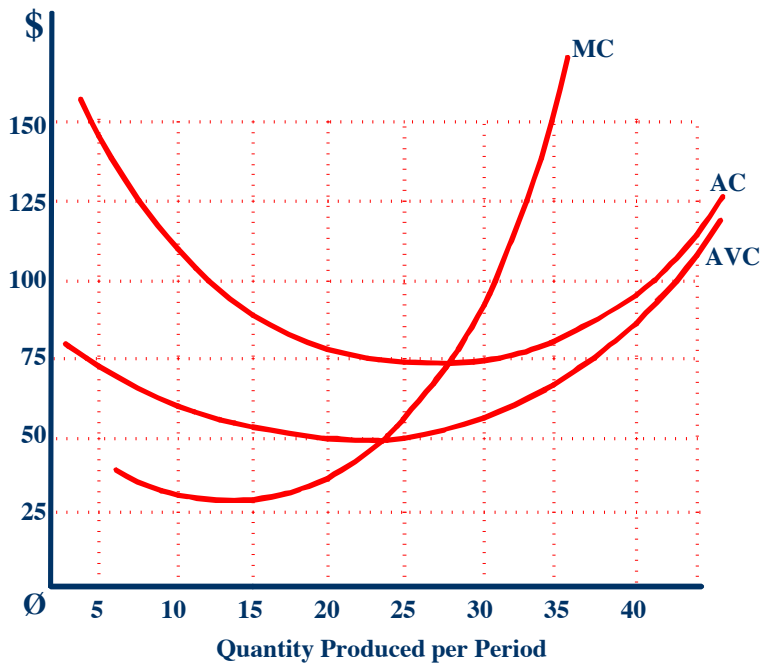
3. Given the long run average cost curve for a firm:



- a. At what level of output will the firm experience the minimum efficient plant scale?
- b. Economies of scale exist between \_\_\_\_\_ and \_\_\_\_\_ units of output.
- c. Diseconomies of scale exist between \_\_\_\_\_ and \_\_\_\_\_ units of output.
- d. Are there any constant returns?

4. The diagram below shows the costs of production for a purely competitive firm. Use it to clearly show and label:
- A price at which this firm will produce and earn an economic profit.
  - The expected long-run equilibrium price (the price that you can expect to prevail in the long run). Explain.

- A price at which the firm would produce at a loss.
- A price at which the firm would shut down.



- If the firm were to produce 10 units of output, would it be achieving productive efficiency? Explain.