

### Problem Set #9

Sonoma State University  
Economics 305-Intermediate Microeconomics

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Consider the following daily product and cost schedule for a profit maximizing firm operating in a perfectly competitive market.

Output		Cost Functions					
Labor	Output	FC	VC	TC	MC	AVC	ATC
0	0	200	0		-----		
1	10						
2	25						
3	45						
4	60						
5	70						
6	75						
7	75						
8	70						

Assume the only variable cost is labor which is paid a rate of \$100 per day.

- (1) Complete the above cost schedule.
- (2) If the prevailing market price of output is \$5 per unit, what is the profit maximizing output?
- (3) At the profit maximizing output in (2), what is the per unit cost of production?
- (4) At the profit maximizing output in (2), what is the per unit labor cost?
- (5) At the profit maximizing output in (2), what is the per unit profit or loss?
- (6) At the profit maximizing output in (2), what is the total profit or loss?
- (7) Show your answers for questions 2-6, graphically. You need only graph your answers by hand using standard “U” shaped cost curves.
- (8) In the short run, at a market price of \$5 per unit, should this firm continue operating or should the firm shut down? Explain your answer.
- (9) If the prevailing market price of output is \$20 per unit, what is the profit maximizing output?
- (10) At the profit maximizing output in (9), what is the per unit cost of production?
- (11) At the profit maximizing output in (9), what is the per unit labor cost?
- (12) At the profit maximizing output in (9), what is the per unit profit or loss?
- (13) At the profit maximizing output in (9), what is the total profit or loss?
- (14) Show your answers for questions 9-13, graphically. You need only graph your answers by hand using standard “U” shaped cost curves.
- (15) What is the minimum price needed by the firm to break even (i.e., earn zero economic profits)? Explain.
- (16) What is the shutdown price? Explain.