



Microeconomics

Unit 3 Practice Sheet

Part 1: Production Function- Use the table to answer the questions.

Number of workers	0	1	2	3	4	5	6
Total Product	0	8	20	26	29	30	25

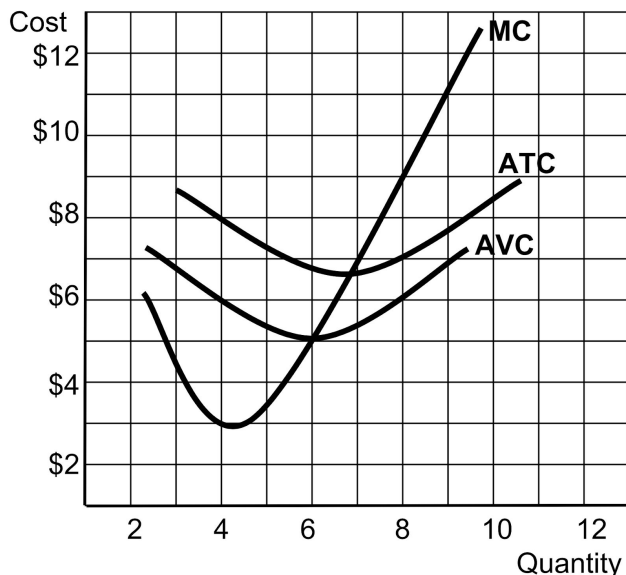
1. What is the marginal product of the 4th worker? Show your work.
2. After which worker does the law of diminishing marginal returns set in? Why?

Part 2: Costs of Production- Fill in the blanks in the chart and answer the question.

3. Why does the marginal cost of each unit initially fall then increase as more units are produced?

Quantity	Total Cost	Marginal Cost	Average Total Cost	Average Variable Cost	Average Fixed Cost
0	\$20	-	-	-	-
1		\$10			
2			\$16		
3		\$6	\$12.67		\$6.67
4		\$7	\$11.25	\$6.25	
5			\$11		
6	\$70		\$11.67	\$8.33	\$3.33
7			\$12.86	\$10	\$2.86

Part 3: Cost Curves- Use the graph below to answer the questions. Show your work.



4. What is the marginal cost of the 8th unit?
5. Calculate the fixed cost of producing 4 units?
6. Calculate the total variable cost of producing 9 units?
7. Calculate the total cost of producing 9 units?
8. Calculate the average fixed cost of 8 units?
9. Why does the marginal cost (MC) intersect the average total cost(ATC) at the ATC's minimum?

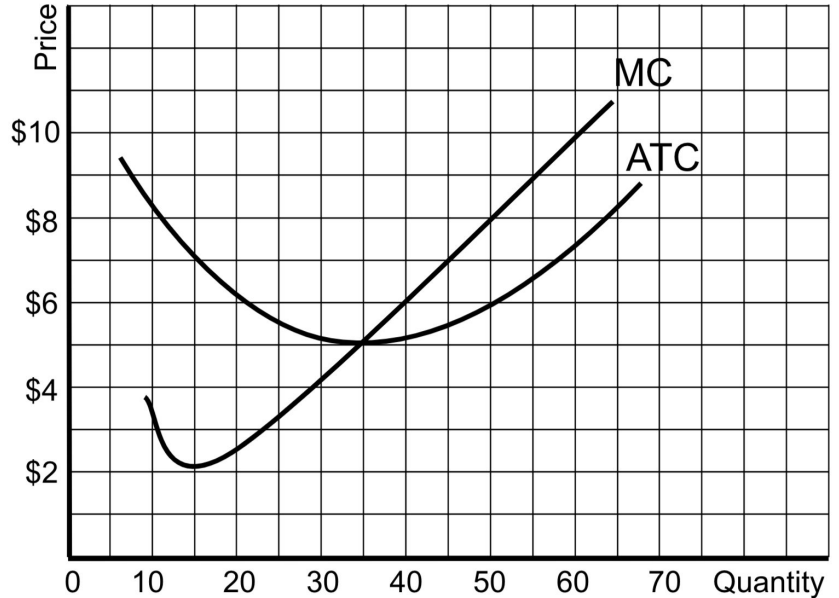


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Part 4: Perfect Competition- Use the graph below for a perfectly competitive firm to answer the questions.

- If the price is \$8, what is the profit maximizing quantity?
- Calculate the total cost at the profit maximizing quantity.
- Calculate the profit or loss at the profit maximizing quantity.
- How much profit will this firm earn if they increase the price \$2 higher than the market price?
- What is the profit maximizing price and quantity in the long-run?



- If the market price is \$5, will the firm earn economic profit, accounting profit, neither, or both? Why?

Part 5: Chart Practice - Use the chart to answer the questions.

- If the market price is \$15, what is the profit maximizing quantity?
- Calculate the total revenue at the profit maximizing quantity.
- Calculate the profit or loss at the profit maximizing quantity.
- Calculate the profit or loss of producing 7 units.
- Calculate the profit or loss of producing 3 units.
- Assume that the market price fell to \$10. Calculate the profit or loss at the profit maximizing quantity.

Quantity	Total Cost	Marginal Cost
0	\$20	
1	\$25	
2	\$28	
3	\$34	
4	\$42	
5	\$54	
6	\$70	
7	\$90	

- If the market price is \$10, should this firm shut down in the short-run? Why or why not?