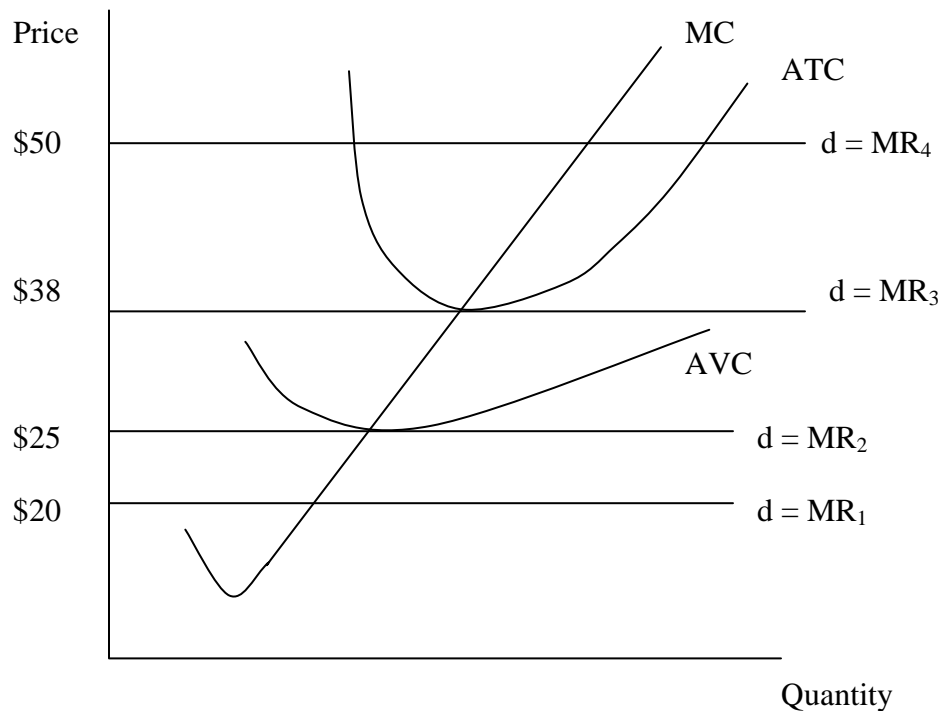


PRACTICE EXERCISES FOR CHAPTER 7

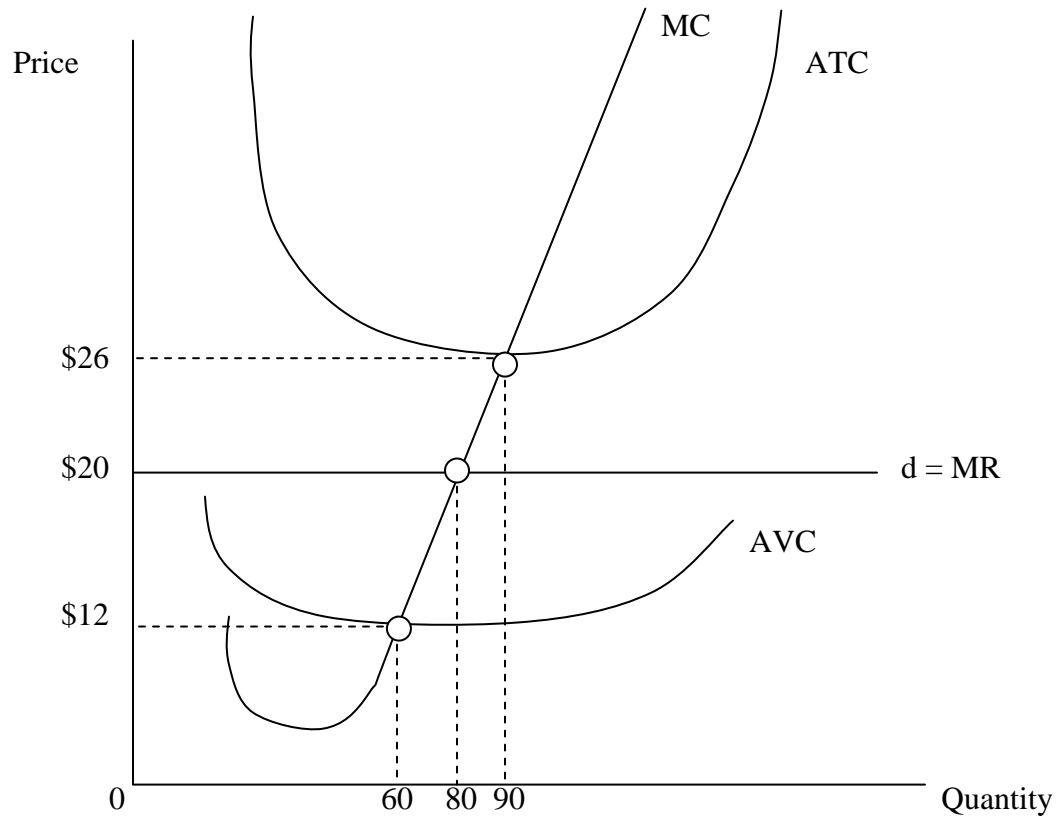
The exercises below are designed to facilitate your understanding of the mathematical and graphical concepts relevant to Chapters 7 & 8. Use your lecture notes and textbook to complete the problems and THEN “grade” yourself using my solutions, which are provided on the last few pages of this packet. **Remember, completing this exercise set is only a PART of the exam preparation process in this course!**

Use this graph of a perfectly competitive firm to answer the questions below.



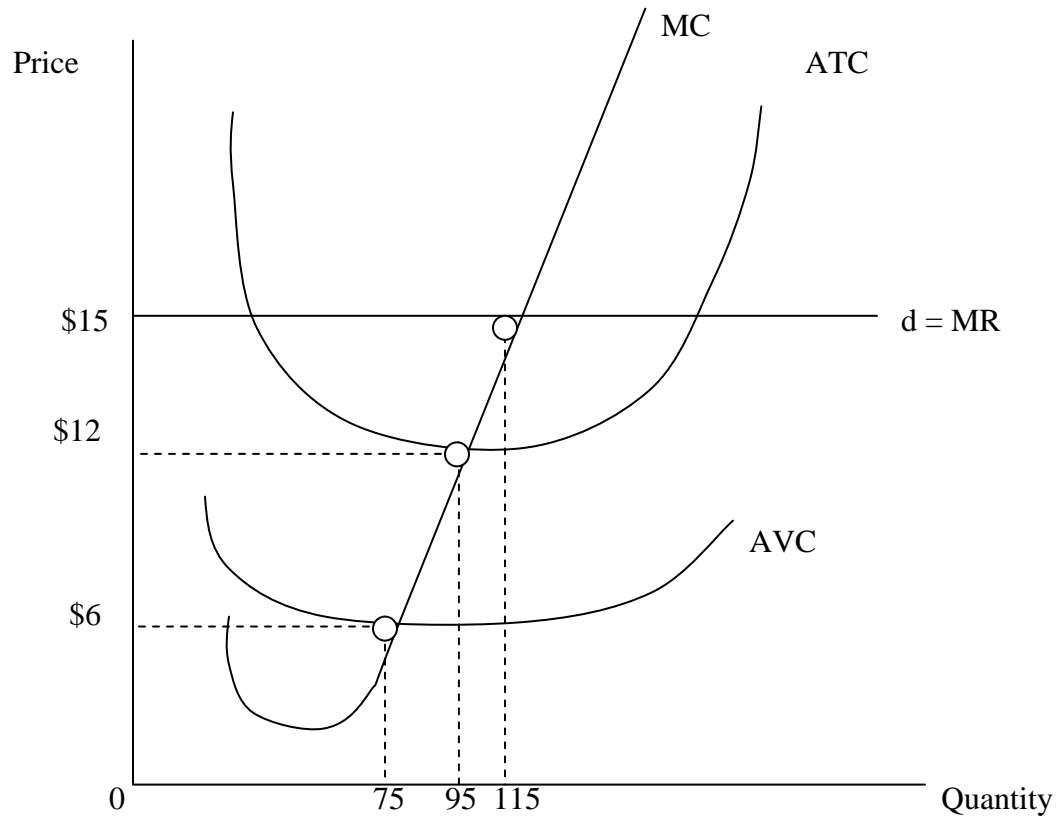
1. This firm will produce output and earn a positive economic profit if price equals \$ _____.
2. If price is equal to \$ _____, this firm will earn a normal profit.
3. This firm will take a loss but continue to produce output at a price less than \$ _____ and greater than or equal to \$ _____.
4. Once price falls below \$ _____, this firm will shut down in the short run.
5. Shade or highlight the firm's short run supply curve.

Use this graph to answer the questions below.



6. In order to maximize profits/minimize losses, what quantity of output should this firm produce?
7. What price will be charged for each unit of output?
8. Will this firm be making a profit or a loss? What is the value of the PER UNIT profit or loss?
9. What is the dollar value of this TOTAL profit or loss? Label & shade this area on the graph.
10. What is the dollar value of total revenue for this firm?
11. What is the dollar value of total cost for this firm?

Use this graph to answer the questions below.



12. In order to maximize profits/minimize losses, what quantity of output should this firm produce?
13. What price will be charged for each unit of output?
14. Will this firm be making a profit or a loss? What is the value of the PER UNIT profit or loss?
15. What is the dollar value of this TOTAL profit or loss? Label & shade this area on the graph.
16. What is the dollar value of total revenue for this firm?
17. What is the dollar value of total cost for this firm?

Consider the following data for a perfectly competitive firm.

Don't freak out! I'm asking the same questions here that you answered on the graphs in the previous problems. You use the same "rules and procedures" to answer the questions in a table!

Output	AFC	AVC	ATC	MC
1	\$300	\$100	\$400	\$100
2	\$150	\$75	\$225	\$50
3	\$100	\$70	\$170	\$60
4	\$75	\$73	\$148	\$80
5	\$60	\$80	\$140	\$110
6	\$50	\$90	\$140	\$140
7	\$43	\$103	\$146	\$180
8	\$38	\$119	\$156	\$230
9	\$33	\$138	\$171	\$290
10	\$30	\$160	\$190	\$360

18. If the market price of the firm's output is \$140, what quantity will this firm produce?

19. What will be the PER UNIT profit or loss at this quantity?

20. What will be the TOTAL profit or total loss at this quantity?

21. If the market price of the firm's output is \$290, what quantity will this firm produce?

22. What will be the PER UNIT profit or loss at this quantity?

23. What will be the TOTAL profit or total loss at this quantity?

24. If the market price of the firm's output is \$179, what quantity will this firm produce?

25. What will be the PER UNIT profit or loss at this quantity?

26. What will be the TOTAL profit or total loss at this quantity?

Consider the following information for a perfectly competitive firm in the soybean market.

The market price of a bushel of soybeans is currently \$21.00. Your farm currently produces 2,500 bushels of soybeans per month. Your farm incurs monthly fixed costs of \$30,000.00. The average variable cost associated with producing a bushel of soybeans is currently \$9.00.

27. How much Total Revenue (TR) does your farm generate per month?

28. How much Total Variable Cost does your farm incur per month?

29. How much Total Cost (TC) does your farm incur per month?

30. How much does it cost you to produce the “typical” bushel of soybeans under current market conditions?

31. Is your farm currently turning a profit or taking a loss? Indicate which and provide the dollar value of your farm’s PER UNIT profit or loss.

32. Compute the dollar value of your firm’s TOTAL profit or loss.

Now suppose the market demand for soybeans increases, and as a result, the market price of soybeans increases to \$25.00 per bushel. In response, you now choose to produce 3,000 bushels of soybeans per month. Furthermore, suppose that due to an increase in the cost of fertilizer, the average variable cost associated with producing a bushel of soybeans rises to \$10.00.

33. How much Total Revenue (TR) does your farm generate per month?

34. How much Total Variable Cost does your farm incur per month?

35. How much Total Cost (TC) does your farm incur per month?

36. How much does it cost you to produce the “typical” bushel of soybeans under current market conditions?

37. Is your farm currently turning a profit or taking a loss? Indicate which and provide the dollar value of your farm’s PER UNIT profit or loss.

38. Compute the dollar value of your firm’s TOTAL profit or loss.

Now suppose the market demand for soybeans decreases, and as a result, the market price of soybeans falls to \$14.00 per bushel. In response, you now choose to produce 1,500 bushels of soybeans per month. The average variable cost associated with producing a bushel of soybeans remains unchanged at \$10.00.

39. How much Total Revenue (TR) does your farm generate per month?

40. How much Total Variable Cost does your farm incur per month?

41. How much Total Cost (TC) does your farm incur per month?

42. How much does it cost you to produce the “typical” bushel of soybeans under current market conditions?

43. Is your farm currently turning a profit or taking a loss? Indicate which and provide the dollar value of your farm’s PER UNIT profit or loss.

44. Compute the dollar value of your firm’s TOTAL profit or loss.

45. Under these market conditions, should your farm stay open and produce output or should you choose to shutdown operations? Explain.

Consider the following information for a perfectly competitive firm.
The fixed cost of producing this product is \$8.

Output	Marginal Revenue	Marginal Cost
0	NA	NA
1	\$30	\$18
2	\$30	\$11
3	\$30	\$19
4	\$30	\$23
5	\$30	\$28
6	\$30	\$35
7	\$30	\$45

46. The profit-maximizing level of output (q^*) for this firm would be _____ units.

47. At the profit-maximizing output level, the firm's total revenue would be \$ _____.

48. At the profit-maximizing output level, the firm's total cost would be \$ _____.

49. This firm will make a (profit/loss) _____ of \$ _____.

MY SOLUTIONS

(1) \$50

(2) \$38

(3) \$38, \$25

(4) \$25

(5) You can do this!

(6) $q^* = 80$ units

(7) $P^* = \$20$ per unit

(8) \$6 per unit loss

(9) \$480 total loss – you can shade the area on the graph!

(10) $TR = \$1,600$

(11) $TC = \$2,080$

(12) $q^* = 115$ units

(13) $P^* = \$15$ per unit

(14) \$3 per unit profit

(15) \$345 total profit – you can shade the area on the graph!

(16) $TR = \$1,725$

(17) $TC = \$1,380$

(18) $q^* = 6$ units

(19) \$0

(20) \$0

(21) $q^* = 9$ units

(22) \$119 per unit profit

(23) \$1,071 total profit

(24) $q^* = 6$ units

(25) \$39 per unit profit

(26) \$234 total profit

(27) $TR = \$52,500$

(28) $TVC = \$22,500$

(29) $TC = \$52,500$

(30) $ATC = \$21.00$

(31) Zero economic profit or a normal profit: \$0 per unit

(32) \$0

(33) $TR = \$75,000$

(34) $TVC = \$30,000$

(35) $TC = \$60,000$

(36) $ATC = \$20.00$

(37) Per unit profit = \$5

(38) Total Profit = \$15,000

(39) $TR = \$21,000$

(40) $TVC = \$15,000$

(41) $TC = \$45,000$

(42) $ATC = \$30.00$

(43) Per Unit Loss = \$16.00

(44) Total Loss = \$24,000

(45) Since $P < ATC$, you know your farm is taking a loss. However, since $P > AVC$, you should continue to produce at a loss, in order to take the smallest possible loss. Confirm this claim mathematically.

(46) $q^* = 5$ units

(47) $TR = \$150$

(48) $TC = \$107$

OK, you have no idea WHERE this number comes from, right?!? Look in your CH 6 notes where we discussed Marginal Cost. When a firm chooses to produce ONE MORE unit of output, its TOTAL COST increases – but why? Think about it!

(49) Profit = \$43