

13 PERFECTLY COMPETITIVE SUPPLY

OVERVIEW

1. If the perfectly competitive firm makes an economic loss in the short run, it may shut down. If price is less than average variable cost, the firm will shut down. If price is greater than average variable cost, the firm will continue producing.
2. Supply for the perfectly competitive firm is marginal, cost above average variable cost.
3. In the long run, all factors are variable. If firms make an economic profit, then new firms will be attracted into the perfectly competitive industry, which will increase the market supply and lower the market price. The lower market price will reduce marginal revenue and hence profit for the firm.
4. If firms make an economic loss, firms will leave the industry in the long run. The reduction in supply will raise price and revenue. Thus in the long run equilibrium, the perfectly competitive firm earns a normal profit.
5. An efficient allocation of resources occurs when a good is produced at its lowest possible opportunity cost, where the average total cost is lowest. The perfectly competitive firm always produces efficiently in the long run.

MATCHING

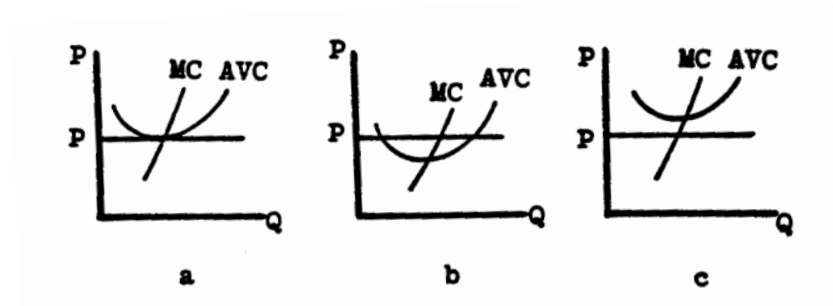
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|-------|----|-----------------------------------|----|---|
| _____ | 1. | shutdown decision | a | a good is produced at the lowest possible opportunity cost |
| _____ | 2. | shutdown point | b. | the lowest point on the average variable cost |
| _____ | 3. | efficient allocation of resources | c. | occurs when we are not at the minimum point of the average total cost |
| _____ | 4. | misallocation of resources | d. | the conditions under which the firm would decide to produce nothing |

TRUE-FALSE

- _____ 1. If a perfectly competitive firm has an economic profit, then it is efficient.
- _____ 2. In the short run, perfectly competitive firms are always efficient.
- _____ 3. In the long run, perfectly competitive firms are efficient.
- _____ 4. In the long run, if profits are negative, firms withdrawn from the industry, the supply of the good falls, and the price rises and the profit rises.
- _____ 5. In the long run, all perfectly competitive firms make a normal profit.
- _____ 6. In the short run, all perfectly competitive firms make positive profits.
- _____ 7. In the short run, the firm's supply is marginal cost above the average total cost.
- _____ 8. The supply curve for the perfectly competitive firm has a positive slope due to the law of diminishing returns.

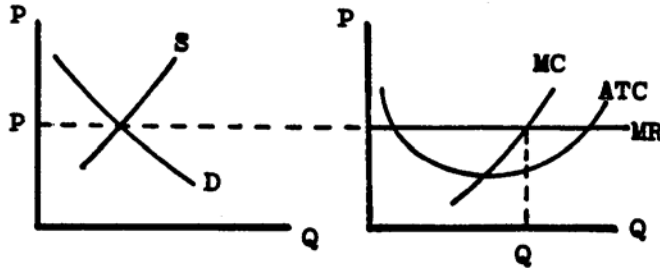
PROBLEMS

1. Which of the following graphs illustrates the shutdown price? _____



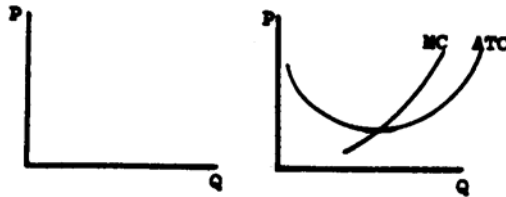
2. Explain why marginal cost above average variable cost is the perfectly competitive firm's supply curve.

3. Suppose that we have the following situation.

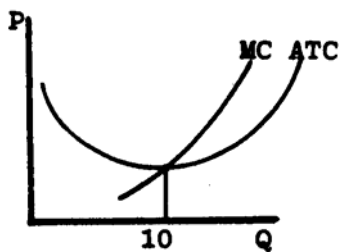


- Does the firm shown earn an economic profit or loss? _____
- What do you expect to happen to the number of firms in the industry? Why? _____
- What impact will your answer to 3b have on supply and demand in the industry? _____
- What will happen to the equilibrium price? _____
- What will happen to the firm's economic profit? _____

4. Draw the long run equilibrium situation between the perfectly competitive firm and the industry.



5.a. Find the efficient level of output for the firm below to produce. _____



- In the long run, what output is produced by the perfectly competitive firm? _____
- What is the relationship between your answer to 5a and 5b? What conclusion do you draw? _____

IN THE NEWS

1. The recycling center offers a nickel apiece for aluminum cans. After the Tournament of Roses Parade, entrepreneurs are out collecting aluminum cans to turn into cash. Here is a business where trash makes cash.
 - a. What is marginal revenue in this reading?

 - b. What is marginal cost in this reading?

 - c. In deciding whether or not to continue looking for more cans, what does the collector compare? _____
 - d. Would you expect to see more or fewer individuals picking up cans after the parade next year? _____

2. A local grocery store leases its building. The grocery store moved out, but continued to pay the lease of \$3,060 a month for more than three years because it hoped to eventually move back into the building.¹
 - a. What profit is the grocery store now making? _____
 - b. What cost must the firm cover to reopen and be no worse off? _____

3. Farmers can overcome some uncertainty about their financial future by selling their crop at the time of planting. When the crop is harvested, the farmer already has a buyer for the crop. Another uncertainty the farmer must solve is how much of each crop to plant. Once the price of the crops is established, the farmer can decide how much of each crop to plant.
 - a. How does the farmer decide how much of each crop to produce? _____
 - b. Would a farmer ever consider leasing more land to increase production? When?

4. Farmers are currently falling on hard times. The level of debt many have reached is staggering. There are foreclosures and auctions all over the Midwest. Farming seems to be a dying industry.
 - a. What must be the long run situation when farmers are leaving the industry?
 - b. Do you expect all farmers to be pushed out of business?
 - c. Right now, the economic forces are giving a message to the farmer. What is the message?

PRACTICE TEST

Circle the correct answer.

¹ Adapted from "Courts," in the Bowling Green Daily Sentinel-Tribune, Bowling Green, Ohio, August 21, 1985.

1. The average fixed cost of producing the next unit of your product is \$2 while the average variable cost is \$4. You can sell the unit for \$5 but make a \$1 loss. Your partner urges you to shut down. Should you?
 - a. Yes because you will minimize your losses.
 - b. No because the price covers the fixed cost.
 - c. No because the price covers the variable cost.
 - d. Not enough information to tell.

2. For a perfectly competitive firm, the short-run supply curve is:
 - a. the average total cost curve.
 - b. the average variable cost curve.
 - c. the marginal cost curve above the shutdown point.
 - d. the average total cost curve above the shutdown point.

3. Find the correct sequence of events in a perfectly competitive market.
 - a. Firms make economic loss, firms enter the market, market supply increases, and market price increases.
 - b. Firms make economic profit, firms leave the market, market supply decreases, and market price increases.
 - c. Firms make normal profit, firms enter the market, market supply decreases, and market price decreases.
 - d. Firms make economic profit, firms enter the market, market supply increases, and market price decreases.

4. If, in the long run, profits are normal for the perfectly competitive market, then:
 - a. the firm and market are in long-run equilibrium.
 - b. new firms enter the market.
 - c. firms leave the market.
 - d. firms erect barriers to entry.

5. Production at the lowest point on the average total cost curve:
 - a. is the lowest opportunity cost.
 - b. allocates resources efficiently.
 - c. means a normal profit for a profit maximizing perfectly competitive firm.
 - d. all of the above.

ANSWERS

Matching

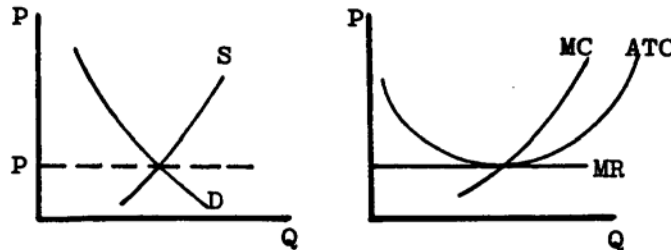
1. d
2. b
3. a
4. c

True-False

1. F
2. F
3. T
4. T
5. T
6. F
7. F
8. T

Problems

1. Graph a shows the shutdown price.
2. The marginal cost above the average variable cost is the supply since the quantity the firm will produce at each price is found on the marginal cost curve due to profit maximization. The supply is above the average variable cost because of the shutdown condition.
- 3.a. The firm earns an economic profit.
 - b. Because of positive economic profits, firms will be attracted to the industry so the number of firms in the industry will rise.
 - c. The addition of new firms to the industry will cause the supply curve to increase, to shift right.
 - d. The equilibrium price will fall.
 - e. The economic profit will be eliminated.
- 4.



- 5.a. 10 units of output.
 - b. The output where $MC = MR$, which in the long run is where the average total cost is minimum.
 - c. They are the same. The perfectly competitive firm will produce so that resources are efficiently allocated in the long run.

In the News

- 1.a. The marginal revenue is the price received for an extra can.
 - b. The marginal cost is the cost of the time used in searching for cans and transporting them to the recycling center.

- c. The collector compares the marginal revenue from another can to the marginal cost "producing" the can. d. If there are economic profits, then we would expect more can collectors next year. If there are economic losses, then fewer can collectors will appear.
- 2.a. An economic loss of \$3,060 a month, its fixed cost that it loses by shutting down.
 - b. The store would have to at least cover its average variable cost of production. Then its losses would be \$3,060 a month, its fixed cost. If the store could cover its average variable cost, plus \$3,060 a month, it would be making a normal profit. Any greater revenue results in economic profit.
- 3.a. The farmer can compare the cost of planting another acre to the expected revenue generated by the crop on that acre. If every crop has an expected revenue greater than expected cost, the farmer will plant the crop whose marginal profit is greatest. Because of uncertainty about the weather and disease, the farmer may decide to plant several different crops. Some of the crops may have a lower marginal profit than others, but if one crop fails, there are still other crops to sell.
 - b. If the expected revenue from the crop is greater than the expected cost of renting the land and producing the crop, then the farmer will try to rent more land. But if the expected revenue is greater than the expected cost for one farmer, it will be for others and they will all be bidding to rent the land. Thus the land market will adjust and the rent on the land will go up until there is no economic profit to be obtained by renting the land.
- 4.a. The farmers are facing an economic loss.
 - b. No, not all farmers will be pushed out of business. As some farmers are pushed out, the supply in the market is decreased causing the price of the output to rise. The remaining farmers will make a normal profit.
 - c. The economic forces are saying that those with an economic loss over a period of time should leave the industry. This is a bitter lesson for individuals who have been in farming families for a long time.

Practice Test

1.c., 2.c. ,3.d. ,4.a. ,5.d.