## Chapter 14

1.      Are the following markets likely to be perfectly competitive? Explain.

a.      The market for petrol

Answer:
Yes, many buyers and sellers (although the main suppliers may be a few dominant firms) and the product of different sellers is nearly identical.

b.      The market for blue jeans

Answer:
Probably not; many buyers and sellers but the product is not identical because of the importance of branding (eg Levi's) so each seller is not a price taker.

c.      The market for agricultural products such as wheat and milk

Answer:
Yes, many buyers and sellers and the product of different sellers is identical.

d.      The market for the shares of IBM

Answer:
Yes, many buyers and sellers and the product of different sellers is identical.

e.      The market for electricity

Answer:
No, few sellers (often only one). If there were multiple sellers, the product would be identical.

f.      The market for cable television

Answer:
No, few sellers. If there were multiple sellers, the product would be nearly identical.


2. a.    The following table contains information about the revenues and costs for Ernst's Golf Ball Manufacturing. All data are per hour. Complete the first group of columns which correspond to Ernst's production if P = €3. (TR = total revenue, TC = total cost, MR = marginal revenue, MC = marginal cost) Answer:

| Q | TR, P = €3 | TC | Profit | MR | MC | TR, P = €2 | Profit | MR |
|---|---|---|---|---|---|---|---|---|
| 0 | ___ | €1 | ___ |  |  | ___ | ___ |  |
|  |  |  |  | ___ | ___ |  |  | ___ |
| 1 | ___ | 2 | ___ |  |  | ___ | ___ |  |
|  |  |  |  | ___ | ___ |  |  | ___ |
| 2 | ___ | 4 | ___ |  |  | ___ | ___ |  |
|  |  |  |  | ___ | ___ |  |  | ___ |
| 3 | ___ | 7 | ___ |  |  | ___ | ___ |  |
|  |  |  |  | ___ | ___ |  |  | ___ |
| 4 | ___ | 11 | ___ |  |  | ___ | ___ |  |
|  |  |  |  | ___ | ___ |  |  | ___ |
| 5 | ___ | 16 |  |  |  | ___ | ___ |  |

| Q | TR, P = €3 | TC | Profit | MR | MC |
|---|---|---|---|---|---|
| 0 | €0 | €1 | −€1 |  |  |
|  |  |  |  | €3 | €1 |
| 1 | 3 | 2 | 1 |  |  |
|  |  |  |  | 3 | 2 |
| 2 | 6 | 4 | 2 |  |  |
|  |  |  |  | 3 | 3 |
| 3 | 9 | 7 | 2 |  |  |
|  |  |  |  | 3 | 4 |
| 4 | 12 | 11 | 1 |  |  |
|  |  |  |  | 3 | 5 |
| 5 | 15 | 16 | −1 |  |  |

b. If the price is €3 per golf ball, what is Ernst's optimal level of production? What criteria did you use to determine the optimal level of production?

Answer:
Optimal production is either two or three golf balls per hour. This level of production maximizes profit (at €2) and it is the level of output where $MC = MR$ (at €3).

c. Is €3 per golf ball a long-run equilibrium price in the market for golf balls? Explain. What adjustment will take place in the market for golf balls and what will happen to the price in the long run?

Answer:
No, because Ernst is earning positive economic profits of €2. These profits will attract new firms to enter the market for golf balls, the market supply will increase, and the price will fall until economic profits are zero.

d. Suppose the price of golf balls falls to €2. Fill out the remaining three columns of the table above. What is the profit-maximizing level of output when the price is €2 per golf ball? How much profit does Ernst's Golf Ball Manufacturing earn when the price of golf balls is €2?

Answer:
Optimal production is either one or two golf balls per hour. Zero economic profit is earned by Ernst.

| Q | TR, P = €3 | TC | Profit | MR | MC | TR, P = €2 | Profit | MR |
|---|---|---|---|---|---|---|---|---|
| 0 | €0 | €1 | −€1 | | | €0 | −€1 | |
| | | | | €3 | €1 | | | €2 |
| 1 | 3 | 2 | 1 | | | 2 | 0 | |
| | | | | 3 | 2 | | | 2 |
| 2 | 6 | 4 | 2 | | | 4 | 0 | |
| | | | | 3 | 3 | | | 2 |
| 3 | 9 | 7 | 2 | | | 6 | −1 | |
| | | | | 3 | 4 | | | 2 |
| 4 | 12 | 11 | 1 | | | 8 | −3 | |
| | | | | 3 | 5 | | | 2 |
| 5 | 15 | 16 | −1 | | | 10 | −6 | |

e.      Is €2 per golf ball a long-run equilibrium price in the market for golf balls? Explain. Why would Ernst continue to produce at this level of profit?

Answer:
Yes. Economic profits are zero and firms neither enter nor exit the industry. Zero economic profits means that Ernst doesn't earn anything beyond his opportunity costs of production but his revenues do cover the cost of his inputs and the value of his time and money.


f.      Describe the slope of the short-run supply curve for the market for golf balls. Describe the slope of the long-run supply curve in the market for golf balls.

Answer: The slope of the short-run supply curve is positive because when $P = €2$, quantity supplied is one or two units per firm and when $P = €3$, quantity supplied is two or three units per firm. In the long run, supply is horizontal (perfectly elastic) at $P = €2$ because any price above €2 causes firms to enter and drives the price back to €2.
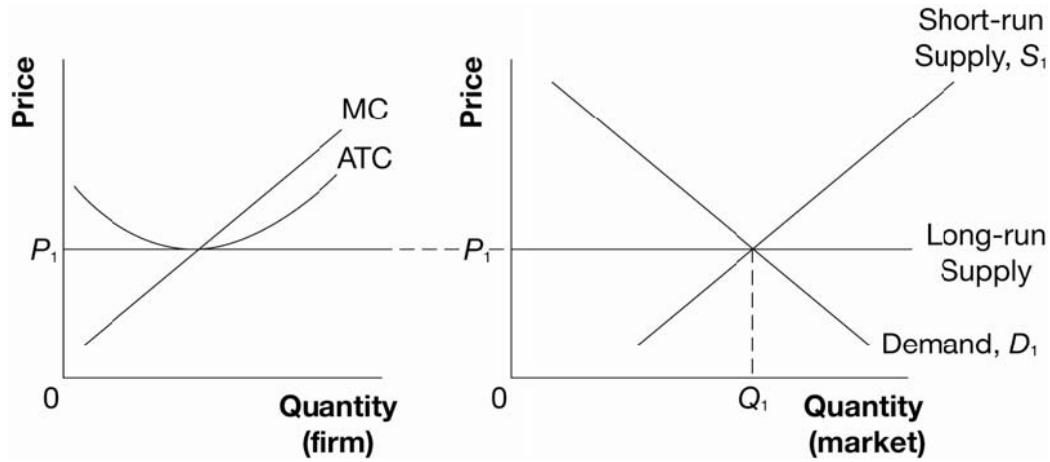

3. a.   In Exhibit 1, show the cost curves of a representative firm in long-run equilibrium along side the corresponding market equilibrium.
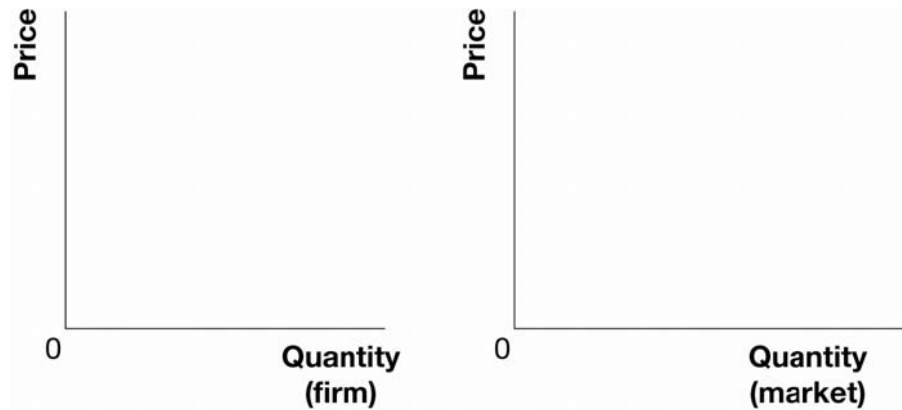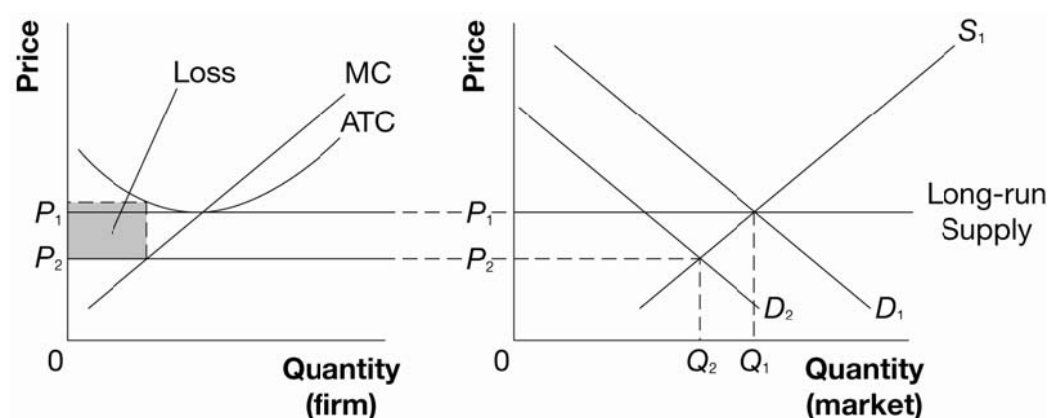
Exhibit 1
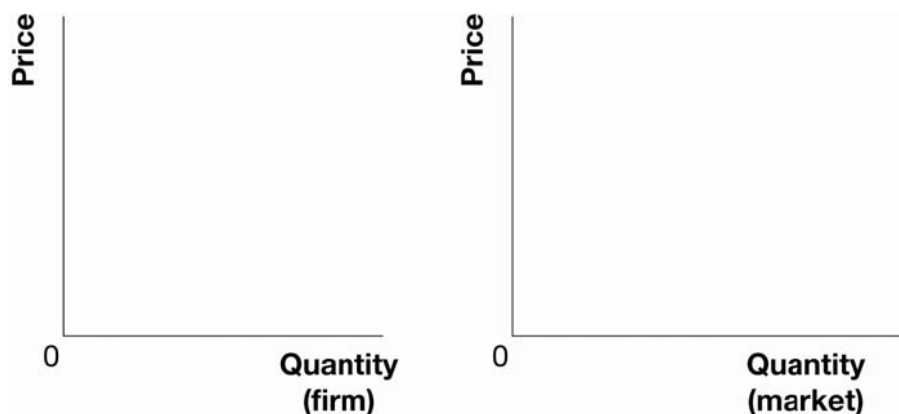


Answer: See Exhibit 5.


**Exhibit 5**

b.  Suppose there is a decrease in the demand for this product. In Exhibit 2, show the shift in demand in the market for this product and the corresponding profit or loss on the cost curves of the representative firm.
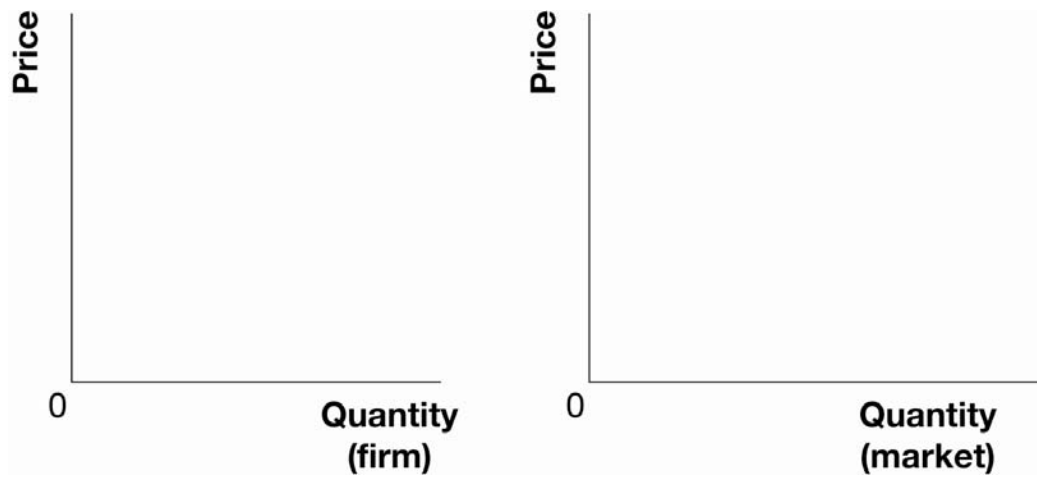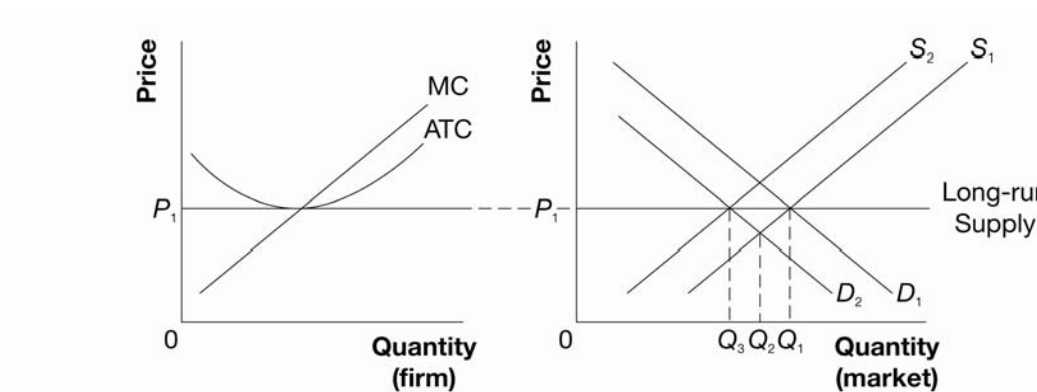
Exhibit 2



Answer: See Exhibit 6.

**Exhibit 6**



c.  In Exhibit 3, show the adjustment that takes place in order to return the market and firm to long-run equilibrium.

Exhibit 3



Answer: See Exhibit 7.

**Exhibit 7**



d.    After the market has returned to long-run equilibrium, is the price higher, lower, or the same as the initial price? Are there more, fewer, or the same number of firms producing in the market?

Answer:
The price has returned to its initial level. There are fewer firms producing in this market.