

Principles of Microeconomics

National Taiwan University

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Homework 4

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In this sheet the problem sets are answered sequentially.

1. **(C)** Refer to the table above. If the market is perfectly competitive, the equilibrium price of calculators is **\$12**.

Expl.: Note that the Reservation Values of Buyers form the market demand curve, and the Reservation Values of Sellers form the market supply curve. When the reservation values from both sides match, we obtain the equilibrium price, which is \$12 in this case.

2. **(B)** Refer to the table above. If the market is perfectly competitive, the equilibrium quantity of calculators is **5 units**.

Expl.: The equilibrium quantity induced by the equilibrium price is 5.

3. **(B)** If firms in a competitive industry independently operate to maximize profits, the **marginal costs** are eventually equalized across the firms.

Expl.: Note that the cond. of maximizing profit yields $MR = MC = P^*$. In (perfectly) competitive market, no single firm can affect the market price (p^*), so firms are facing the exact same MC .

4. **(C)** In a perfectly competitive market, if market price is higher than the average total cost of production, **new firms will enter the industry**.

Expl.: If economic profits are positive ($p^* > ATC$), then firms' entries occur until economic profits diminish to 0 ($p^* = ATC$).

5. **(B)** Without any restrictions in a perfectly competitive market, if there is a sudden rightward shift in the demand for a good, **sellers of the good will increase the quantity of the good supplied in the market**.

Expl.: Apparently, the rightward shift in the demand will elevate price. Now, because the changing factor is price, the suppliers might increase the quantity supplied (for them, such change makes movement along the supply curve) to meet the new demand, achieving the new equilibrium.

6. **Masumi should shift the production line of 3000 pairs of chopsticks to Japan.**

Expl.: Consider the following two cases,

#case 1: no shift $\rightarrow TC_1 = 10000 \times 0.8 = 8000$

#case 2: shift $\rightarrow TC_2 = 3000 \times 1.2 + 7000 \times 0.5 = 7100$

Apparently, Masumi should shift the production line because by doing so there occurs a lower total cost ($TC_2 < TC_1$).

7. (a) **The Surplus's Table**

	Before Rent Control	After Rent Control	Change
Consumer Surplus	$I + II$	$I + III$	$III - II$
Producer Surplus	$III + IV + V$	V	$-(III + IV)$
Social Surplus	$I + II + III + IV + V$	$I + III + IV$	$-(II + IV)$

(b) **The Surplus's changing**

- i. The direction of the change in **consumer surplus** is **unclear** because one has to consider the area size of III and II to determine the sign of $(III - II)$.
- ii. **Producer surplus** would **definitely fall** because $-(III + IV) < 0$.
- iii. **Social surplus** would **definitely fall** because $-(II + IV) < 0$.