Exercise walk-through

Market Equilibrium and Consumer and Producer Surplus ▪ 2.6

eXercise

You must be able to

- determine the **equilibrium price** and **quantity** where demand meets supply
- calculate **consumer surplus 消费者剩余** and **producer surplus 生产者剩余**
- define **total surplus 总剩余** and explain **allocative efficiency 配置效率**

Method — Surplus areas

- **Consumer surplus** = area **below** the demand curve and **above** the price (what buyers gain).
- **Producer surplus** = area **above** the supply curve and **below** the price (what sellers gain).

Method — Allocative efficiency

Total surplus (CS + PS) is greatest at the competitive equilibrium, where **marginal benefit** equals **marginal cost** — the allocatively efficient quantity.

Practice 2.1 ▪ 1 mark

Define consumer surplus.

Solution 2.1

Method: Surplus areas

Worked steps

the difference between what buyers are willing to pay and what they actually pay **B1**.

Practice 2.2 ▪ 1 mark

Define producer surplus.

Solution 2.2

Method: Surplus areas

Worked steps

the difference between the price sellers receive and the lowest they would accept **B1**.

Practice 2.3 ▪ 1 mark

A good sells at $\$10$; a buyer was willing to pay $\$16$. Find the consumer surplus on that unit.

Solution 2.3

Method: Surplus areas

Worked steps

$16 - 10 = \$6$ **B1**.

Exam-style 3.1 ▪ 1 mark

Consumer surplus is the area

- **A** above the demand curve
- **B** below demand and above the price
- **C** below the supply curve
- **D** above the price and below supply

Solution 3.1

Method: Surplus areas

A above the demand curve

B below demand and above the price ✓

C below the supply curve

D above the price and below supply

Worked steps

B.

Exam-style 3.2 ▪ 1 mark

A competitive market is allocatively efficient where

A $MB > MC$

B $MB = MC$

C $MB < MC$

D the price is zero

Solution 3.2

Method: Allocative efficiency

A $MB > MC$

B $MB = MC$ ✓

C $MB < MC$

D the price is zero

Worked steps

B.

Exam-style 3.3 ▪ 1 mark

In a market, the equilibrium price is $\$8$. On one trade, the seller would accept $\$5$ and the buyer would pay $\$12$.

(a) Find the producer surplus on that trade.

(b) Find the consumer surplus.

(c) Find the total surplus.

Solution 3.3

Method: Surplus areas

Worked steps

(a) $8 - 5 = \$3$ **B1**. (b) $12 - 8 = \$4$ **B1**. (c) $3 + 4 = \$7$ **B1**.