

Exercise walk-through

Marginal Analysis and Consumer Choice ■ 1.6

eXercise

You must be able to

- define **marginal benefit** 边际收益 and **marginal cost** 边际成本 and use marginal analysis
- apply the **law of diminishing marginal utility** 边际效用递减
- state and apply the **utility-maximizing rule** — equalize $\frac{MU}{P}$ across goods

Method — Marginal analysis

Do one more unit while its **marginal benefit** exceeds its **marginal cost**; stop where $MB = MC$.

Method — Diminishing marginal utility

Each extra unit consumed gives **less** added satisfaction than the one before.

Method — The utility-maximizing rule

Spend a fixed budget so that the marginal utility per dollar, $\frac{MU}{P}$, is **equal** across all goods. If $\frac{MU_X}{P_X} > \frac{MU_Y}{P_Y}$, buy more X.

Practice 2.1 ■ 1 mark

State the law of diminishing marginal utility.

Solution 2.1

Method: Diminishing marginal utility

Worked steps

each additional unit consumed adds less extra satisfaction than the previous one **B1**.

Practice 2.2 ■ 1 mark

State the utility-maximizing rule.

Solution 2.2

Method: The utility-maximizing rule

Worked steps

allocate spending so that $\frac{MU}{P}$ is equal for all goods **B1**.

Practice 2.3 ■ 2 marks

A consumer buys where marginal benefit equals marginal cost. Explain why buying one more unit would lower net benefit.

Solution 2.3

Method: Marginal analysis

Worked steps

beyond $MB = MC$, the next unit's marginal cost exceeds its marginal benefit **B1**, so it subtracts from total net benefit **B1**.

Exam-style 3.1 ■ 1 mark

A consumer maximizes total net benefit where

A $MB > MC$

B $MB = MC$

C $MB < MC$

D the price is lowest

Solution 3.1

Method: Marginal analysis

A $MB > MC$

B $MB = MC$



C $MB < MC$

D the price is lowest

Worked steps

B.

Exam-style 3.2 ■ 1 mark

The law of diminishing marginal utility says that extra units give

A more added satisfaction

B less added satisfaction

C zero cost

D a higher price

Solution 3.2

Method: Diminishing marginal utility

A more added satisfaction

B less added satisfaction 

C zero cost

D a higher price

Worked steps

B.

Exam-style 3.3 ■ 2 marks

Good X has $MU = 20$ and $P = \$4$. Good Y has $MU = 15$ and $P = \$5$.

(a) Find $\frac{MU}{P}$ for each good.

(b) State which good the consumer should buy more of.

Solution 3.3

Method: The utility-maximizing rule

Worked steps

(a) X: $\frac{20}{4} = 5$; Y: $\frac{15}{5} = 3$ **M1** **A1**. (b) buy more of good X (its MU/P is higher) **B1**.