

Exercise walk-through

Utility ■ 7.1

eXercise

You must be able to

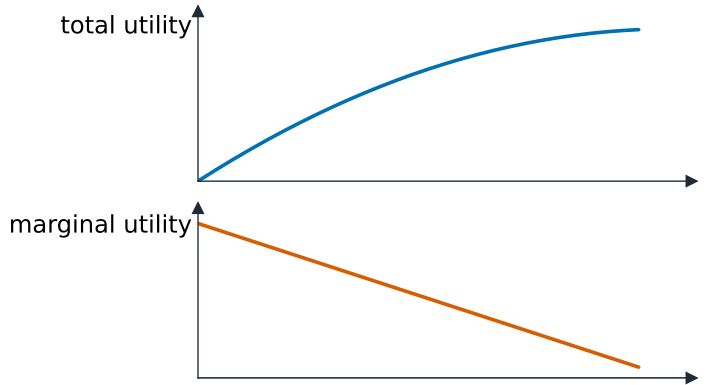
- define total and marginal utility
- explain diminishing marginal utility and why demand slopes downward
- apply and evaluate the equi-marginal principle

Method — Utility and consumer choice

- **Total utility** 总效用: satisfaction from all units; **marginal utility** 边际效用: satisfaction from one more unit.
- **Diminishing marginal utility** 边际效用递减: each extra unit adds less → demand slopes **down**.
- **Equi-marginal principle**: utility is maximised when $\frac{MU_A}{P_A} = \frac{MU_B}{P_B}$.

Answer shapes: AO1 + AO2 + AO3 (analysis) + AO4 (judgement, for evaluate questions).

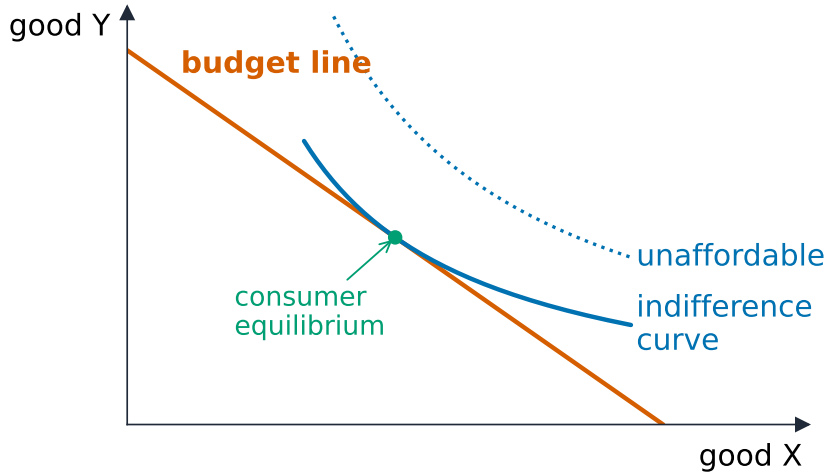
Method — Utility and consumer choice



diminishing MU: each extra unit adds less · TU flattens as $MU \rightarrow 0$

Total utility rises but flattens as marginal utility falls

Method — Utility and consumer choice



Practice 2.1 ■ 2 marks

Define the term *marginal utility*.

Solution 2.1

Method: Utility and consumer choice

Worked steps

the extra satisfaction (utility) gained from consuming one more unit of a good (2 for a clear definition; 1 for a partial idea).

Practice 2.2 ■ 2 marks

State the law of diminishing marginal utility.

Solution 2.2

Method: Utility and consumer choice

Worked steps

as more of a good is consumed, each extra unit gives less extra satisfaction than the one before (2 for a clear statement; 1 for a partial idea).

Practice 2.3 ■ 1 mark

State the equi-marginal condition for two goods A and B.

Solution 2.3

Method: Utility and consumer choice

Worked steps

$$\frac{MU_A}{P_A} = \frac{MU_B}{P_B} \quad (1).$$

Exam-style 3.1 ■ 1 mark

A consumer maximises total utility from two goods when:

- A** the price of each good is equal
- B** the marginal utility of each good is equal
- C** the marginal utility per dollar spent on each good is equal
- D** total utility from each good is equal

Solution 3.1

Method: Utility and consumer choice

- A the price of each good is equal
- B the marginal utility of each good is equal
- C the marginal utility per dollar spent on each good is equal 
- D total utility from each good is equal

Worked steps

C. Utility is maximised when the marginal utility per dollar is equal across goods.

Exam-style 3.2 ■ 6 marks

Explain how diminishing marginal utility helps explain the downward-sloping demand curve.

Solution 3.2

Method: Utility and consumer choice

Worked steps

[6] AO1 1 + AO3 up to 5 — each extra unit gives less marginal utility, so it is worth less to the consumer → they will only buy more units if the price is lower → quantity demanded rises as price falls → the demand curve slopes downward.

Exam-style 3.3 ■ 12 marks

Discuss the usefulness of marginal utility theory in explaining consumer behaviour.

Solution 3.3

Method: Utility and consumer choice

Worked steps

[12] AO1/AO2/AO3 up to 8 + AO4 up to 4. **Useful:** it explains the downward demand curve and consumer equilibrium, and underpins the idea of consumer surplus. **Limits:** utility cannot be measured in numbers, consumers do not calculate like this, and it ignores habit, advertising and bounded rationality. **Judgement:** the theory gives useful insight into choice, but behavioural factors mean it is a simplification — its value depends on the decision being modelled.