A-LEVEL ECONOMICS • EXERCISE SHEET

7.2 Indifference curves and budget lines

Name: ____________ Class: ________ Date: __________ **Total: 24 marks**

Objective

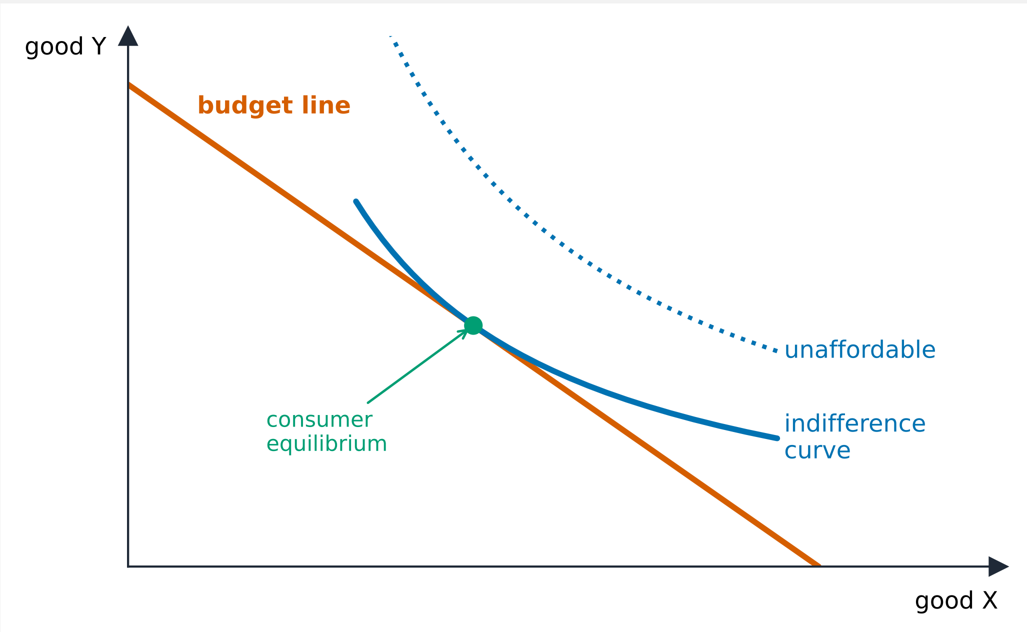
Build the skills to answer exam questions on **indifference curves and budget lines** 无差异曲线与预算线—**consumer equilibrium** 消费者均衡, and the **income and substitution effects** 收入效应与替代效应.

You must be able to:

- draw an indifference curve and a budget line
- find consumer equilibrium (tangency)
- explain the income and substitution effects (normal, inferior, Giffen goods)

1 Worked examples

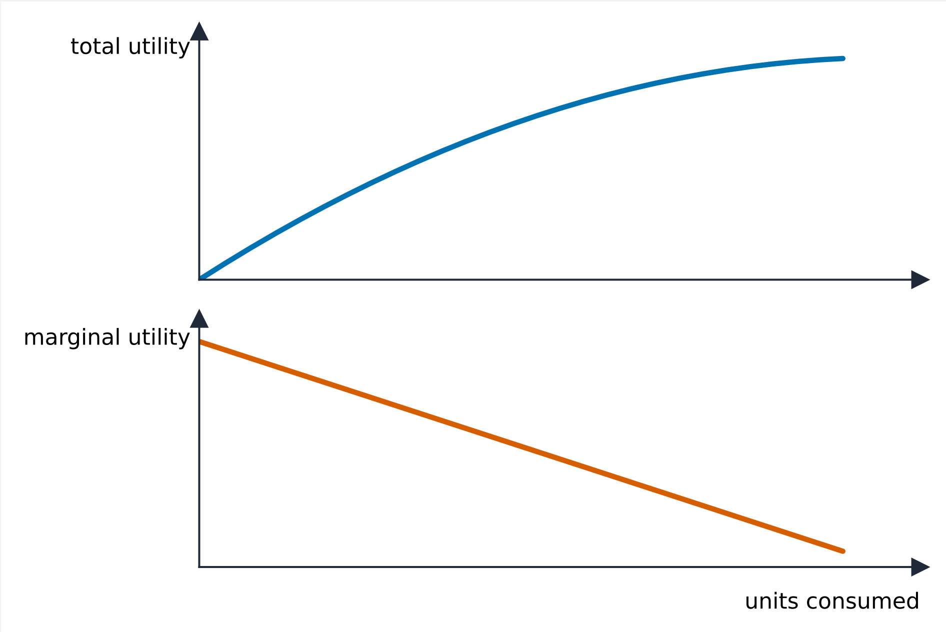
■ Consumer equilibrium



Indifference curve = equal utility; budget line = what is affordable

- **Indifference curve** 无差异曲线: combinations giving the **same** utility (slopes down, bows in).
- **Budget line** 预算线: combinations just affordable; **equilibrium** at the tangency point.

- A price fall raises quantity via two effects: **substitution effect** 替代效应 (switch to the cheaper good) + **income effect** 收入效应 (real income rises).
- **Giffen good** 吉芬品: a strong negative income effect → demand rises as price rises.



Behind the indifference map: diminishing marginal utility is why the curves bow inward

Answer shapes: an **Explain [up to 8]** answer may use an indifference diagram (AO3); **Discuss [12]** adds a judgement (AO4).

2 Practice

2.1 Define the term *indifference curve*. [2]

2.2 State where **consumer equilibrium** occurs on an indifference diagram. [1]

2.3 State the difference between the income effect and the substitution effect. [2]

3 Exam-style questions

3.1 Consumer equilibrium occurs where the budget line is: [1]

- **A** above the highest indifference curve
- **B** tangent to the highest reachable indifference curve
- **C** parallel to the indifference curve
- **D** at the origin

3.2 Using an indifference-curve diagram, explain how a consumer reaches equilibrium. [8]

3.3 Explain, using income and substitution effects, why the demand for a Giffen good slopes upward. [8]

4 Go further

You are now ready for the real exam questions on this subtopic. Open the **7.2 Indifference curves and budget lines** past-paper sheet in the Library, or try these in **Practice mode**:

- 9708/32 N25 —Q2 (indifference curves)
- 9708/34 N25 —Q2 (income and substitution effects)

Solutions

Economics answers are marked by **level of response** against the assessment objectives: award **AO1** knowledge, **AO2** application, **AO3** analysis and **AO4** evaluation.

2.1 a curve showing all combinations of two goods that give a consumer the same total utility (2 for a clear definition; 1 for a partial idea).

2.2 where the budget line is tangent to the highest reachable indifference curve (1).

2.3 the substitution effect is the change in quantity from a good becoming relatively cheaper; the income effect is the change from the consumer's real income rising (2 for a clear difference; 1 for a partial idea).

3.1 B. Equilibrium is at the tangency with the highest reachable indifference curve.

3.2 *[8]* AO1 1 + **AO3 diagram up to 4** (budget line, indifference map, tangency) + AO2/AO3 up to 3 —the consumer wants the highest utility they can afford → they reach the highest indifference curve the budget line touches → at the tangency the slope of the budget line equals the slope of the indifference curve (the marginal rate of substitution equals the price ratio).

3.3 *[8]* AO1 1 + AO3 up to 7 —when a Giffen good's price falls, the substitution effect raises quantity, but it is a very inferior good, so the income effect (higher real income → buy less of it) is **stronger** and works the opposite way → the net effect is that quantity demanded falls as price falls → demand slopes upward.