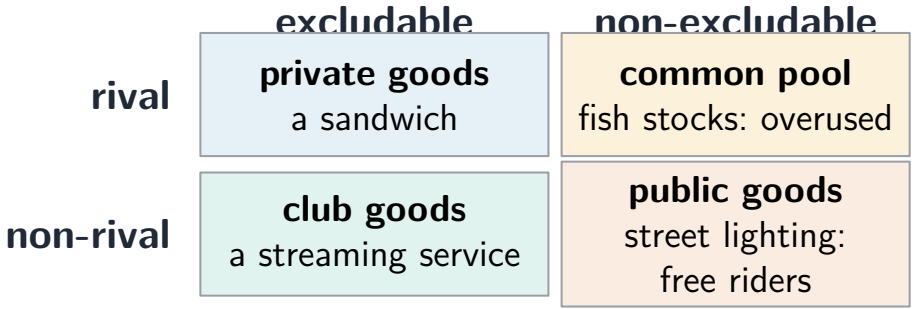
Exercise walk-through

3.2
Public goods and the market's inability to achieve equity

International Baccalaureate · IB Diploma · Economics · HL

Figure: Market failure and equity



non-rival + non-excludable → free-rider problem → the market under-provides or provides none

- Classify goods by rivalry and excludability.
- Match each part of the diagram to the text.

Data-response practice (Paper 2 style) (2)

- (d) Calculate the cost to Firm K of each way to cover its extra 0.2 million tonnes, and state which it will choose. [2]
- (e) Using information from the text and your knowledge of economics, evaluate the use of tradable permits, compared with a **carbon tax** , to reduce carbon emissions. [15]
- **Certainty of quantity.** A permit scheme fixes the total emissions (the cap), and the market finds the price. A **carbon tax** fixes the price, and the quantity is uncertain, because the government does not know how strongly firms will respond. For a climate target in tonnes, the cap is the more direct tool.

Key terms (2)

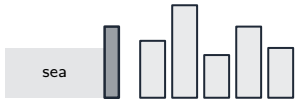
- **Common pool resource**: a resource that is rival but **non-excludable**.
- **Public good**: a good that is **non-rival** and non-excludable.
- **Free-rider problem**: people use a good without paying, so the market under-provides it.
- **Gini coefficient**: a measure of income inequality from 0 (equal) to 1 (completely unequal).

Exercises 2.1·2.2

2.1 Distinguish between **non-rivalry** and **non-excludability**. [2]



2.2 Explain why a flood barrier protecting a city is unlikely to be provided by a private firm. [2]



Exercises 2.1·2.2

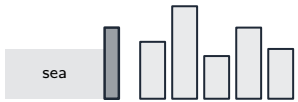
2.1 Distinguish between **non-rivalry** and **non-excludability**. [2]



2.1

non-rivalry: one person's consumption does not reduce the amount available to others; non-excludability: it is not possible (or too costly) to stop people who have not paid from using it

2.2 Explain why a flood barrier protecting a city is unlikely to be provided by a private firm. [2]

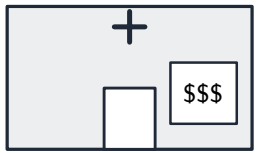


2.2

everyone in the city is protected whether they pay or not, so people free ride; the firm cannot earn revenue to cover its costs, so it will not provide it: missing market

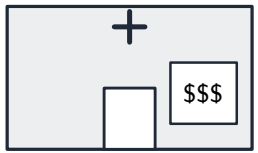
Exercise 2.3

2.3 Explain **two** reasons why a free market may not achieve an equitable distribution of healthcare. [4]



Exercise 2.3

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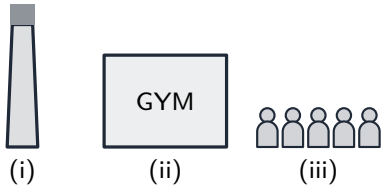


2.3

healthcare is allocated by ability to pay; people on low incomes may not afford treatment they need, so need and use differ; illness itself reduces income (people cannot work), making the problem worse; patients have less information than doctors, so they may not choose well; private insurers may refuse high-risk people

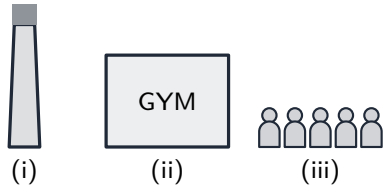
Exercise 2.4

2.4 Classify each as a private good, public good, common pool resource or club good, with a reason: **(i)** a lighthouse; **(ii)** a gym with a membership fee; **(iii)** a city park's free grass area during a festival. [3]



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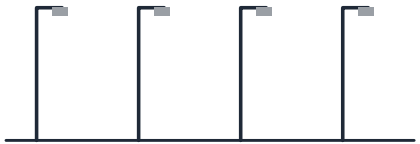


2.4

(i) public good: non-rivalrous and non-excludable; (ii) club good: excludable by the fee, non-rivalrous until crowded; (iii) common pool resource when crowded: rivalrous (space runs out) but non-excludable

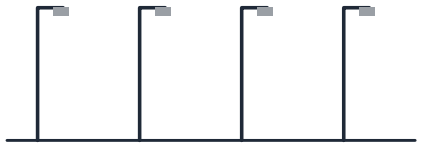
Exercise 2.5

2.5 A government spends $45 million a year on street lighting for 1.5 million people. Calculate the cost per person, and explain why this cost is not the same as the benefit people receive. [3]



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2.5

$45\,000\,000 \div 1\,500\,000 =$ **\$30** per person; the benefit (safety, less crime, longer trading hours) is valued differently by each person; because people cannot be charged, there is no price to show how much they value it, so the government must estimate it

Exercise 3.1 (a)

3.1 Many countries provide primary schooling free of charge.

(a) Define **equity**. [2]

Exercise 3.1 (a)

3.1 Many countries provide primary schooling free of charge.

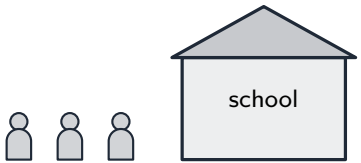
(a) Define **equity**. [2]

(a) fairness; in the distribution of income, wealth or access to goods and services, which is not the same as equality

Exercise 3.1 (b)

3.1 Many countries provide primary schooling free of charge.

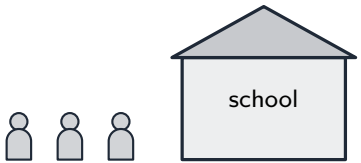
(b) Evaluate free provision of schooling as a way to make the economy more equitable. [6]



Exercise 3.1 (b)

3.1 Many countries provide primary schooling free of charge.

(b) Evaluate free provision of schooling as a way to make the economy more equitable. [6]



(b) all children get schooling whatever their family's income; education raises future skills and earnings, so it reduces inequality over time; positive externalities also benefit society; but it has a large opportunity cost and is paid for by taxes; quality may differ between rich and poor areas, so inequality may remain; richer families may still buy extra tutoring; judgement: a strong long-run policy, best combined with transfers and good-quality schools in poor areas

Exercise 3.2

3.2 A government contracts a private firm to build and run a toll-free motorway, paying it from taxes.

Explain **two** advantages and **one** disadvantage of contracting out the provision of a public good. [4]



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3.2

advantages, any two: the private firm may be more efficient / have more expertise; the government avoids large up-front borrowing or building costs; clear contract targets can improve quality; disadvantage, any one: the firm aims for profit, so it may cut quality or charge high fees in the contract; the contract may be hard to monitor