

3 In the Netherlands the cross-elasticity of demand for organic meat with respect to a change in the price of non-organic meat is +0.5.

Which **one** of the following can be deduced from this information?

- A Organic meat and non-organic meat are substitutes
- B Organic meat and non-organic meat are normal goods
- C Organic meat and non-organic meat are unrelated goods
- D Organic meat and non-organic meat are complements

(Total for Question 3 = 1 mark)

1 Which **one** of the following has an opportunity cost of zero?

- A An economic good
- B A free good
- C A public good
- D A capital good

(Total for Question 1 = 1 mark)

2 The table shows the changes in electricity generation from two sources in selected countries between 2019 and 2020.

	Coal	Solar
Italy	-31%	+12%
India	-20%	+6%
South Korea	-11%	+26%
USA	-40%	+45%

Which **one** of the following can be deduced from the table?

- A The largest percentage decline in the use of the non-renewable resource for electricity generation was in South Korea
- B The largest percentage increase in the use of the renewable resource for electricity generation was in the USA
- C In all countries the use of the non-renewable resource for electricity generation increased
- D In all countries the use of the renewable resource for electricity generation decreased

(Total for Question 2 = 1 mark)

- 3 The table shows the estimated price elasticity of demand for different car types in Norway.

Car type	Price elasticity of demand
Diesel	-0.99
Petrol	-1.08
Electric	-1.27

Which **one** of the following can be deduced from the table?

- A** Demand for all three car types is price inelastic
- B** Demand for all three car types is price elastic
- C** An increase in the price of diesel cars will result in an increase in the total revenue for diesel car manufacturers
- D** An increase in the price of electric cars will result in an increase in the total revenue for electric car manufacturers

(Total for Question 3 = 1 mark)

- 3 In North America the cross elasticity of demand for coffee with respect to a change in the price of milk was estimated to be -0.04 .

Which **one** of the following can be deduced from this information?

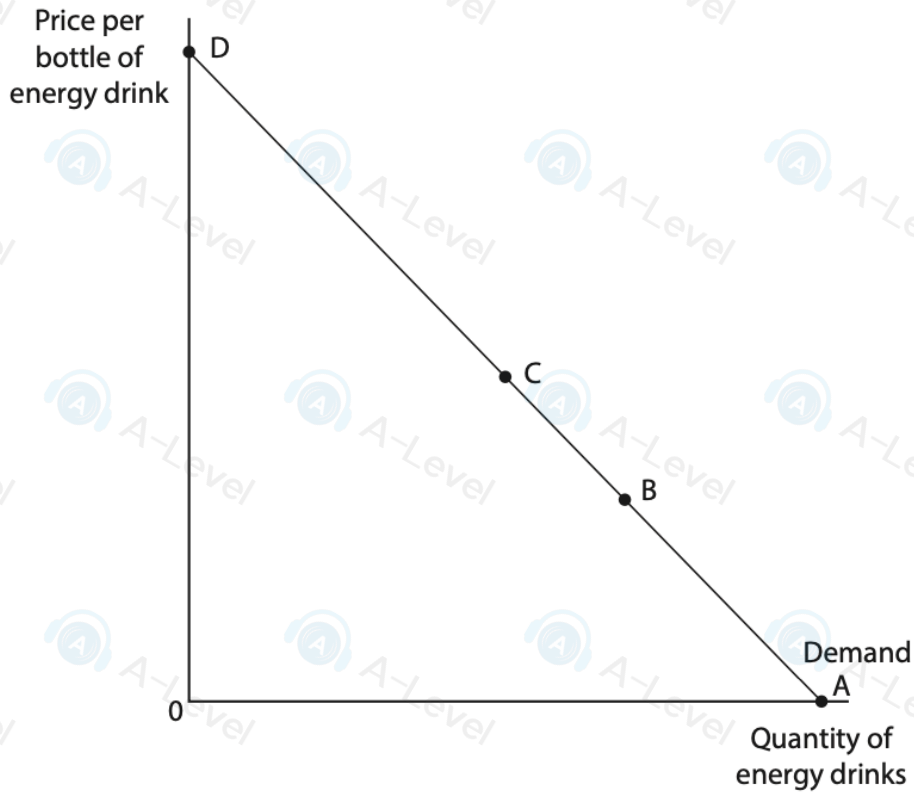
- A** Coffee and milk are inferior goods
- B** Coffee and milk are substitute goods
- C** Coffee and milk are unrelated goods
- D** Coffee and milk are complementary goods

(Total for Question 3 = 1 mark)

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4 The diagram shows the demand curve for bottled energy drinks.



Which **one** of the following points has the value of -1 for price elasticity of demand?

- A
- B
- C
- D

(Total for Question 4 = 1 mark)

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11 Between 2019 and 2022 the number of international visitors to Czechia decreased from 6.8 million to 4.5 million.

Ceteris paribus, explain the likely impact on producer surplus in the hotel market in Czechia.

Illustrate your answer with a supply and demand diagram.

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11 Lithuania's population decreased from 3.7 million in 1989 to 2.9 million in 2015.

Ceteris paribus, explain the likely impact of this change in population on Lithuania's production possibility frontier (PPF).

Illustrate your answer with a diagram.

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- 10 The table shows the number of new car sales and the average annual earnings per person in China for 2021 and 2022.

Year	Number of new car sales	Average annual earnings per person
2021	21.52 m	¥106 837
2022	23.56 m	¥114 029

Ceteris paribus, calculate the income elasticity of demand for new cars. Show your workings.

- 9 In 2022 the Government of Zimbabwe introduced a tax on energy drinks of \$0.05 per litre and a tax on smartphones of \$50 per device. In 2023 the Government increased its VAT (consumption tax) rate from 14.5% to 15%.

With reference to Zimbabwe, explain the difference between a 'specific tax' and an 'ad valorem tax'.

- 9 **Statement 1:** "Between 2009 and 2019 extreme weather events and climate-related disasters cost the world economy \$1.5 trillion." World Meteorological Organization.

Statement 2: "80% of those surveyed think polluters should pay for their pollution through additional taxes." Survey for the World Economic Forum.

With reference to both statements, explain the difference between normative statements and positive statements.

- 12 (a) Define the term 'speculation'. (Extract A, line 7)

(2)

- (b) With reference to Figure 1 and Extract A, analyse **one** demand factor and **one** supply factor that caused the price of uranium to more than double between January 2020 and September 2023.

Illustrate your answer with a supply and demand diagram.

(6)

- (c) With reference to Extract B, explain whether the supply of nuclear reactors is price elastic or price inelastic.

(4)

- (d) With reference to Extract C, examine **two** microeconomic effects of the introduction of an indirect tax on the production of coal.

(8)

- (e) With reference to Extract B, discuss the likely effects of subsidies paid to the nuclear power industry on consumers **and** governments.

Illustrate your answer with an appropriate diagram.

(14)

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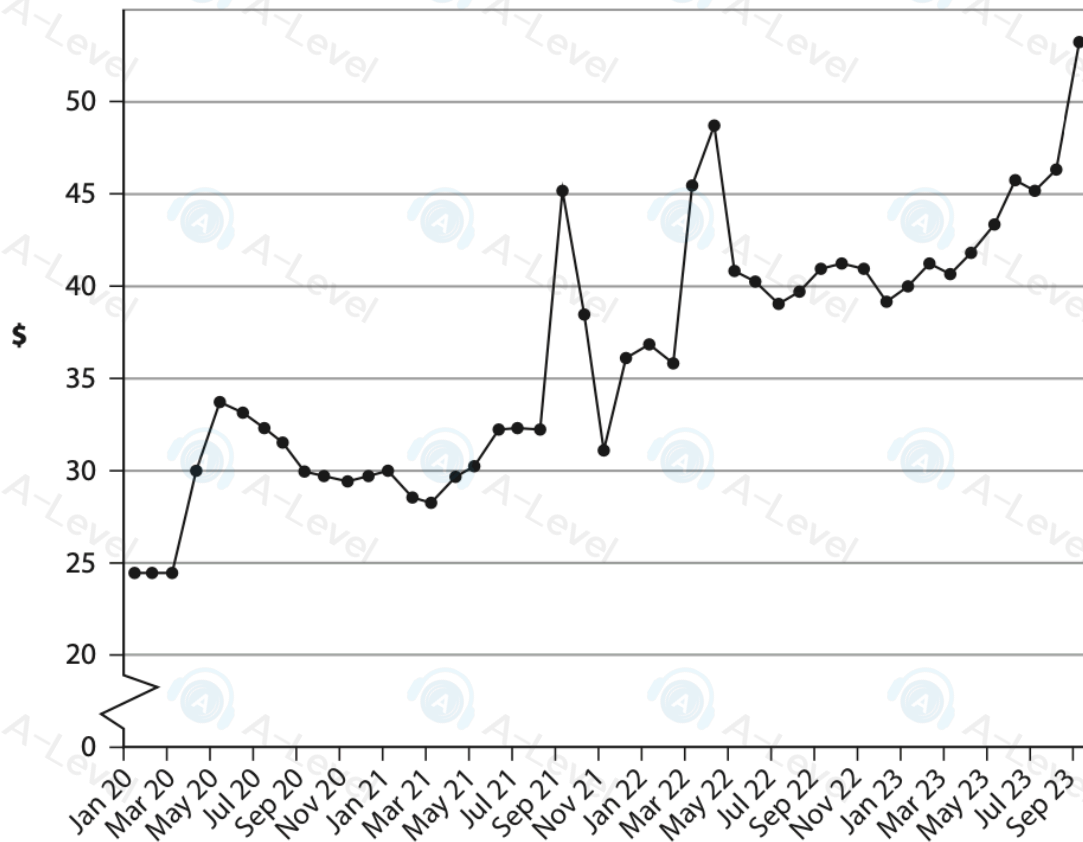
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Sources for use with Section C.

Sources of energy generation

Figure 1: World price of uranium, dollars per pound (lb), January 2020 to September 2023



Extract A Price of uranium

Between January 2020 and September 2023 the price of uranium more than doubled.

Uranium is used to generate nuclear power. Many countries have been increasing nuclear power generation for two significant reasons:

- in response to the unstable supply of gas and the rise in its price
- the need to meet international agreements on reducing carbon emissions.

This increase in nuclear power generation led to speculation in the market for uranium. Speculators bought significant amounts of uranium accounting for 25% of annual demand.

Over the same period, the production of uranium was affected by various factors:

- In France production was disrupted by a lack of critical chemicals
- Kazakhstan, the world's largest supplier, had problems with shipping its uranium out of the country
- Canada had problems at two mines that reduced its production by 9%.

Extract B Nuclear reactors

In August 2023 there were 441 nuclear power reactors operating in 33 countries. They jointly generated 10% of the world's electricity. By 2050 nuclear capacity is expected to increase by 43%, when an additional 60 nuclear reactors will have become active. The replacement of coal and gas-fired power stations with nuclear power will contribute to a 13% reduction in carbon emissions by 2050. It took, on average, 7.5 years to construct each of the 441 nuclear reactors. However, one reactor in Argentina took 33 years to construct.

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Many governments are subsidising the nuclear power industry. For example:

- In 2021 the UK Government provided subsidies of £1.7 billion
- In 2023 the Government of China provided \$17 billion in subsidies for the building of six new reactors
- The Government of South Korea will spend \$515 million subsidising the nuclear industry.

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Extract C Coal tax in Indonesia

The Government of Indonesia plans to introduce an indirect tax on the production of coal. In 2018 coal accounted for 40% of the energy generated in the country and caused 95 155 premature deaths. By taxing coal, the Government can use the revenue to compensate those who are negatively affected. It will also create an incentive for electricity generators to switch from coal to renewable sources of energy. This tax is expected to raise \$3.6 billion per year. In 2019 there were 1.96 million people employed in coal mining and coal exports earned \$19 billion per year.

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