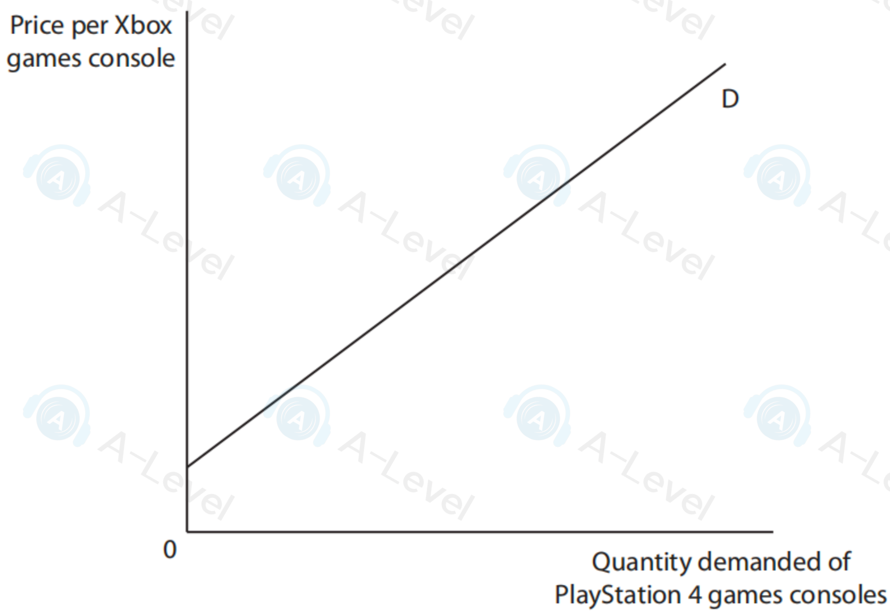
3 Forward markets are available at one-month, three-month and one-year intervals.

Which **one** of the following is most likely to have a forward market?

- ☒ **A** Furniture
- ☒ **B** Currencies
- ☒ **C** Smartphones
- ☒ **D** Clothing

(Total for Question 3 = 1 mark)

5 The diagram shows the relationship between the price of Xbox games consoles and the quantity demanded of PlayStation 4 games consoles.



It can be deduced from the diagram that the two goods are

- ☒ **A** complementary goods
- ☒ **B** inferior goods
- ☒ **C** substitute goods
- ☒ **D** unrelated goods

(Total for Question 5 = 1 mark)

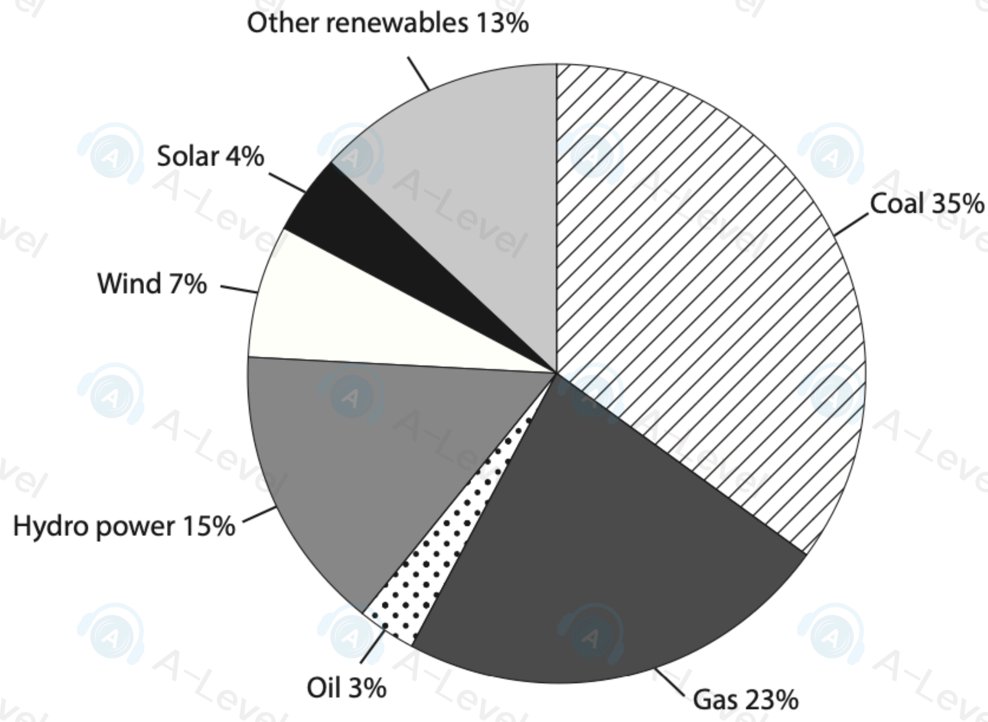
5 In July 2022 Amazon, the online retailer, announced that it would increase the price of its Amazon Prime subscription service from £79 to £95 per year. This resulted in 590 000 UK consumers cancelling their Amazon Prime subscriptions.

Which **one** of the following is the most likely explanation of this behaviour?

- ☒ **A** These consumers experienced inertia
- ☒ **B** These consumers experienced habitual behaviour
- ☒ **C** These consumers aimed to maximise their utility
- ☒ **D** These consumers aimed to minimise their utility

(Total for Question 5 = 1 mark)

5 The chart shows the resources used to generate electricity globally in 2022.



(Source: https://www.worldenergydata.org/world-electricity-generation/)

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

☒ **A** Electricity was mostly generated using renewable resources

☒ **B** Electricity was mostly generated using non-renewable resources

☒ **C** 58% of electricity was generated using non-renewable resources

☒ **D** 26% of electricity was generated using renewable resources

(Total for Question 5 = 1 mark)

6 The table shows the estimated income elasticity of demand for various items.

	Income elasticity of demand
Cars	+2.46
Furniture	+1.48
Petrol	+0.48
Public transport	−0.37

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

☒ **A** A 10% increase in income leads to a 24.6% decrease in demand for cars

☒ **B** A 10% increase in income leads to a 14.8% decrease in demand for furniture

☒ **C** A 5% increase in income leads to a 2.4% increase in demand for petrol

☒ **D** A 5% increase in income leads to a 1.85% increase in demand for public transport

(Total for Question 6 = 1 mark)

2 A clothing manufacturer originally organised production so that each worker made a garment from start to finish. However, in 2020, the manufacturer introduced the division of labour to garment production.

Which **one** of the following is a likely advantage of introducing the division of labour?

☒ **A** An increase in boredom

☒ **B** An increase in the cost of making each garment

☒ **C** An increase in output per worker

☒ **D** An increase in the time required for training

(Total for Question 2 = 1 mark)

7 In the USA the income elasticity of demand for margarine is –0.2. In April 2021 real incomes increased by 15%.

Draw a diagram to illustrate the likely impact of this increase in real incomes on the equilibrium price and quantity of margarine.

7 In Myanmar the price of rice was 250 000 kyats per tonne in October 2021. However, many rice farmers made a loss because of rising costs of production. In response, the Myanmar Government introduced a minimum price for rice of 270 000 kyats per tonne.

Draw a diagram to illustrate the impact of the introduction of this minimum price for rice.

7 According to the World Health Organization vaccinations prevent more than 2 million deaths each year. However, in 2014 there were 18.7 million infants not receiving any vaccinations.

Draw an externalities diagram to illustrate the underconsumption of vaccinations.

8 The table shows the estimated price elasticity of demand for energy in selected countries.

Country	Price elasticity of demand for energy
Australia	–0.04
Japan	–0.12
India	–0.15
Philippines	–0.35

With reference to the table, explain **one** factor that is likely to influence the price elasticity of demand for energy.

7 In 2023 the Government of France considered imposing an indirect tax on aviation fuel for those using private jets. This was to be set at a rate of €0.65 per litre.

Draw a diagram to illustrate the impact of imposing this indirect tax on aviation fuel for private jets.

12 (a) Define the term 'supply' (Extract A, line 8).

(2)

(b) With reference to Extract A, explain **one** advantage of Apple using energy produced from renewable resources.

(4)

(c) With reference to Figure 1 and Extract B, analyse **two** reasons why the 'world price of lithium increased by 191%' (Extract B, line 2).

Illustrate your answer with a supply and demand diagram.

(6)

(d) With reference to the last paragraph of Extract C, examine **two** likely effects on smartphone manufacturers of the growth in the market for refurbished smartphones.

(8)

(e) With reference to Extract C, discuss the microeconomic effects of the increase in smartphone manufacturing between 2011 and 2021. Refer to external costs in your answer.

Illustrate your answer with an externalities diagram.

(14)

Sources for use with Section C

Renewables, lithium and smartphones

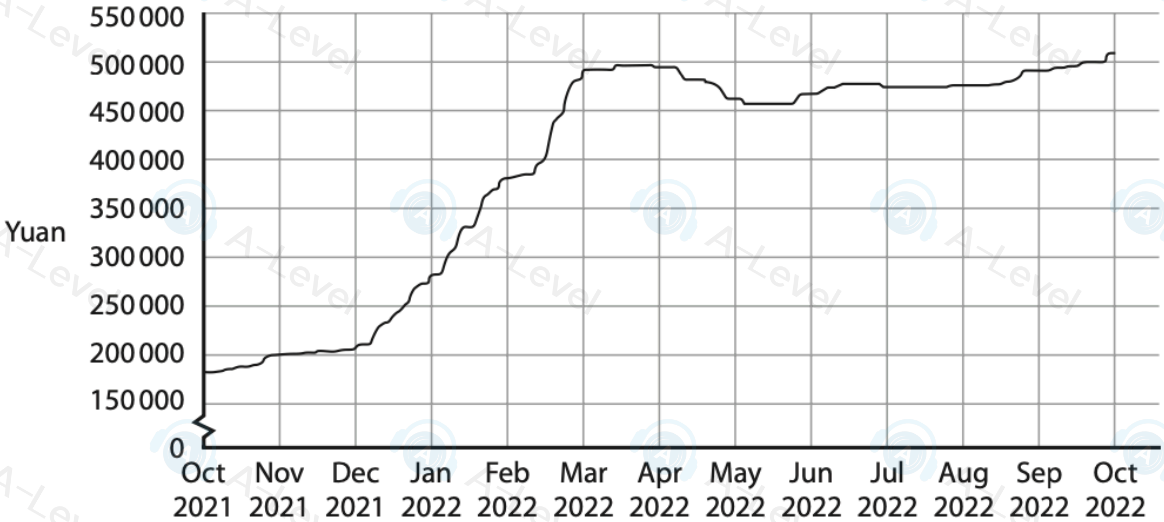
Extract A   Apple’s renewable commitment

In 2020 100% of the energy used directly by Apple was from renewable resources. In 2022 it announced that 213 of its suppliers had agreed to use only renewable resources to power production. Examples of Apple’s commitment to renewable energy include:

- investment in a 2300 acre solar project in Texas
- a data centre in Denmark powered by a solar park and wind farm
- Apple’s supplier, Keiwa, in Japan using renewable energy from a wind farm.

The global supply of energy produced from renewable resources is expected to increase by 8% in 2022.

Figure 1   World price of lithium, yuan per tonne, October 2021 to October 2022



Extract B Demand for lithium

Between October 2021 and October 2022 the world price of lithium increased by 191%. Lithium production increased by 20% but demand increased by significantly more.

With rising oil prices many consumers switched from petrol and diesel cars to electric cars. These electric vehicles require lithium in the batteries. In 2021 global sales of electric vehicles increased by 108% to 6.75 million and in China sales grew by 157.5%. Sales of smartphones, that also use lithium batteries, increased by 11.4% in 2021 to 1.5 billion.

Extract C Smartphone manufacturing

Between 2011 and 2021 smartphone production increased from 472 million to 1 433 million. Globally 4.5 billion people owned a smartphone by the end of 2022. In 2022 smartphones will produce 146 million tonnes of CO_2 emissions which is 0.5% of global carbon emissions. These emissions are produced in the manufacturing, transportation, usage and recycling of smartphones.

Smartphone devices contain several precious and rare earth metals. The environmental costs of mining these metals can be significant. Extracting iron, aluminium and copper produces huge amounts of liquid and solid waste. For example, in 2015 33 billion litres of waste was spilt from an iron ore mine in Minas Gerais, Brazil. In addition, mining gold is a major cause of deforestation.

Smartphone manufacturers are producing phones which last longer but are more expensive. As a result consumers do not replace their smartphones so frequently. The market for smartphones that have been refurbished* is forecast to be worth $65 billion by 2024. Typically, a consumer can sell a one-year-old smartphone for 50% of its original price. The manufacturer can sell the same refurbished smartphone for 80% of its original price. Unwanted smartphones in developed countries are desired in emerging countries.

* a refurbished smartphone is one that has been repaired and rebuilt.