Please check the examination details below before entering your candidate information

Candidate surname: StemUp Model Solution

Other names:

Centre Number

Candidate Number

Pearson Edexcel International Advanced Level

Thursday 8 May 2025

Afternoon (Time: 1 hour 45 minutes)

Paper reference **WEC11/01**

Economics

International Advanced Subsidiary
UNIT 1: Markets in action

You must have:
Source Booklet (enclosed)

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **ALL** questions in Sections A, B and C.
- Answer **ONE** question in Section D.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 80.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Calculators may be used.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

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SECTION A

Answer ALL questions in this section.

Questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

1 Which **one** of the following is an example of a market failure?

- ☒ **A** Unintended consequences
- ☒ **B** A market bubble in the housing market
- ☒ **C** Excessive administration costs resulting from regulation
- ☒ **D** A firm exiting the market because it was making a loss

(Total for Question 1 = 1 mark)

2 In 2015 the Government of Thailand set a maximum price below the market equilibrium price for flights within the country. In 2023 the Government of Thailand increased the maximum price by 3.75%.

Ceteris paribus, which **one** of the following is the most likely result of increasing the maximum price of flights within Thailand?

- ☒ **A** An increase in excess supply
- ☒ **B** A decrease in excess supply
- ☒ **C** An increase in excess demand
- ☒ **D** A decrease in excess demand

(Total for Question 2 = 1 mark)

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3 Procter & Gamble, a US-based international business, sells beauty, grooming, personal healthcare and fabric care goods. In 2022 it increased its prices, on average, by 10%. The quantity of items sold decreased by 6%.

Which **one** of the following explains why consumers bought fewer Procter & Gamble products?

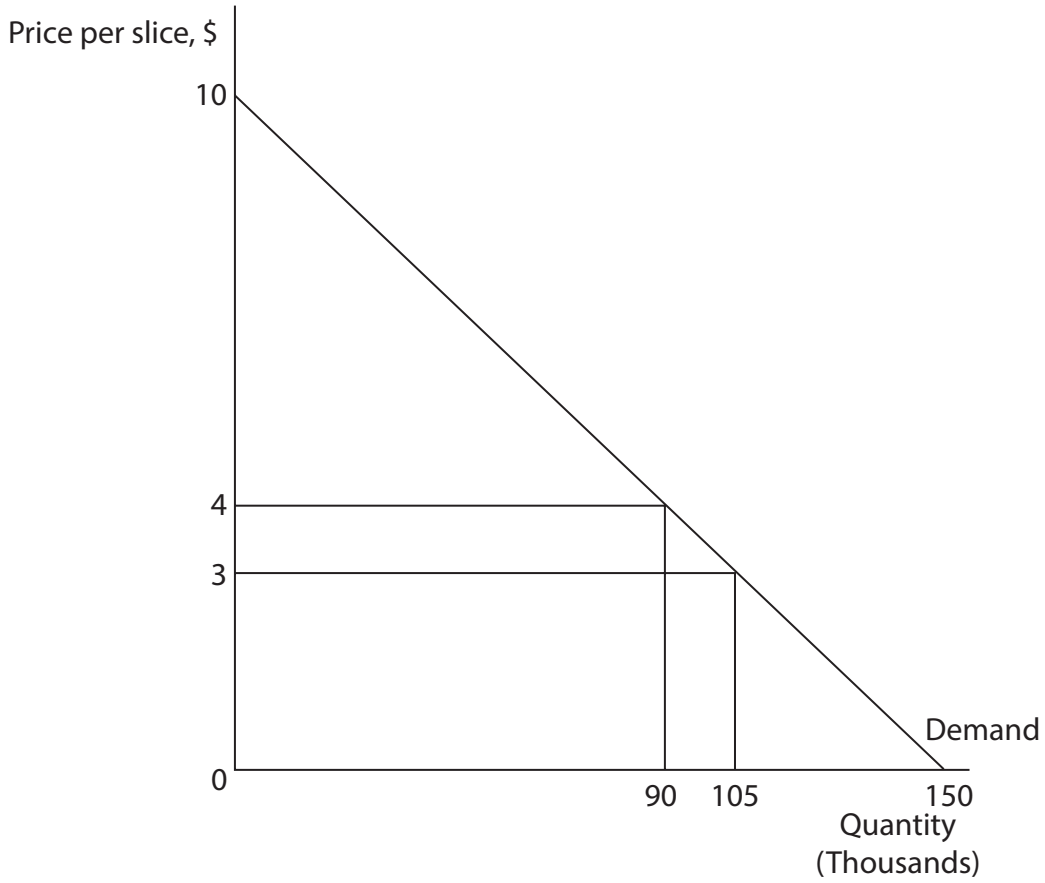
- ☒ **A** Consumers aimed to maximise utility
- ☒ **B** Consumers aimed to minimise utility
- ☒ **C** Consumers suffered from habitual behaviour
- ☒ **D** Consumers had poor computational skills

(Total for Question 3 = 1 mark)

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4 The diagram shows the market for a slice of vegan cheesecake.



The price of a slice of vegan cheesecake was originally $3. If the price is increased to $4, which **one** of the following can be deduced from the diagram?

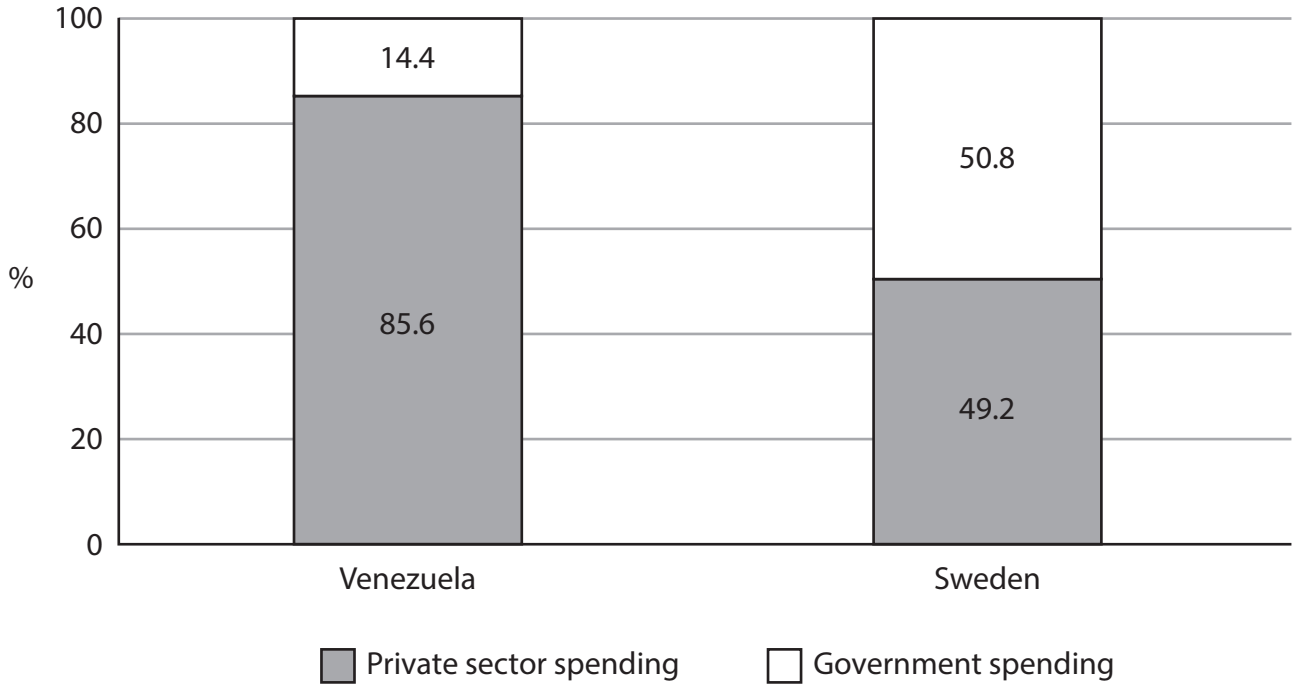
- ☒ **A** Total revenue would decrease by $90 000
- ☒ **B** Total revenue would decrease by $45 000
- ☒ **C** Total revenue would increase by $45 000
- ☒ **D** Total revenue would increase by $90 000

(Total for Question 4 = 1 mark)

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5 The chart shows the share of government spending and private sector spending in Venezuela and Sweden in 2023.



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

- ☒ **A** Venezuela is a free market economy
- ☒ **B** Sweden is a command economy
- ☒ **C** Sweden is a free market economy and Venezuela is a command economy
- ☒ **D** Sweden and Venezuela are both mixed economies

(Total for Question 5 = 1 mark)

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6 The table shows the estimated price elasticity of demand for a bar of chocolate produced by selected chocolate bar manufacturers.

Manufacturer	Price elasticity of demand
Lindt	–1.1
Mars	–1.3
Mondelez	–1.6
Hershey	–2.1

(Source adapted from: https://kylascanlon.com/2020/01/19/chocolate-at-any-cost-the-price-elasticity-of-the-candy-industry/)

Ceteris paribus, which **one** of the following can be deduced from this information?

☒ **A** The demand for all four chocolate bars is price inelastic

☒ **B** All four chocolate bars are inferior goods

☒ **C** A 5% increase in the price of a Mars chocolate bar will result in a 6.5% decrease in the quantity demanded

☒ **D** A 5% increase in the price of a Mondelez chocolate bar will result in an 8% increase in the quantity demanded

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS

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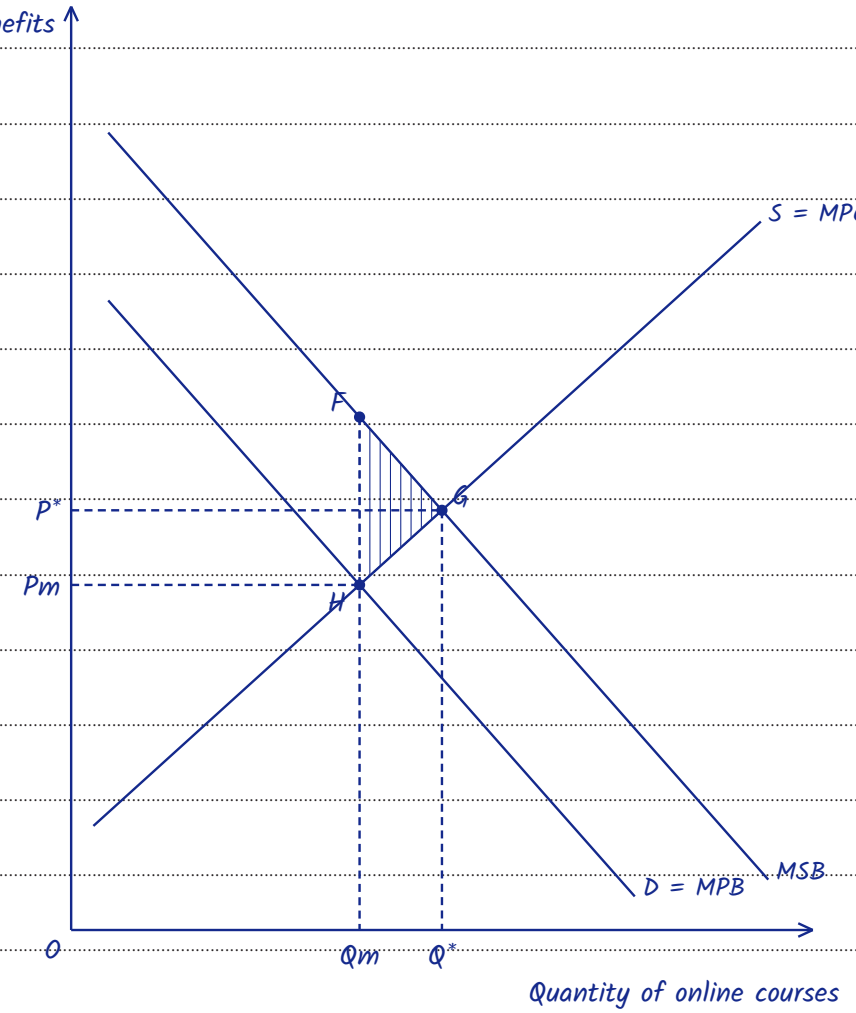
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SECTION B

Answer ALL questions in this section in the spaces provided.

7 In 2021 the number of citizens taking online education courses in the Philippines was 1 300 000.

Draw a diagram to illustrate the likely external benefits resulting from online education in the Philippines.



Online courses for the 1 300 000 learners create external benefits, eg a more productive workforce, so MSB lies above MPB by the external benefit FH. The market produces at Qm, Pm (where MPB = MPC), below the social optimum Q*, P* (where MSB = MSC). The courses are under-consumed by Qm to Q*, causing the welfare loss shown by the shaded triangle FGH.

(Total for Question 7 = 4 marks)

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8 The construction of a house requires many different types of worker. These include:

- bricklayers
- carpenters
- plasterers
- electricians
- painters and decorators.

Explain **one** advantage of specialisation in house construction.

Specialisation (the division of labour) is where production is broken down into separate tasks and each worker concentrates on a narrow range of tasks.

In house construction, bricklayers only lay bricks, electricians only do the wiring and plasterers only plaster the walls, rather than every worker trying to do every job.

The advantage is higher labour productivity (output per worker). Because each worker repeats the same task, they become more skilled and faster at it, and they do not waste time switching between tasks and changing tools. This means houses can be built more quickly, so the average cost of building each house falls and the builder can sell houses sooner and earn more profit.

(Total for Question 8 = 4 marks)

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9 The table shows the cross elasticity of demand for biscuits and cold soft drinks with respect to a change in the price of hot drinks.

	Cross elasticity of demand with respect to a change in the price of hot drinks
Biscuits	–0.47
Cold soft drinks	+0.43

With reference to the information given, explain the difference between substitutes and complements.

Substitutes are goods that meet the same need, so they can be used in place of each other. Their cross elasticity of demand (XED) is positive: when the price of one good rises, the quantity demanded of the other rises.

Complements are goods that are consumed together (joint demand). Their XED is negative: when the price of one good rises, the quantity demanded of the other falls.

Cold soft drinks have an XED of +0.43 with respect to the price of hot drinks, so they are substitutes: a 10% rise in the price of hot drinks raises the quantity demanded of cold soft drinks by 4.3%, as consumers switch drinks.

Biscuits have an XED of –0.47, so biscuits and hot drinks are complements: a 10% rise in the price of hot drinks reduces the quantity demanded of biscuits by 4.7%, as fewer people have a biscuit with their tea or coffee.

(Total for Question 9 = 4 marks)

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10 The table shows the average price of green coffee beans and the global output of green coffee beans in February 2023 and in February 2024.

	Price of green coffee beans per lb	Output of green coffee beans (tonnes)
February 2023	$1.61	8 510 000
February 2024	$1.82	11 550 000

Ceteris paribus, calculate the price elasticity of supply for green coffee beans.

Show your workings.

PES = % change in quantity supplied ÷ % change in price

% change in quantity supplied = (11 550 000 − 8 510 000) ÷ 8 510 000 × 100

= 3 040 000 ÷ 8 510 000 × 100 = 35.72%

% change in price = ($1.82 − $1.61) ÷ $1.61 × 100

= 0.21 ÷ 1.61 × 100 = 13.04%

PES = 35.72 ÷ 13.04 = 2.74 (2 d.p.)

PES is greater than 1, so the supply of green coffee beans is price elastic: the 13.04% rise in price led to a more than proportionate 35.72% rise in output.

(Total for Question 10 = 4 marks)

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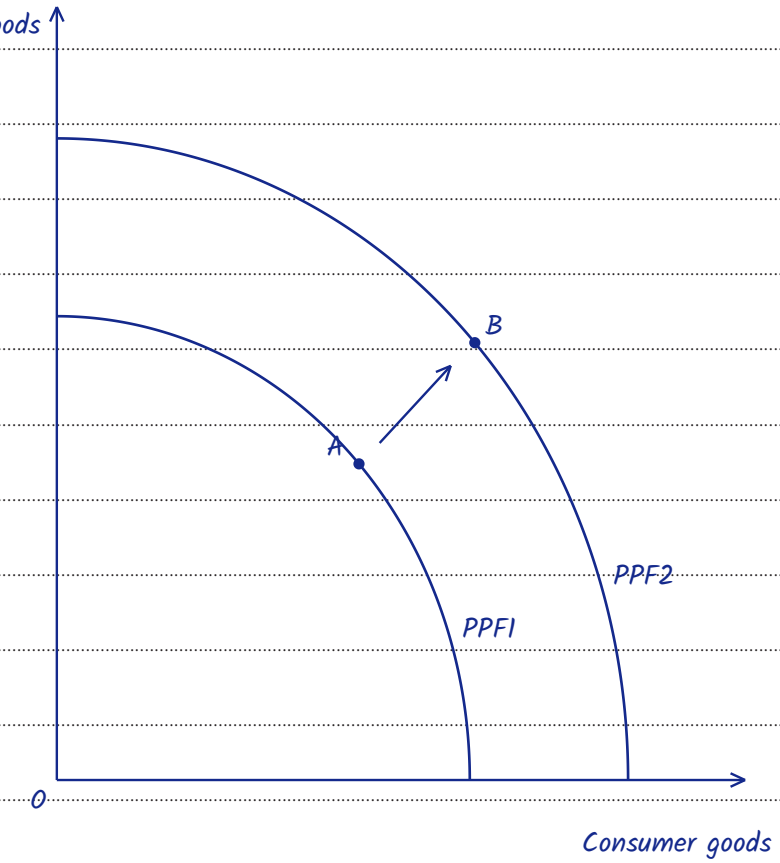
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11 In 2023 there were 999 700 more immigrants who entered the USA than emigrants who left the country.

Explain the likely impact on the USA's production possibility frontier (PPF) of this change in migration.

Illustrate your answer with a fully labelled PPF diagram.

A production possibility frontier (PPF) shows the maximum combinations of two goods an economy can produce when all its resources are fully and efficiently employed.



Net migration of 999 700 people into the USA increases the size of the labour force, so there are more factors of production available. This means more of both capital goods and consumer goods can be produced, so the PPF shifts outwards from PPF1 to PPF2 (A to B). This is an increase in productive potential, ie long run economic growth.

(Total for Question 11 = 4 marks)

TOTAL FOR SECTION B = 20 MARKS

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SECTION C

Study Figure 1 and Extracts A, B and C in the Source Booklet before answering Question 12.

Write your answers in the spaces provided on the following pages.

12 (a) Define the term 'public good'. (Extract A, line 13)

(2)

(b) With reference to Figure 1 and Extract A, analyse **two** factors that caused the average world price of transporting goods in shipping containers to rise rapidly.

Illustrate your answer with a supply and demand diagram.

(6)

(c) With reference to Extract B, explain the difference between price inelastic supply and price elastic supply.

(4)

(d) With reference to Extract C, examine **two** external costs associated with container ships.

(8)

(e) With reference to Extract C and your own knowledge, discuss the likely benefits of subsidies paid to the manufacturers of wind sails.

Illustrate your answer with a supply and demand diagram.

(14)

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12 (a) Define the term 'public good'. (Extract A, line 13)

(2)

A public good is a good that is non-excludable (people who do not pay cannot be stopped from benefiting, so there is a free rider problem) and non-rival (one person's consumption does not reduce the amount available to others), eg the 45 lighthouses provided by the South African government.

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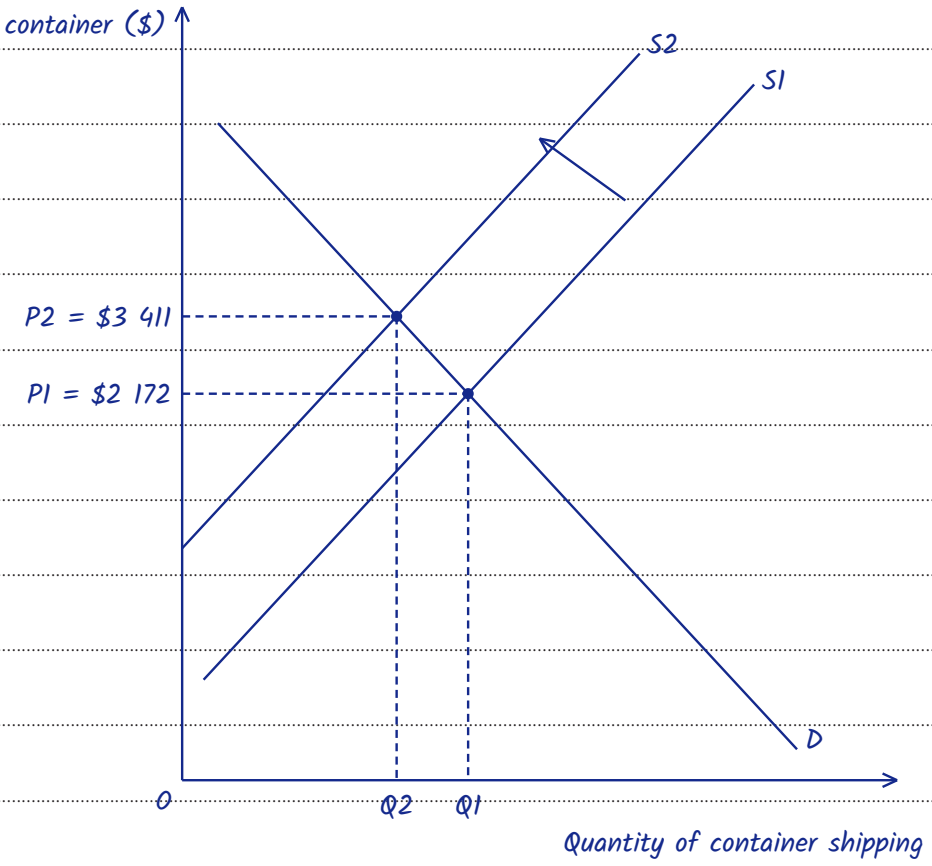
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(b) With reference to Figure 1 and Extract A, analyse **two** factors that caused the average world price of transporting goods in shipping containers to rise rapidly.

Illustrate your answer with a supply and demand diagram.

(6)

Figure 1 shows the average world price of transporting a 40-foot container rose from $2 172 in March 2023 to $3 411 in March 2024, an increase of $1 239 or 57.0%. This was caused by a fall in supply, shown on the diagram as a shift left from S1 to S2.



The first factor is the diversion of ships away from the Red Sea. After 133 pirate attacks between November 2023 and April 2024, 62% of container ships took an alternative route that adds 6 550 km and 10 to 15 days to each journey, with an extra fuel cost of about $1 million per ship. This raises the cost of producing each voyage, and because each ship now spends longer on every trip, fewer containers can be carried in a given period. Supply shifts left, so at the original price P1 there is excess demand, the price is bid up to P2 and quantity falls from Q1 to Q2.

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The second factor is higher wage and interest costs. The wages of workers on container ships increased and higher interest rates raised the cost of borrowing to finance ships. These higher costs of production reduce the profitability of supplying shipping at each price, so firms supply less at every price, which again shifts supply left from S1 to S2. As demand for transporting goods is unchanged, the equilibrium price rises rapidly, from $2 172 to $3 411 per container.

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(c) With reference to Extract B, explain the difference between price inelastic supply and price elastic supply.

(4)

Price inelastic supply means PES is between 0 and 1: a change in price causes a less than proportionate change in quantity supplied. Price elastic supply means PES is greater than 1: a change in price causes a more than proportionate change in quantity supplied.

Extract B suggests supply of new ships is inelastic: it takes 12 to 16 months to build one new container ship and the 569 ships ordered mean an even longer wait, so firms cannot quickly respond to higher prices by adding ships.

However, only 65% of capacity on container ships is typically used, so there is 35% spare capacity. This suggests supply of container space is price elastic, as firms can carry more containers on existing ships when the price rises.

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(d) With reference to Extract C, examine **two** external costs associated with container ships.

(8)

External costs are the costs of an economic activity that fall on third parties who are not involved in the transaction and are not compensated for them.

One external cost is air pollution. In one year a single large container ship can emit cancer-causing and asthma-causing pollutants equivalent to 50 million cars, and its low-grade fuel contains 2 000 times the sulfur of car diesel. People living near ports and shipping lanes then suffer respiratory illness, so they lose income through days off work and governments face higher healthcare costs for treatment and inhalers. The sulfur also causes acid rain, damaging forests and buildings. Container ships also produce 2% of global CO2 emissions, adding to global warming, which leads to floods and wildfires that destroy homes far from the shipping firms.

However, the size of this cost is falling: carbon emissions were cut by 30% between 2008 and 2023 through fuel-saving measures, and new technology such as wind sails cuts a further 11.2 tonnes of CO2 per ship per day. Also, these costs are very hard to measure and value in money, so the true size of the external cost is uncertain.

A second external cost is damage to marine life. The hum of ship engines disrupts communication and navigation for whales and dolphins, and oil spills, sewage and chemical waste pollute the water. Animals become lost, beached or sick, which reduces biodiversity and means charities and governments must use scarce resources to rescue animals and clean up spills. Fishing and tourism businesses may also lose income as fish stocks and beaches are damaged.

However, these costs must be weighed against the large benefits of container shipping, which carries the goods that allow countries to trade cheaply. Overall, the external costs are

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significant, but their magnitude depends on the type of fuel used and how well spills are regulated.

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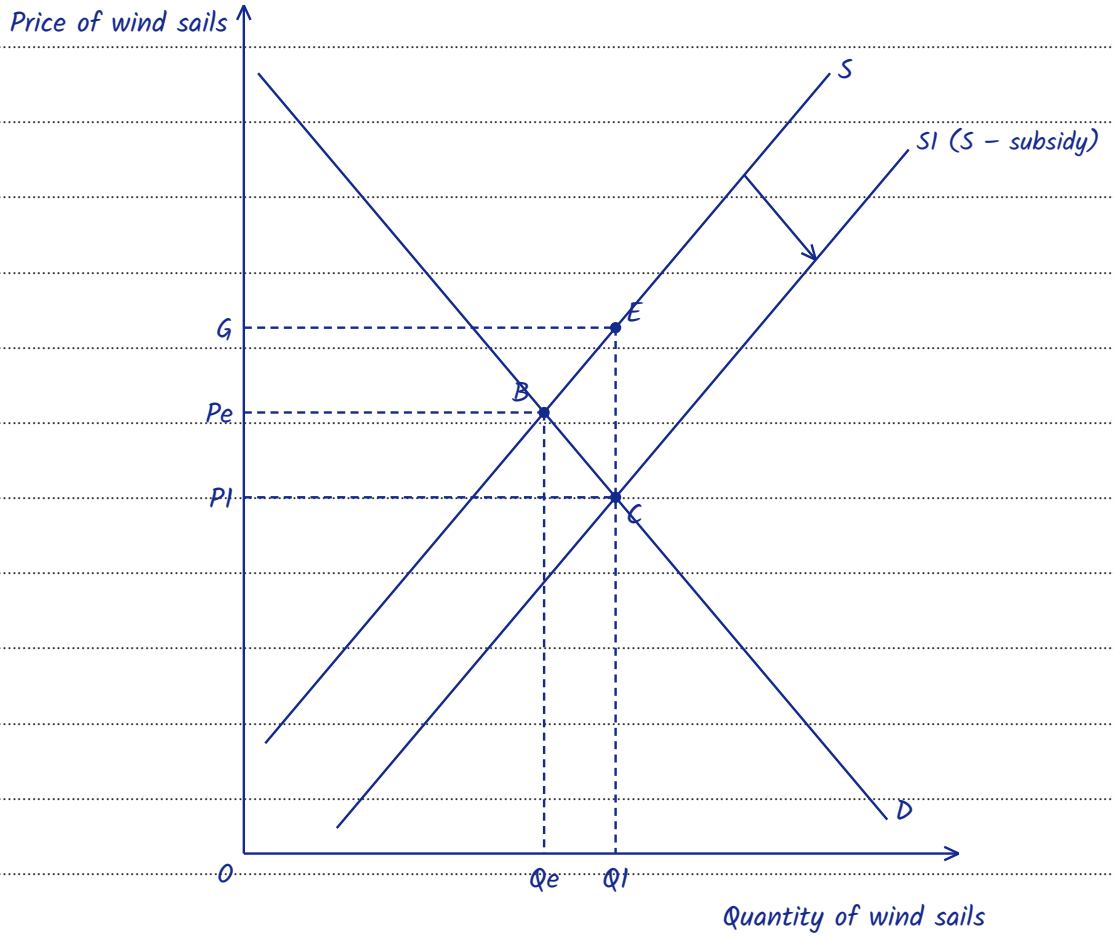
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(e) With reference to Extract C and your own knowledge, discuss the likely benefits of subsidies paid to the manufacturers of wind sails.

Illustrate your answer with a supply and demand diagram.

(14)

A subsidy is a payment by the government to producers, usually per unit, to reduce their costs of production and encourage output. A subsidy to wind sail manufacturers, such as BAR Technologies, lowers their costs, so supply shifts right from S to S1 (vertical distance = subsidy per unit).



The first benefit is to buyers of wind sails. The price falls from Pe to P1 and the quantity bought rises from Qe to Q1. Shipping firms gain consumer surplus of the area Pe B C P1, which makes fitting wind sails more affordable and encourages more of the 90 000 container ships to use them.

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The second benefit is to manufacturers. They receive G per unit (price P1 plus the subsidy) rather than Pe, so producer surplus rises by G E B Pe. Higher revenue and profit can fund research and development, improving the technology and, through economies of scale, cutting costs further. More output also creates jobs in wind sail manufacturing, and these workers spend their incomes in local businesses.

The most important benefit is the reduction in external costs. In the 2023 trial wind sails cut fuel use and reduced emissions by 11.2 tonnes of CO2 per ship per day, equal to removing 480 cars from the roads each year. Less burning of high-sulfur fuel also means less air pollution, fewer cases of asthma and cancer and lower healthcare costs for third parties. As shipping produces 2% of global CO2 emissions, wider use of wind sails moves output closer to the socially optimal level and reduces the welfare loss from this market failure.

However, there is an opportunity cost. The subsidy costs the government the rectangle G E C P1, which could have been spent on healthcare or education, or may require higher taxes. With 90 000 ships, a very large subsidy may be needed before the effect on emissions is significant.

Also, the evidence comes from only one trial in 2023, so the actual fuel savings may be smaller on other routes or in calm weather. If demand for wind sails is price inelastic because the cost of fitting them is high, the fall in price will only lead to a small rise in quantity, limiting the benefits. Manufacturers may also become dependent on the subsidy and less focused on cutting costs, causing government failure.

There may be losers too: fuel suppliers will sell less fuel, so jobs in that industry may fall, offsetting some of the employment gains, and building new factories may cause some environmental damage. In the long run, though, these effects are likely to be small.

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Overall, the subsidy is likely to bring significant benefits, mainly lower carbon and sulfur emissions, as the trial shows large savings per ship. The benefits will be greatest if the subsidy is set close to the size of the external benefit and is temporary, so it supports the industry until it can achieve economies of scale without becoming dependent on government money.

(Total for Question 12 = 34 marks)

TOTAL FOR SECTION C = 34 MARKS

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SECTION D

Answer ONE question from this section.

Write your answer in the space provided.

EITHER

13 The table shows the global sales of electric vehicles in 2017 and 2023.

Year	Sales of electric vehicles
2017	1 180 000
2023	13 800 000

Evaluate the microeconomic benefits of this increase in demand for electric vehicles.

Illustrate your answer with a supply and demand diagram.

(Total for Question 13 = 20 marks)

OR

14 The Governments of the UK, Spain and Italy have introduced a tax on plastic packaging. This is charged on any plastic packaging with more than 30% that cannot be recycled.

The table shows the amount of tax charged in each country.

Country	Tax per tonne
UK	$250
Spain	$465
Italy	$465

Evaluate the microeconomic benefits of introducing a tax on plastic packaging.

Illustrate your answer with a supply and demand diagram.

(Total for Question 14 = 20 marks)

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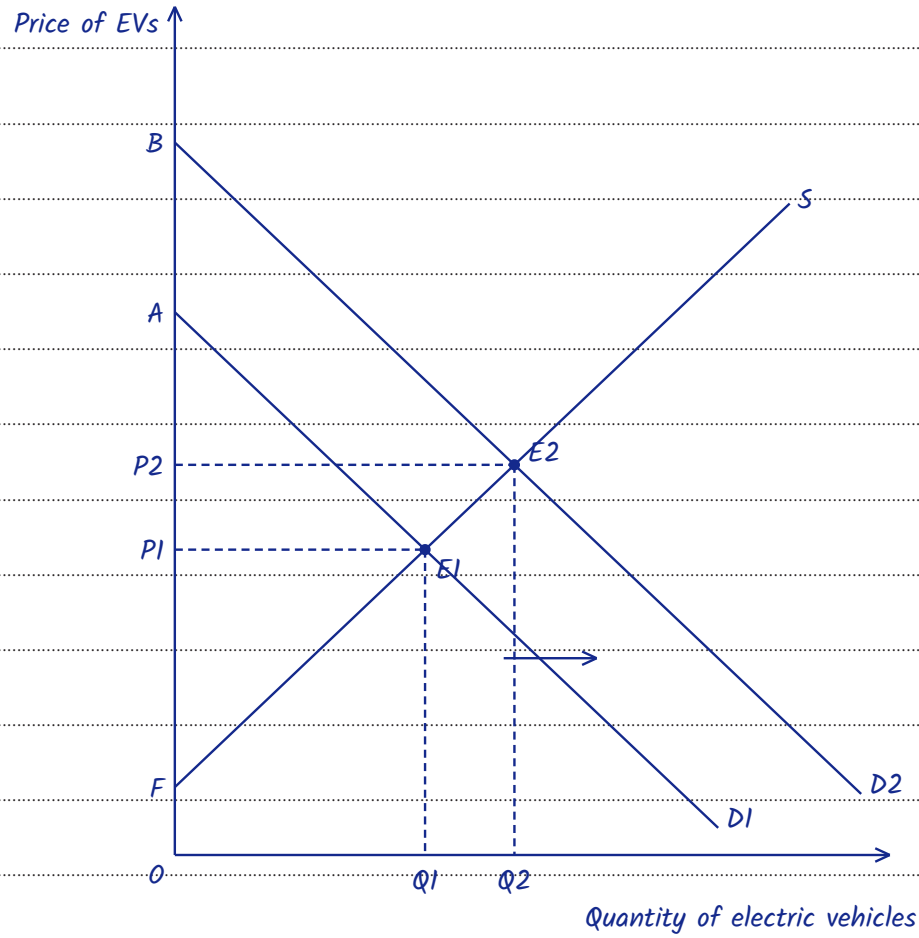
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Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.

Chosen question number: **Question 13** ☒ **Question 14** ☐

Write your answer here:

Global sales of electric vehicles (EVs) rose from 1 180 000 in 2017 to 13 800 000 in 2023, an increase of 12 620 000, or 1 069.5%. This is a large increase in demand, caused by factors such as rising incomes, changing tastes towards greener cars, rising petrol prices and government incentives. Demand shifts right from D1 to D2.



The first benefit is to producers. As demand rises, the price rises from P1 to P2 and the quantity sold extends from Q1 to Q2. Producer surplus increases from the area P1 E1 F to P2 E2 F. Firms such as EV manufacturers earn more revenue and profit, which can be reinvested in research and development, improving battery range and quality. Higher sales also allow firms to gain economies of scale, lowering average costs. The rising price and profit act as a signal and

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an incentive, so resources are reallocated from petrol and diesel cars towards EVs, as the price mechanism predicts.

However, the cost of producing EVs, especially batteries, is still high, so profits may not rise by as much as revenue. Also, the high profits attract new entrants, and as more car makers switch to EVs, increased competition will push prices down and reduce producer surplus in the long run.

The second benefit is to consumers. Although the price has risen, consumer surplus increases from A E1 P1 to B E2 P2, as far more consumers now buy EVs and value them highly. Consumers also gain lower running costs, as electricity is usually cheaper per km than petrol.

On the other hand, the higher price P2 reduces affordability for poorer households, who may be priced out of the EV market, so the benefits may be unequally distributed.

The third benefit is employment. Producing 12.62 million more EVs increases the derived demand for labour in EV and battery factories, and in complementary markets such as charging points. Workers earn higher incomes and spend them in local businesses, creating external benefits for the area.

However, as EVs are substitutes for petrol and diesel cars, demand for those cars falls, so some workers making engines and exhausts may lose their jobs. The net gain in employment may therefore be small, and it depends on whether workers can retrain, as there is occupational immobility of labour.

The fourth benefit is the reduction in external costs. EVs produce no exhaust emissions, so replacing petrol and diesel cars reduces air pollution in cities and CO2 emissions. This lowers

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healthcare costs from asthma and other illnesses and slows global warming, which reduces the welfare loss from negative externalities of driving. Governments may also gain tax revenue if indirect taxes are charged on EVs.

However, the size of this benefit depends on how electricity is generated. If it comes from coal or gas power stations, emissions are only moved from the road to the power station. Making batteries also requires mining lithium and cobalt, which can damage the environment. Governments may lose fuel duty revenue and face the cost of building charging infrastructure, which has an opportunity cost.

In conclusion, the increase in demand for EVs brings substantial microeconomic benefits. The magnitude of the increase, over 1 000%, means the gains in producer surplus, employment and reduced pollution are likely to be large. The most significant benefit is the fall in external costs, but this depends on electricity becoming greener. In the short run consumers on low incomes may lose out from higher prices, but in the long run competition and economies of scale should lower prices, so the overall benefits are likely to outweigh the costs.

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TOTAL FOR SECTION D = 20 MARKS
TOTAL FOR PAPER = 80 MARKS

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Pearson Edexcel International Advanced Level

Thursday 8 May 2025

Afternoon (Time: 1 hour 45 minutes)

Paper reference **WEC11/01**

Economics

International Advanced Subsidiary

UNIT 1: Markets in action

Source Booklet

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Sources for use with Section C

Container shipping

Figure 1 Average world price of transporting goods in a shipping container, dollars per 40-foot container, March 2023 and March 2024

	Price ($)
March 2023	2 172
March 2024	3 411

Extract A Shipping container costs rise rapidly

The shortest and cheapest shipping route from Asia to Europe and North America passes through the Red Sea and via the Suez Canal, Egypt. Between November 2023 and April 2024 there were 133 attacks by pirates on ships in the Red Sea travelling to the Suez Canal. In response, 62% of container ships diverted to an alternative route. This adds 6 550 km to the journey and takes an extra 10–15 days. The additional cost of fuel per container ship is estimated at $1 million.

Additionally, other costs rose. For example, the wages of workers on container ships increased. Interest rates also increased, adding to the cost of borrowing.

Diverted ships have to travel through dangerous waters under the southern tip of Africa. There are 2 300 shipwrecks along the South African coastline. However, 45 active lighthouses along this coastline help ships through these dangerous waters. The Government of South Africa provides lighthouses as a public good.

Extract B The supply of container ships

With ships taking longer on journeys, more ships are required. Between 2023 and 2024 the top ten container shipping companies ordered 569 new ships. It will take 12–16 months to build one new container ship. This number of orders means that the shipping companies will have an even longer wait before the ships are received. However, only 65% of capacity on container ships is typically used.

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Extract C Environmental impact of container ships

The transportation of goods by container ships has a number of environmental impacts:

- 2% of global CO_2 emissions come from container ships
- the low-grade fuel used by the world's 90 000 container ships contains 2 000 times the amount of sulfur compared to diesel fuel used in cars
- in one year, a single large container ship can emit cancer-causing and asthma-causing pollutants equivalent to that of 50 million cars
- the hum of ship engines affects marine life, disrupting communication and navigation for animals such as whales and dolphins
- oil spills, sewage and chemical waste discharged by container ships contribute to water pollution.

However, between 2008 and 2023, carbon emissions were reduced by 30% through measures to reduce fuel consumption.

BAR Technologies, an engineering business, has developed wind sails that can be attached to container ships. In the first trial in 2023, these wind sails helped to reduce fuel consumption. This reduced carbon emissions from each ship by 11.2 tonnes of CO_2 per day. Over one year this would be the equivalent of removing 480 cars from the roads. With such environmental benefits some economists suggest that subsidies should be paid to manufacturers of wind sails.

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Acknowledgements

Figure 1 adapted from:

https://www.freightos.com/freight-blog/shipping-delays-and-cost-increases/

Extract A adapted from:

https://www.freightos.com/freight-blog/shipping-delays-and-cost-increases/

https://africacenter.org/spotlight/red-sea-indian-ocean-attacks-africa-maritime-vulnerability/

Extract B adapted from:

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