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**Economics  
Higher level  
Paper 3**

Friday 13 November 2020 (morning)

Candidate session number

1 hour

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**Instructions to candidates**

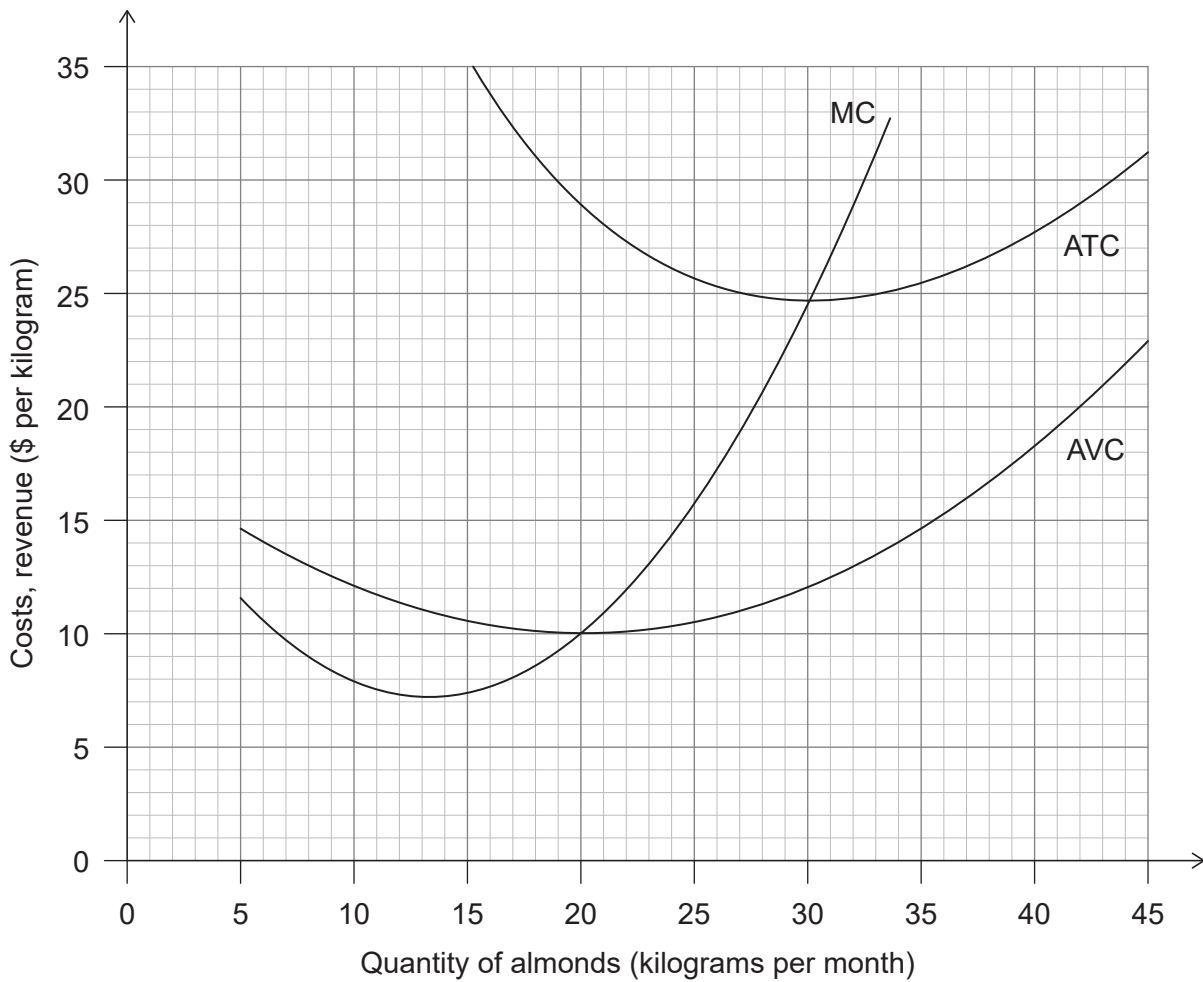
- Write your session number in the boxes above.
- You are permitted access to a calculator for this paper.
- Do not open this examination paper until instructed to do so.
- Answer two questions.
- Answers must be written within the answer boxes provided.
- Unless otherwise stated in the question, all numerical answers must be given exactly or correct to two decimal places.
- You must show all your working.
- The maximum mark for this examination paper is **[50 marks]**.



Answer **two** questions. Each question is worth [25 marks]. Answers must be written within the answer boxes provided.

- 1. Firm A, which is operating in a perfectly competitive market, produces almonds. **Figure 1** illustrates Firm A's average total cost (ATC), average variable cost (AVC) and marginal cost (MC) curves at different output levels.

**Figure 1**



- (a) Using information from **Figure 1**, calculate Firm A's total fixed costs. [2]

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**(Question 1 continued)**

- (b) (i) The market price of almonds is \$11 per kilogram. Using **Figure 1**, identify the quantity of almonds Firm A must produce in order to maximize profits. [1]

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- (ii) Calculate the economic profit/loss when Firm A is producing at the output level identified in part (b)(i). [2]

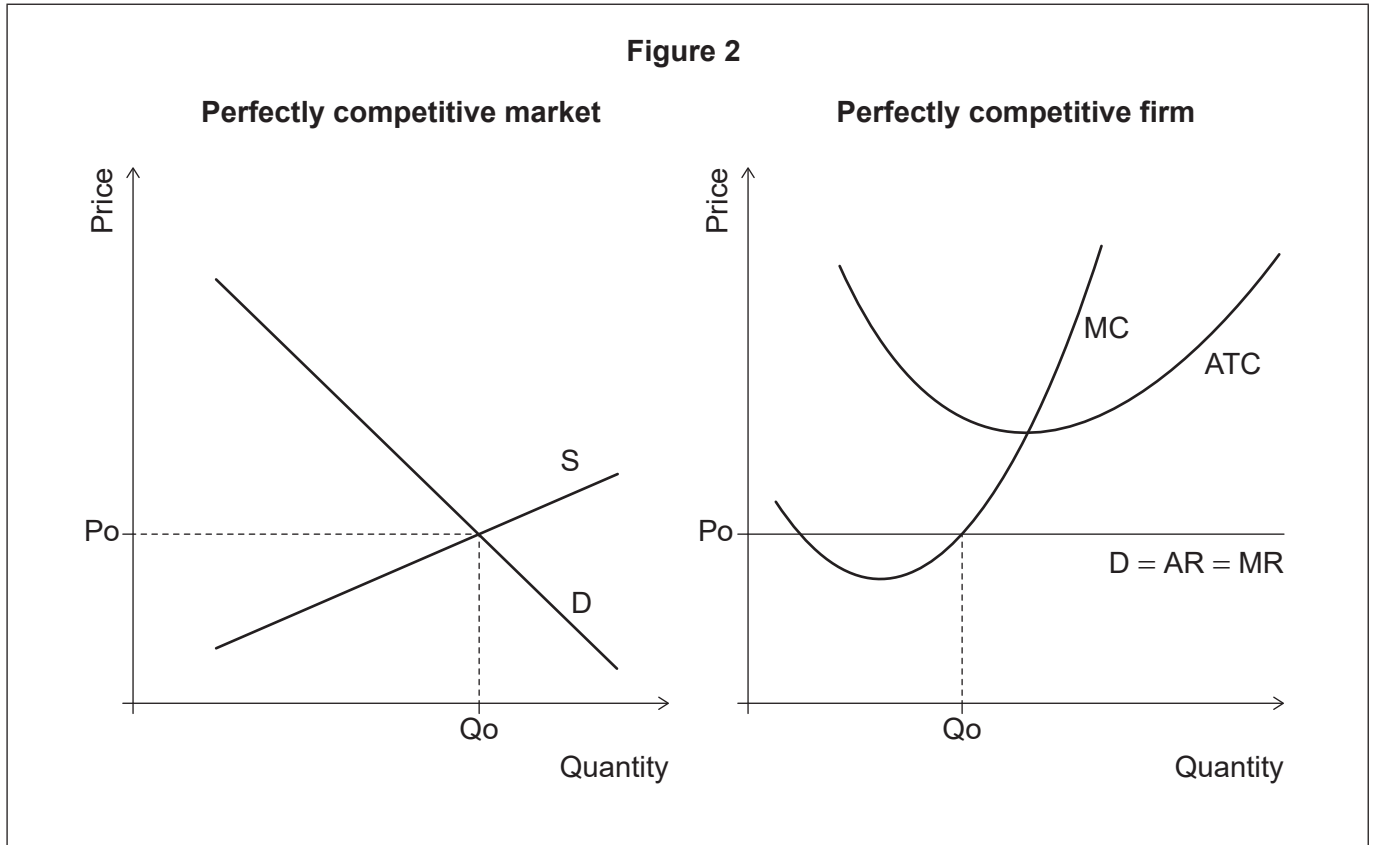
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(Question 1 continued)

**Figure 2** illustrates a perfectly competitive market in equilibrium and a perfectly competitive firm operating in this market. S is supply, D is demand,  $P_o$  is the short-run equilibrium price,  $Q_o$  is the short-run equilibrium quantity, MC is marginal cost, ATC is average total cost, AR is average revenue, MR is marginal revenue.



- (c) (i) Based on the information in **Figure 2**, state whether the firms in this market are making normal profits, economic profits or economic losses. [1]

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- (ii) On **Figure 2**, draw and label appropriate additional curves to show how a perfectly competitive market will move from short-run equilibrium to long-run equilibrium. [2]

(This question continues on the following page)



**(Question 1 continued)**

(iii) Using your answer to part (c)(ii), explain how the market adjustment takes place. [2]

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(d) State **two** assumed characteristics of a monopoly. [2]

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(e) Explain **two** reasons why a monopoly may be considered desirable for an economy. [4]

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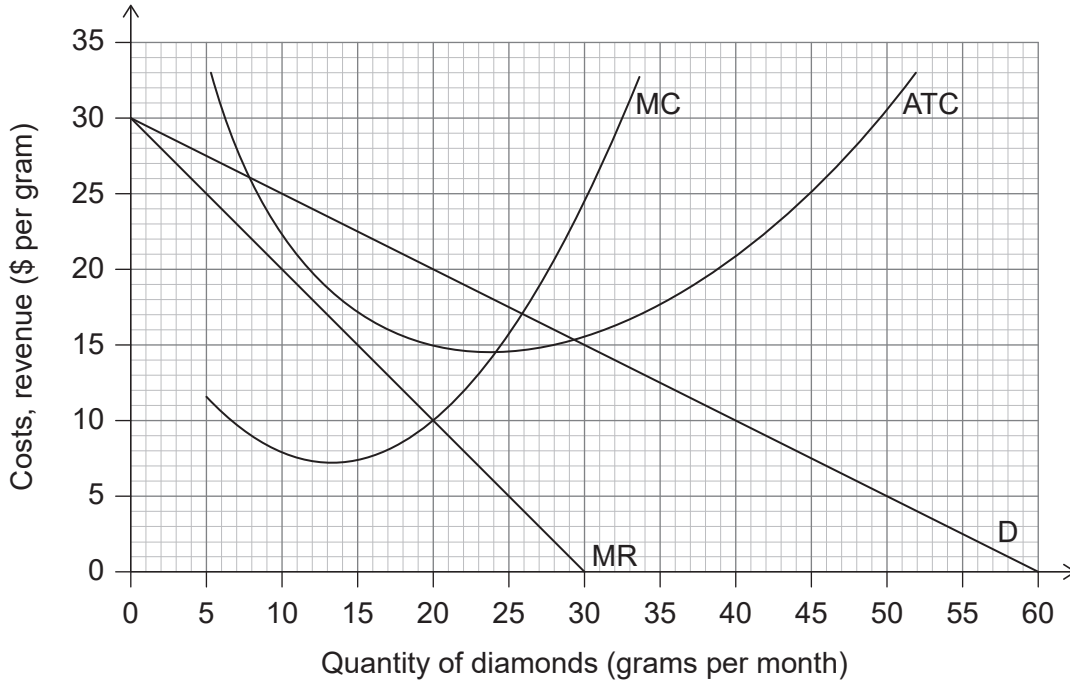
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(Question 1 continued)

Firm B is a monopoly producer of diamonds. **Figure 3** illustrates its demand (D), marginal revenue (MR), average total cost (ATC) and marginal cost (MC) curves at different output levels.

**Figure 3**



(f) (i) Using **Figure 3**, calculate the economic profit when Firm B is maximizing its profits. [2]

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(ii) Using **Figure 3**, calculate the total revenue when Firm B is maximizing its revenue. [2]

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**(Question 1 continued)**

The market for shampoo displays the characteristics of monopolistic competition.

- (g) (i) A shampoo firm is earning economic profits. Outline, with a reason, what will happen to its demand curve in the long run. [2]

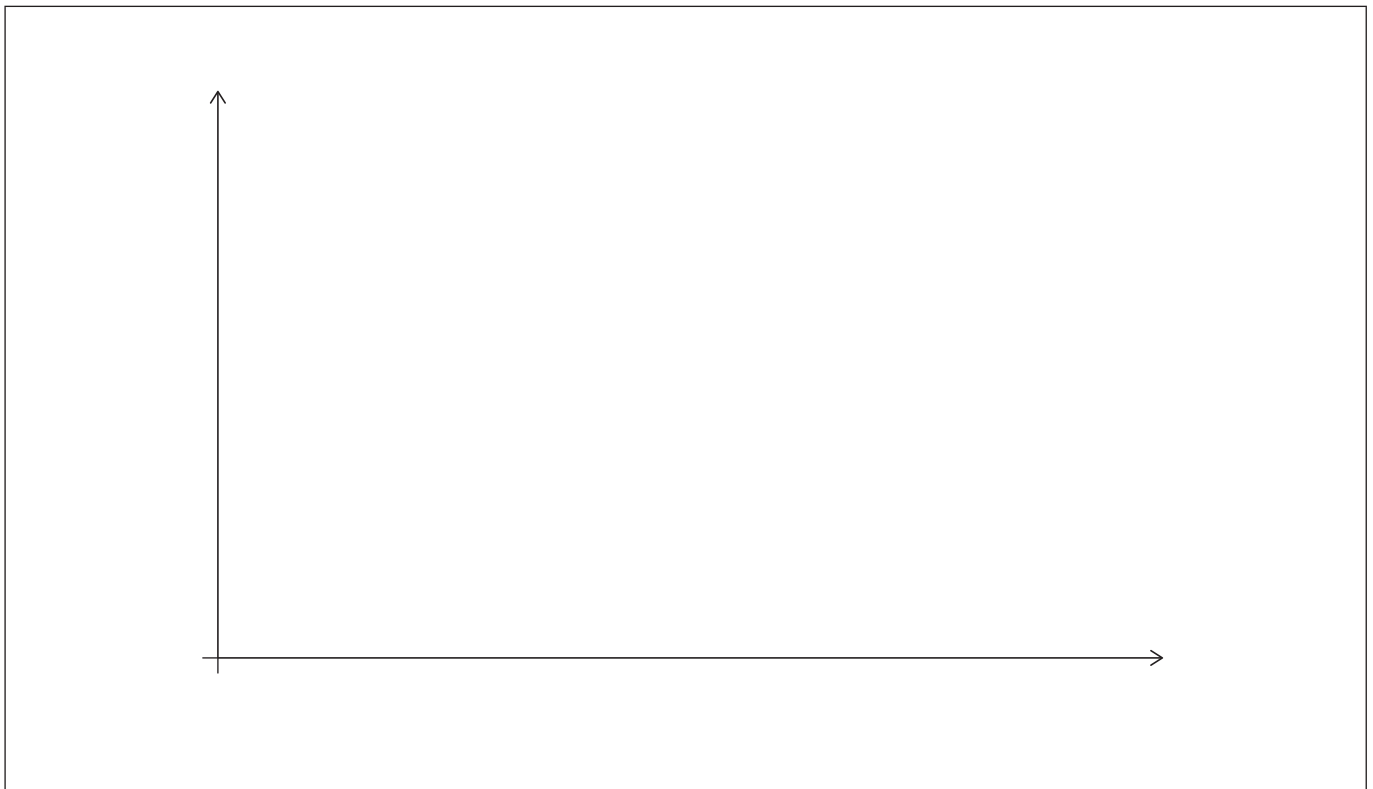
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- (ii) Sketch and label a diagram to illustrate the long-run equilibrium for a firm in monopolistic competition. [3]





2. **Table 1** provides information required for the calculation of a consumer price index (CPI). It shows a typical basket of goods purchased by the citizens of Country Alpha and the prices of these goods for two consecutive years. Assume 2015 is the base year, when the cost of the typical basket was \$45.00.

**Table 1**

	Quantity	Average price per unit in dollars (\$)	
	2015	2015	2016
<b>Rice</b>	5 kilograms	3.00	2.50
<b>Milk</b>	10 litres	1.00	1.50
<b>Shirt(s)</b>	2	10.00	10.00

- (a) (i) Calculate the cost of the typical basket in 2016. [2]

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- (ii) The cost of the typical basket was \$50 in 2017. Calculate the consumer price index (CPI) for 2017. [1]

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- (iii) The consumer price index for 2014 was 101.23. Calculate the rate of inflation between 2014 and 2015 (the base year). [1]

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**(Question 2 continued)**

(b) Explain **two** reasons why the calculation of the inflation rate may not be accurate. [4]

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(c) Outline how monetary policy is used to lower the inflation rate in an economy. [2]

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(Question 2 continued)

Table 2 provides selected economic data for Country A.

Table 2

	2015	2016	2017	2018	2019
Real gross domestic product (GDP) (\$ million)	96 330.49	100 861.85	103 887.45	103 042.33	103 785.98
Real GDP growth rate (%)	6.84	4.70	3.00	-0.81	0.72
Real GDP per capita growth rate (%)	3.14	1.12	-0.47	-4.10	-2.56

- (d) (i) In 2019, nominal GDP was \$102 874.55 million. Using data from **Table 2**, identify whether Country A experienced inflation **or** deflation **or** disinflation in 2019. [1]

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- (ii) Using data from **Table 2**, state the reason why there is a difference between the real GDP growth rate and the real GDP per capita growth rate between 2015 and 2019. [1]

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- (iii) An economist forecasts that the real GDP growth rate in 2020 will be 3.41%. Using the data in **Table 2**, calculate the forecast for real GDP (\$ million) in 2020. [2]

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**(Question 2 continued)**

An economist advises the government of Country A to spend \$207 million on a new infrastructure project. She estimates that as a result, nominal GDP would increase by \$828 million, *ceteris paribus*.

- (e) (i) Calculate the estimated value of the multiplier used by the economist. [2]

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- (ii) Calculate the estimated value of the marginal propensity to consume used by the economist. [1]

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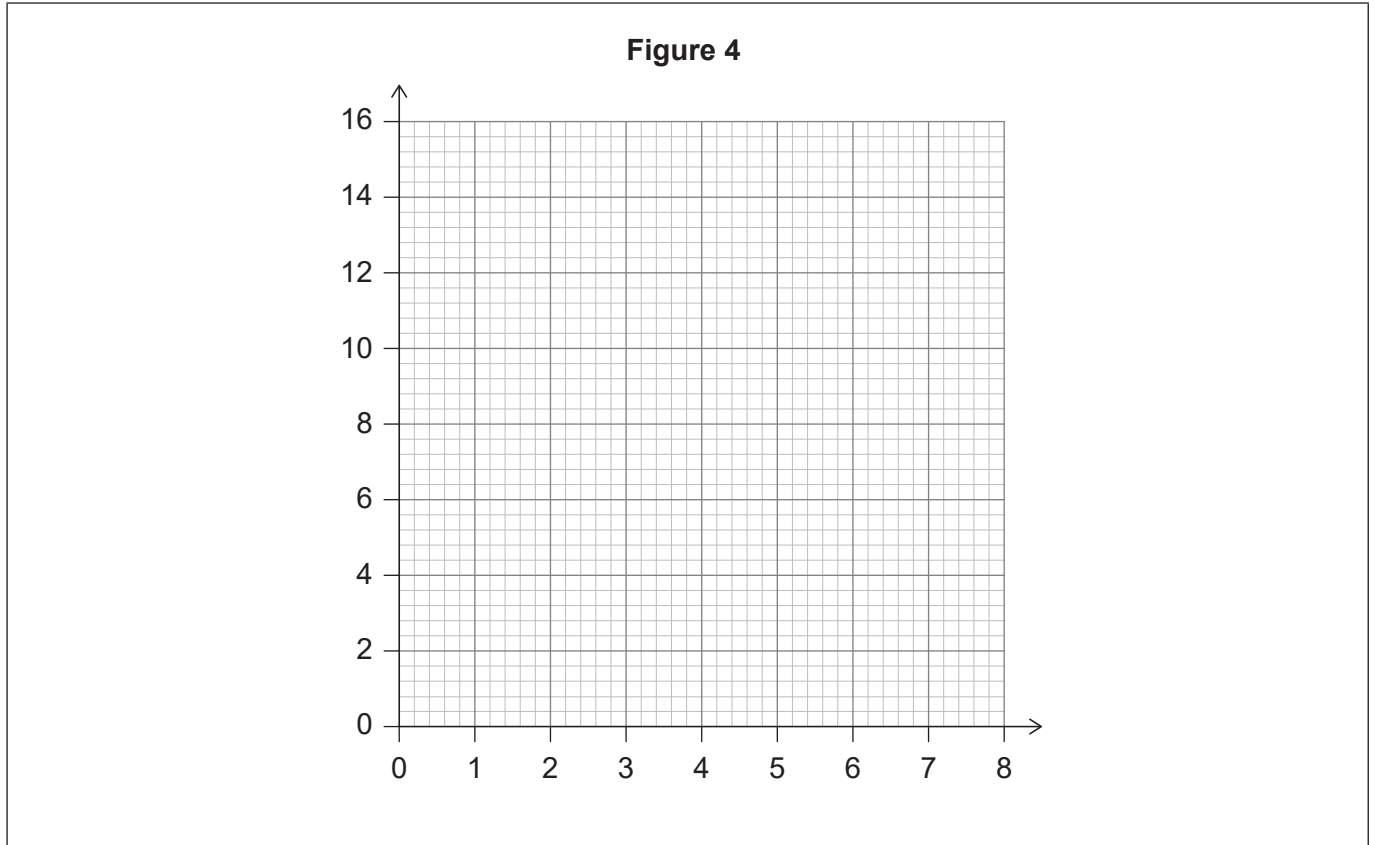
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**(Question 2 continued)**

A worker in Country J can produce either 12 kilograms (kg) of rice or 4 kg of wheat per hour.  
A worker in Country H can produce either 14 kg of rice or 7 kg of wheat per hour.

- (f) (i) Plot and label the production possibility curves for Country J **and** for Country H, assuming constant opportunity costs, on **Figure 4**. [2]



- (ii) Using the above data and the concept of opportunity costs to support your answer, determine which good Country H should specialize in. You **must** give a reason for your choice. [2]

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**(Question 2 continued)**

- (g) Explain **two** gains from trade that arise when Country J and Country H specialize according to comparative advantage.

[4]

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3. **Table 3** illustrates the exchange rates between the US dollar (US\$) and the Mexican peso (MX\$) between 2013 and 2017.

**Table 3**

	<b>MX\$ per US\$</b>	<b>US\$ per MX\$</b>
<b>2013</b>	12.77	0.08
<b>2014</b>	13.29	0.08
<b>2015</b>	15.85	
<b>2016</b>	18.66	0.05
<b>2017</b>	18.93	0.05

(a) (i) Calculate the value of the Mexican peso (US\$ per MX\$) in 2015.  
Enter your result in **Table 3**.

[1]

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(ii) Using **Table 3**, state **one** possible effect on Mexican consumers **and one** possible effect on Mexican producers from the change in the value of the Mexican peso (US\$ per MX\$) between 2014 and 2016.

[2]

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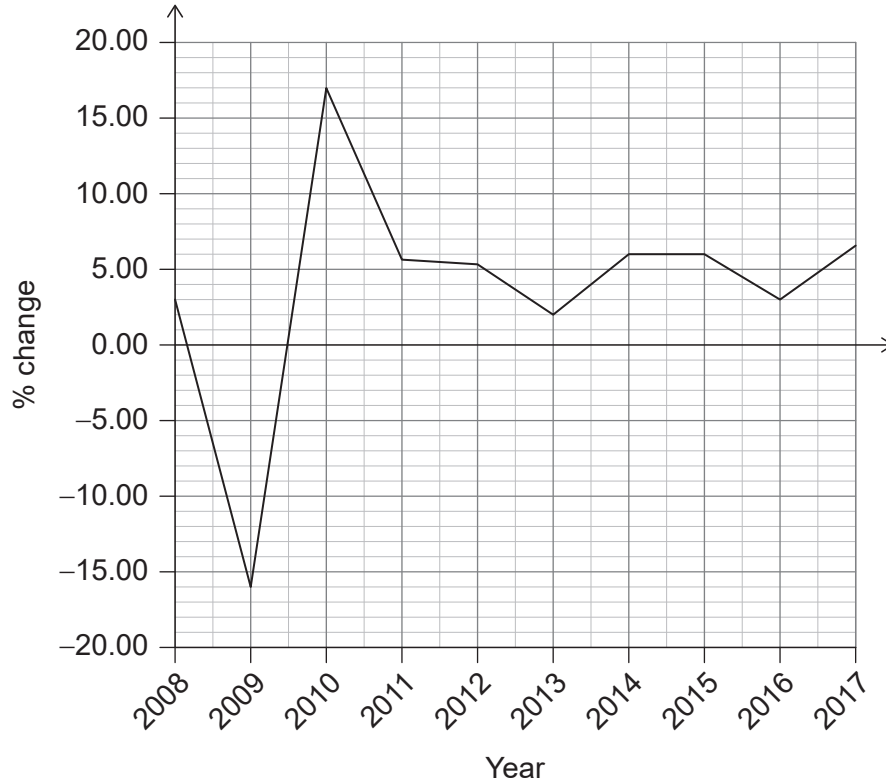




(Question 3 continued)

**Figure 5** illustrates the year-on-year changes in Mexico’s spending on imports of goods and services between 2008 and 2017.

**Figure 5**



(b) (i) Using **Figure 5**, state **two** likely causes for the change in Mexico’s spending on imports of goods and services in 2009.

[2]

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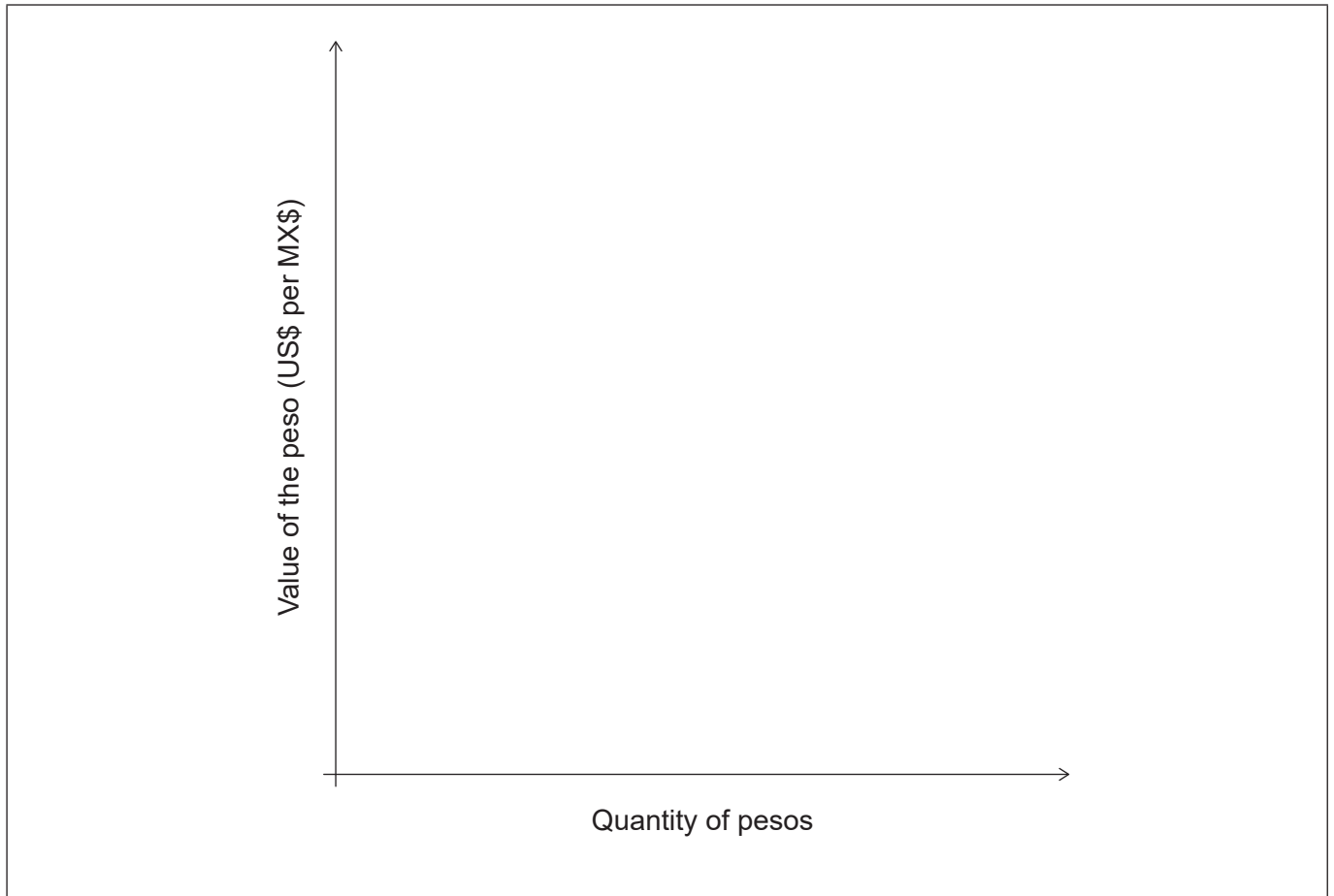
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**(Question 3 continued)**

- (ii) Using information from **Figure 5**, sketch an exchange rate diagram to show how the change in Mexico's spending on imports in 2010 would have affected its exchange rate (US\$ per MX\$), *ceteris paribus*. [2]



- (c) Explain **two** factors that may cause the Mexican peso to appreciate against the US dollar in the future without any official intervention. [4]

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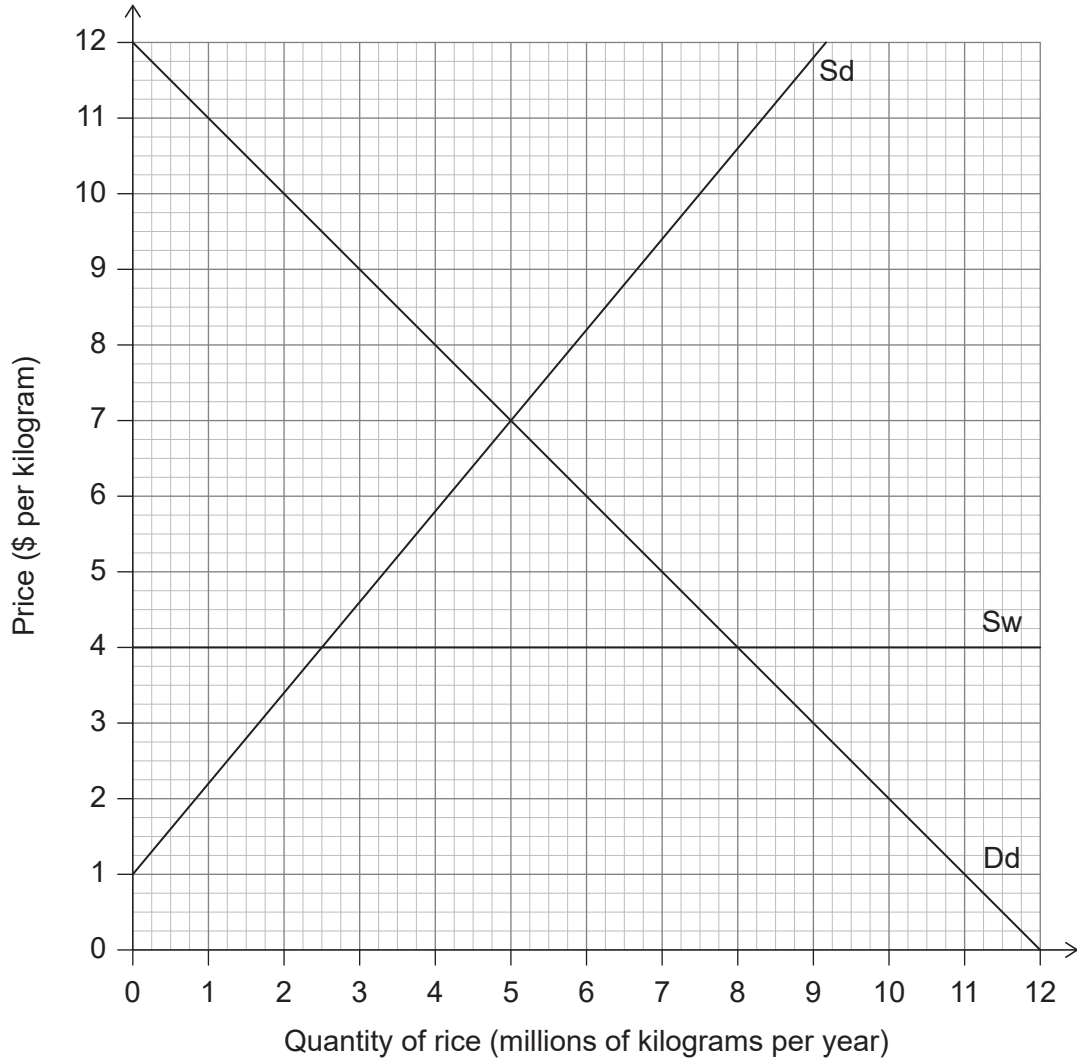
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(Question 3 continued)

Figure 6 illustrates the demand and supply conditions for rice in Country B, where Dd is domestic demand, Sd is domestic supply and Sw is world supply.

Figure 6



- (d) (i) Using **Figure 6**, identify the equilibrium price when Country B engages in free trade.

[1]

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**(Question 3 continued)**

- (ii) Using **Figure 6**, calculate the consumer surplus **and** the producer surplus when Country B engages in free trade.

[2]

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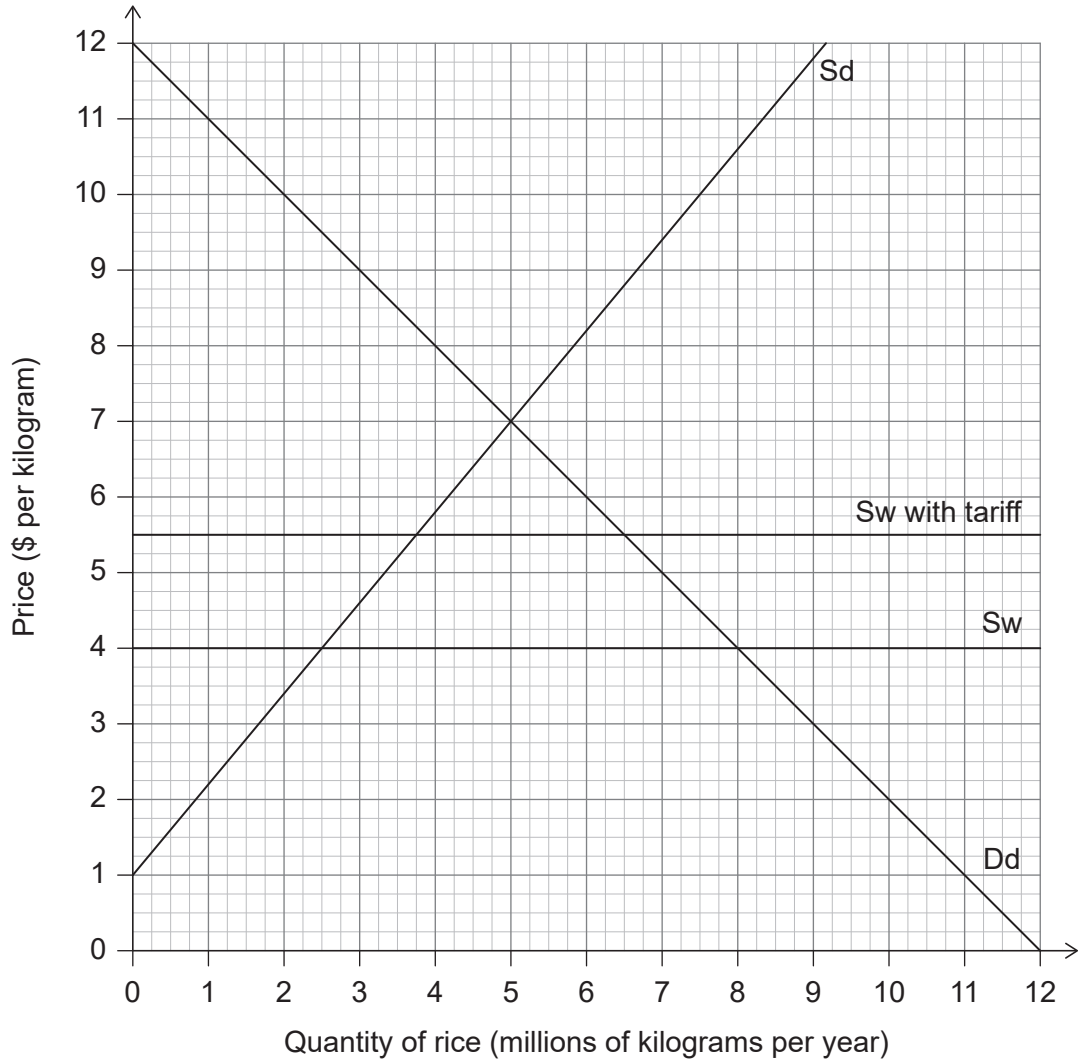
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(Question 3 continued)

Country B imposes a tariff on rice imports, which is illustrated on **Figure 7**.

**Figure 7**



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**(Question 3 continued)**

- (e) (i) Using **Figure 7**, identify the equilibrium quantity being consumed following the imposition of the tariff. [1]

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- (ii) Using **Figure 7**, calculate the revenue received by the government as a result of the imposition of the tariff in Country B. [2]

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- (iii) Using **Figure 7**, calculate the change in consumer surplus as a result of Country B imposing the tariff. [2]

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- (iv) Using **Figure 7**, calculate the welfare loss as a result of Country B imposing the tariff. [2]

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**(Question 3 continued)**

- (f) Explain **two** methods that a government could use to correct a persistent current account deficit.

[4]

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**References:**

**Figure 5** The World Bank 2019: World Development Indicators Licenced under CC BY 4.0  
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