Diploma Programme
Programme du diplôme
Programa del Diploma

Economics
Higher level
Paper 3

Thursday 2 November 2017 (morning)

Candidate session number

1 hour

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]**.

8817 – 5107

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

1. The demand for a product in a perfectly competitive market is given by the function

$$Qd = 64 - 2P$$

while market supply is given by the function

$$Qs = 4P - 8$$

where P is the price per unit in dollars ($), Qd is the monthly quantity demanded and Qs is the monthly quantity supplied in thousands of units.

(a) (i) State **one** characteristic of a perfectly competitive market. [1]

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(ii) Outline the reason why the coefficient of price in the supply function above is positive. [2]

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(b) Calculate the equilibrium price **and** the equilibrium quantity in this market. [2]

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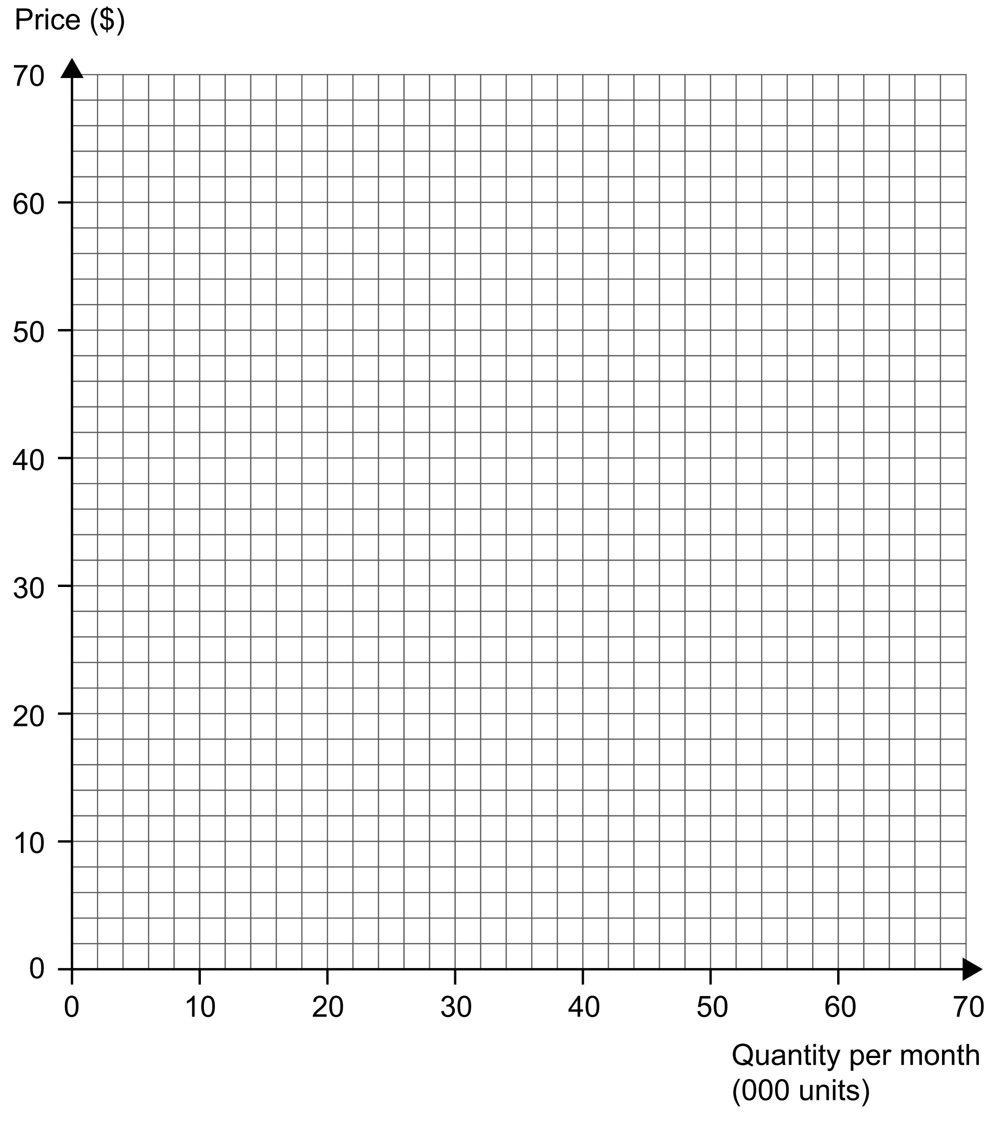
(Question 1 continued)

(c) Using the functions, plot the following in the grid below:

(i) a fully labelled market demand curve. [1]

(ii) a fully labelled market supply curve. [1]



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(Question 1 continued)

(d) Using an appropriate example, explain the significance of price elasticity of demand in relation to the size of the tax revenues a government collects following the imposition of an indirect tax. [4]

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In order to reduce consumption of the product, the government is considering the imposition of an indirect tax. Following the imposition of the indirect tax, the supply of the product will now be given by the function

$$Qs = 3P - 8$$

(e) (i) State the type of indirect tax under consideration. [1]

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(ii) Outline the reason for your answer to part (e)(i). [2]

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(This question continues on the following page)

(Question 1 continued)

(f) (i) The government decides to impose a $3 per unit tax on this perfectly competitive market. Plot and label the market supply curve following the imposition of this tax in the grid on **page 3**. [1]

(ii) Calculate the resulting consumer expenditure **and** producer revenue **and** government tax revenue following the imposition of the $3 per unit tax. [3]

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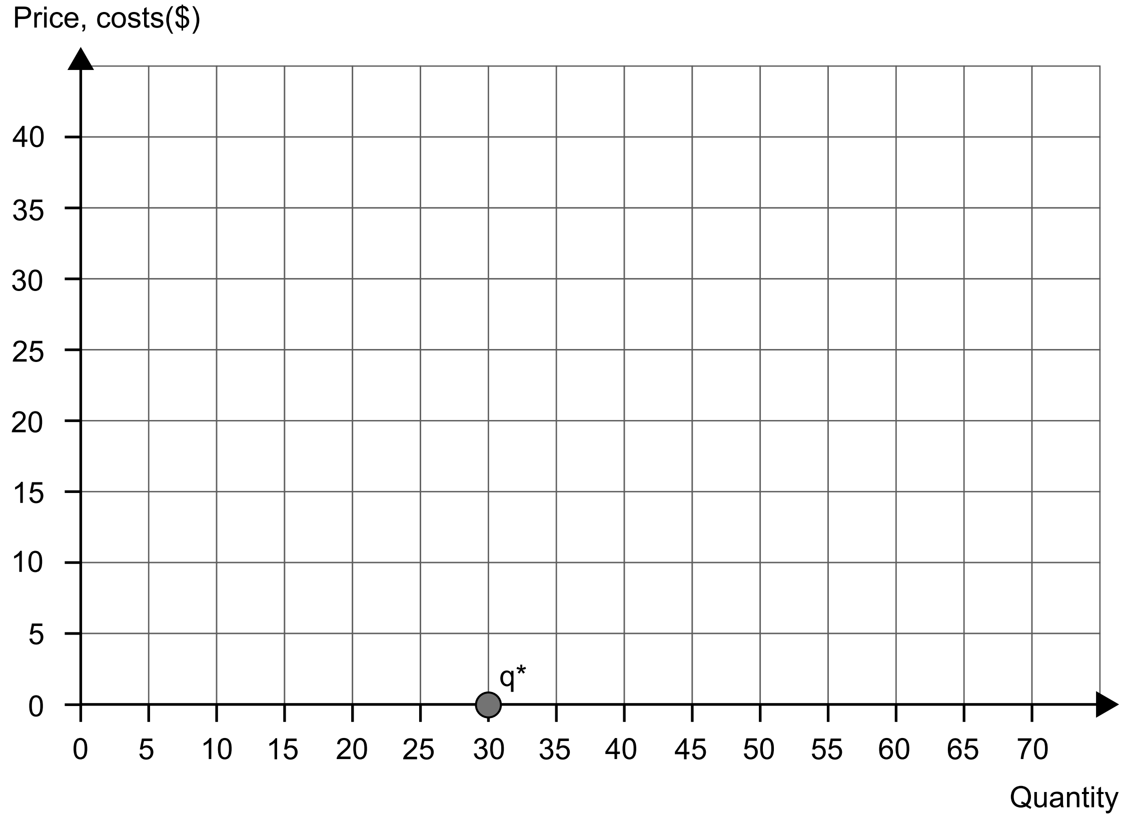
(Question 1 continued)

The questions below refer to a different perfectly competitive market.

(g) (i) In the following grid, sketch an appropriate marginal cost (MC) curve, if q* is the profit maximizing level of output for a perfectly competitive firm and the market determined price for the good is $20 per unit. [1]



(ii) In the grid above, sketch an average total cost (ATC) curve that would result in economic losses for this firm. [1]

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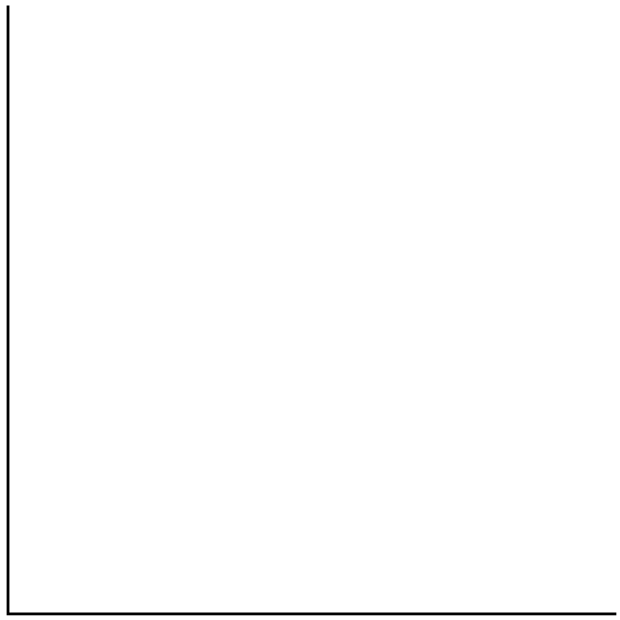
(Question 1 continued)

(h) If a perfectly competitive firm aiming at profit maximization is producing at a level of output for which marginal revenue (MR) > marginal cost (MC), state what action the firm should take with respect to its level of output. [1]

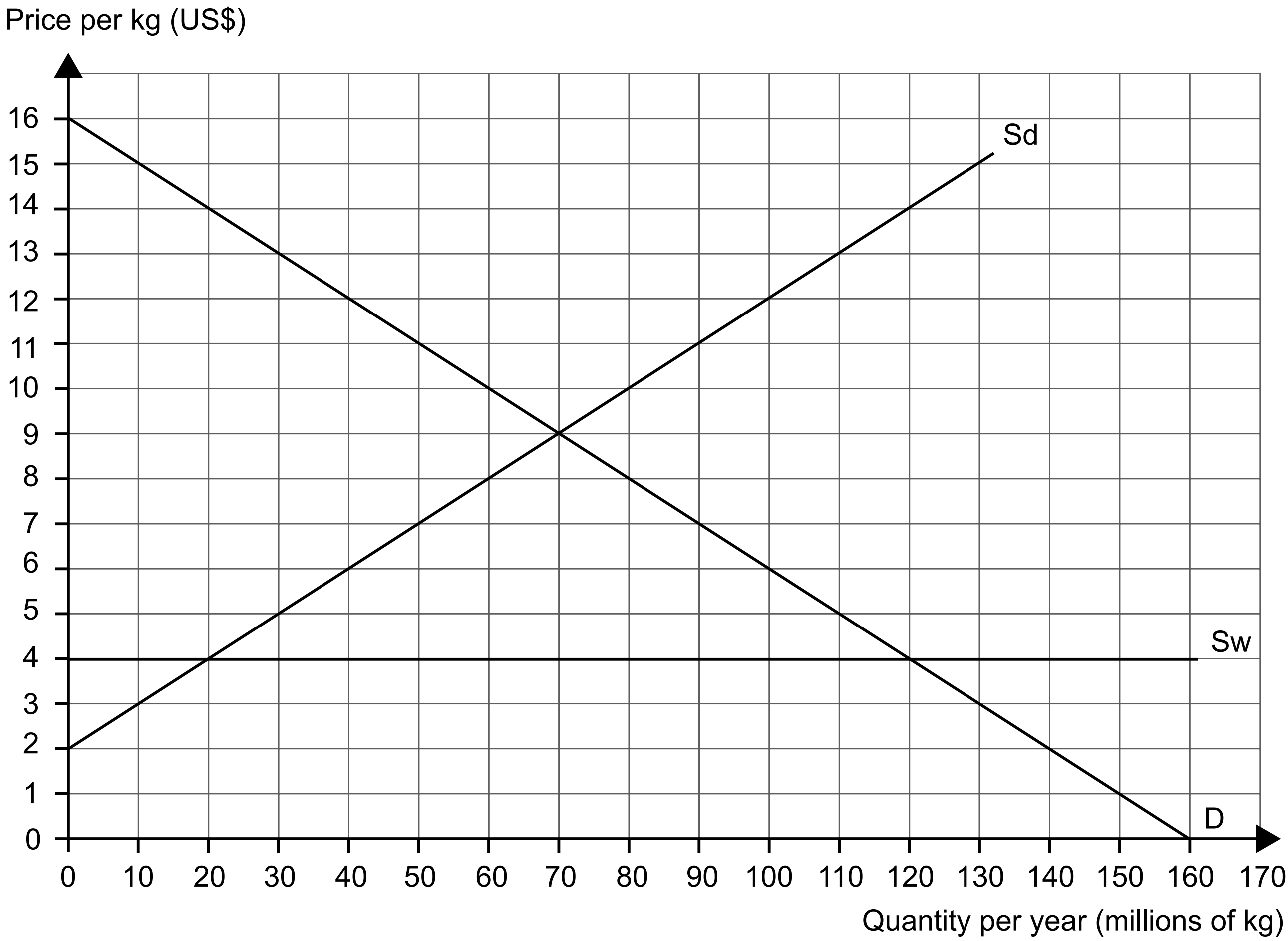
(i) Using an appropriate diagram, explain when a loss-making perfectly competitive firm will shut down in the short run. [4]



2. Quinoa is an agricultural product traded in world markets and priced in US dollars (US$). It is produced in many countries.

Farmers in Fairsea, a small island open economy, produce quinoa. The following diagram illustrates demand (D) and supply conditions for quinoa in Fairsea, where Sd is domestic supply and Sw is world supply.

There are no restrictions on free trade and the world price of quinoa is initially at US$4 per kilogram (kg). A portion of Fairsea's quinoa requirements are imported.



(a) Calculate the annual import expenditure on quinoa under free trade. [2]

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(Question 2 continued)

(b) (i) Define the term *consumer surplus*. [2]

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(ii) Calculate the size of the consumer surplus under free trade. [2]

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The government of Fairsea decides to impose a quota on quinoa imports to assist its quinoa farmers. The quota is set at 50 % of the initial annual volume of quinoa imports into Fairsea.

(c) (i) Explain **one** way in which the effect of imposing a tariff is likely to be different from that of imposing a quota. [2]

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(ii) On the diagram on **page 8**, draw and label Fairsea's new quinoa supply curve following the introduction of the quota. [1]

(iii) Determine the new equilibrium price of quinoa in Fairsea. [1]

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(Question 2 continued)

(d) Using the diagram, explain **two** benefits enjoyed by Fairsea farmers following the introduction of the quota. [4]

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(Question 2 continued)

The currency of Fairsea is the Fairsea dinar (FD). The current exchange rate between the Fairsea dinar and the US dollar (US$) is

US$1.00 = FD0.35

while the current exchange rate between the US dollar and the euro (€) is

€1.00 = US$1.12

(e) (i) Given the above exchange rates, calculate the current exchange rate between the euro and the Fairsea dinar. [2]

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(ii) Using your answers to part (b)(ii) and (c)(ii), calculate in Fairsea dinars the change in the consumer surplus following the introduction of the quota. [3]

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(iii) Calculate the change in export revenues of foreign farmers (in US dollars) following the introduction of the quota, assuming that they sell their quinoa at the new Fairsea market price. [2]

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(Question 2 continued)

(f) The US central bank decides to increase US interest rates. As a result, many financial investors switch their Fairsea dinar deposits into US dollars. Explain **one** advantage and **one** disadvantage for the Fairsea economy from the expected change in the value of the Fairsea dinar. [4]

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3. The following data relate to Country X in 2016.

Table 1

Item	$ million
Government expenditure on goods and services	640
Imports of goods and services	1045
Factor income earned (received) from abroad	435
Investment expenditure	1130
Factor income paid (sent) abroad	482
Exports of goods and services	980
Wages and salaries	2360
Profits of companies	2710
Unemployment benefits	758
Subsidies	349
Consumer expenditure	4590

(a) Calculate the gross domestic product (GDP) of Country X for 2016. [2]

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(b) Calculate the gross national product (GNP) of Country X for 2016. [2]

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(Question 3 continued)

The following data relate to Country X for 2011 to 2015.

Table 2

Year	Nominal GDP ($ million)	GDP deflator	Real GDP
2011	4620	90.95	
2012	4865	91.61	
2013	5100	94.32	
2014	5730	100.00	
2015	6000	101.23	

(c) (i) Calculate real GDP for Country X for 2012 **and** 2013. Enter your answers in **Table 2**. [2]

(ii) Using your answers to part (c)(i), calculate the rate of economic growth for 2013. [2]

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(Question 3 continued)

(d) (i) Outline the likely effects on a country's balance of trade of a high rate of economic growth. [2]

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(ii) Apart from the effect on the balance of trade, state **one other** possible consequence for Country X of a high rate of economic growth. [1]

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(Question 3 continued)

The government of Country X is concerned about the distribution of income in the country, and would like to make it more equitable. The following table illustrates the amount of tax paid per year at different levels of income.

Table 3

Income per year ($)	Tax paid per year ($)
20 000	4350
40 000	8100
60 000	11 570

(e) (i) A politician in Country X has stated that "Our tax system is inequitable as it is regressive". Explain this statement using the data in **Table 3**. [4]

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(ii) Apart from taxation, state **two other** measures which could be taken by a government to make the distribution of income more equitable. [2]

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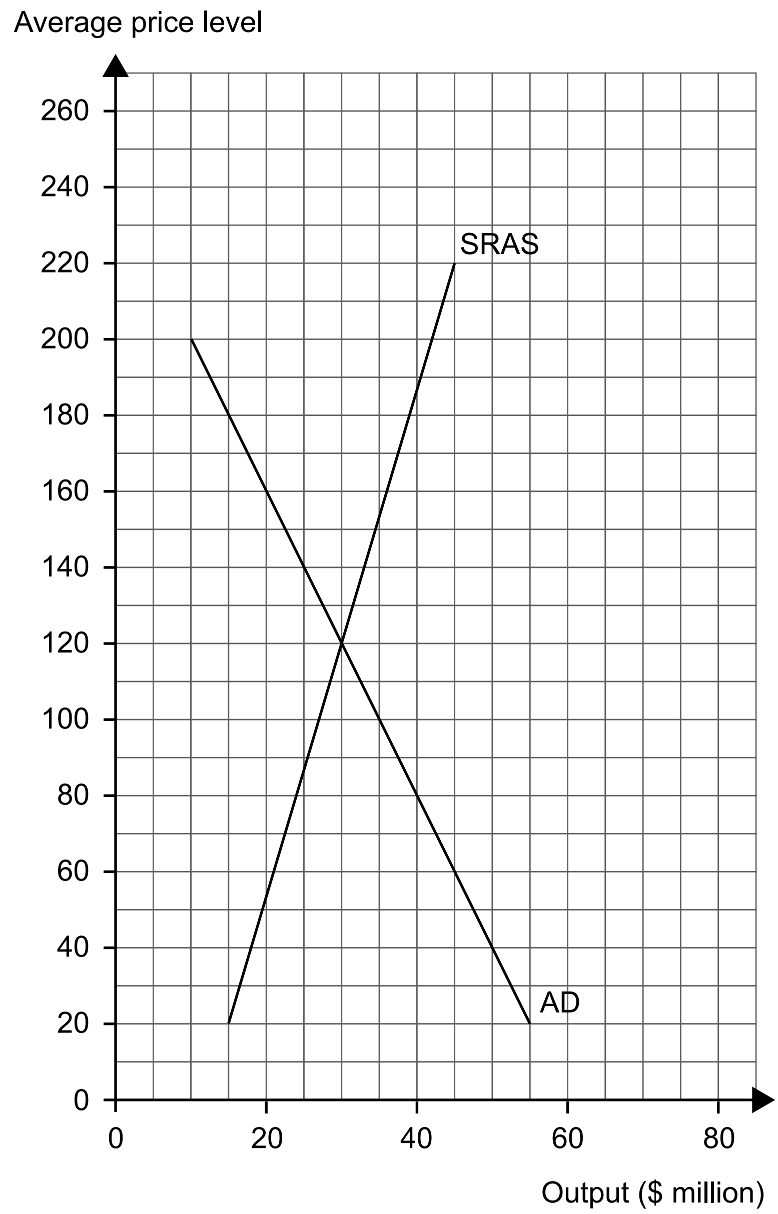
(Question 3 continued)

A neighbouring country, Country Y, is currently in a position of long-run equilibrium (assuming a monetarist/new classical model). The following diagram illustrates the aggregate demand (AD) and short-run aggregate supply (SRAS) curves for Country Y.



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(Question 3 continued)

An increase in consumer confidence has caused aggregate demand to increase by $25 million.

(f) (i) On the diagram on **page 18**, draw and label the new aggregate demand curve. [1]

(ii) Determine the average price level once the economy has returned to a position of long-run equilibrium. [1]

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(iii) Explain how the economy would move back to this position of long-run equilibrium. [4]

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The government of Country Y has announced its intention to introduce incentive-related supply-side policies.

(g) Outline how **one** incentive-related supply-side policy would help to boost aggregate supply. [2]

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