Diploma Programme
Programme du diplôme
Programa del Diploma

Economics
Higher level
Paper 3

Thursday 3 November 2016 (afternoon)

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 in the 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]**.

20 pages

20EP01

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Please **do not** write on this page.

Answers written on this page
will not be marked.

Answer **two** questions. Each question is worth **[25 marks]**. Write your answers in the boxes provided.

1.   Firm A, a firm with monopoly power, is producing at a level of output Q' equal to 150 000 units
      per month for which the following are true (all figures are in dollars ($)):

      Table 1

Average revenue (AR)	140.00
Price (P)	140.00
Marginal revenue (MR)	80.00
Average cost (AC)	60.00
Marginal cost (MC)	50.00

      The values in **Table 1** imply the following:

$$P = AR > MR > AC > MC$$

      (a)   Define the term *monopoly power*.   [2]

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      (b)   Using the figures provided in **Table 1**, calculate the monthly level of profits Firm A is
             making at the current level of output, Q'.   [3]

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(Question 1 continued)

(c)   Using the relationship $P=AR>MR>AC>MC$ and/or figures provided in **Table 1**:

(i)   State the reason Firm A cannot be a perfect competitor.   [1]

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(ii)   Determine whether Firm A should increase or decrease its level of output in order to maximize profits. You **must** give a reason for your choice.   [2]

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(iii)   Determine whether total revenue collected will increase, decrease or remain unchanged if Firm A increases its level of output. You **must** give a reason for your choice.   [2]

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(iv)   Describe how average cost will be affected if Firm A increases its level of output.   [2]

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20EP04

(Question 1 continued)

      (v)   Determine whether Firm A is productively efficient at the current level of output. You **must** give a reason for your choice.   [2]

    (d)   Explain why allocative efficiency is achieved, in the absence of externalities, at a level of output where price (average revenue) is equal to marginal cost.   [4]
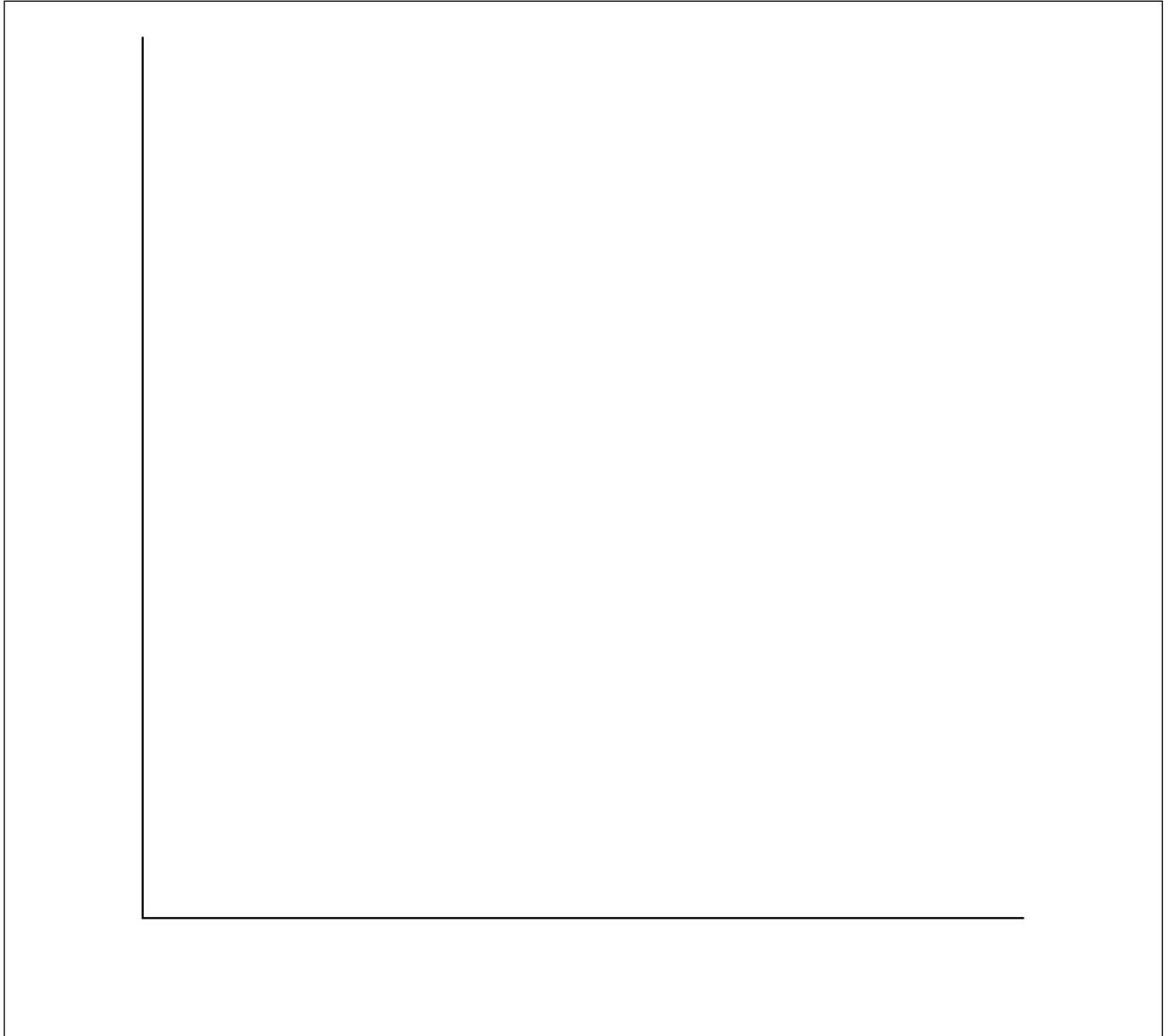
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(Question 1 continued)

(e)   On the following axes, sketch a fully labelled diagram showing the level of output Q'
for which the relationship $P=AR>MR>AC>MC$ is true. The use of figures provided in
Table 1 is **not** required.   [3]

(This question continues on the following page)

(Question 1 continued)

Now assume that the market in which Firm A operates has evolved into an oligopoly with only two firms, Firm A and Firm B. Each firm can cut price or maintain the current price. The following payoff matrix shows the profits they face. The profit payoffs for Firm A are in bold.

| | | Firm A | |
		Maintain price	Cut price
Firm B	Maintain price	**$18.00 million** $18.00 million	**$24.00 million** $3.00 million
	Cut price	**$3.00 million** $24.00 million	**$8.00 million** $8.00 million

(f)   Using the profit figures in the payoff matrix, explain why strategic interdependence will lead both firms to cut price.   [4]

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2. The following diagram illustrates the market for bananas in Country A. D and S represent the domestic demand and supply for bananas, while bananas can be imported at the current world price of $3 per kg.

Price of bananas ($/kg)
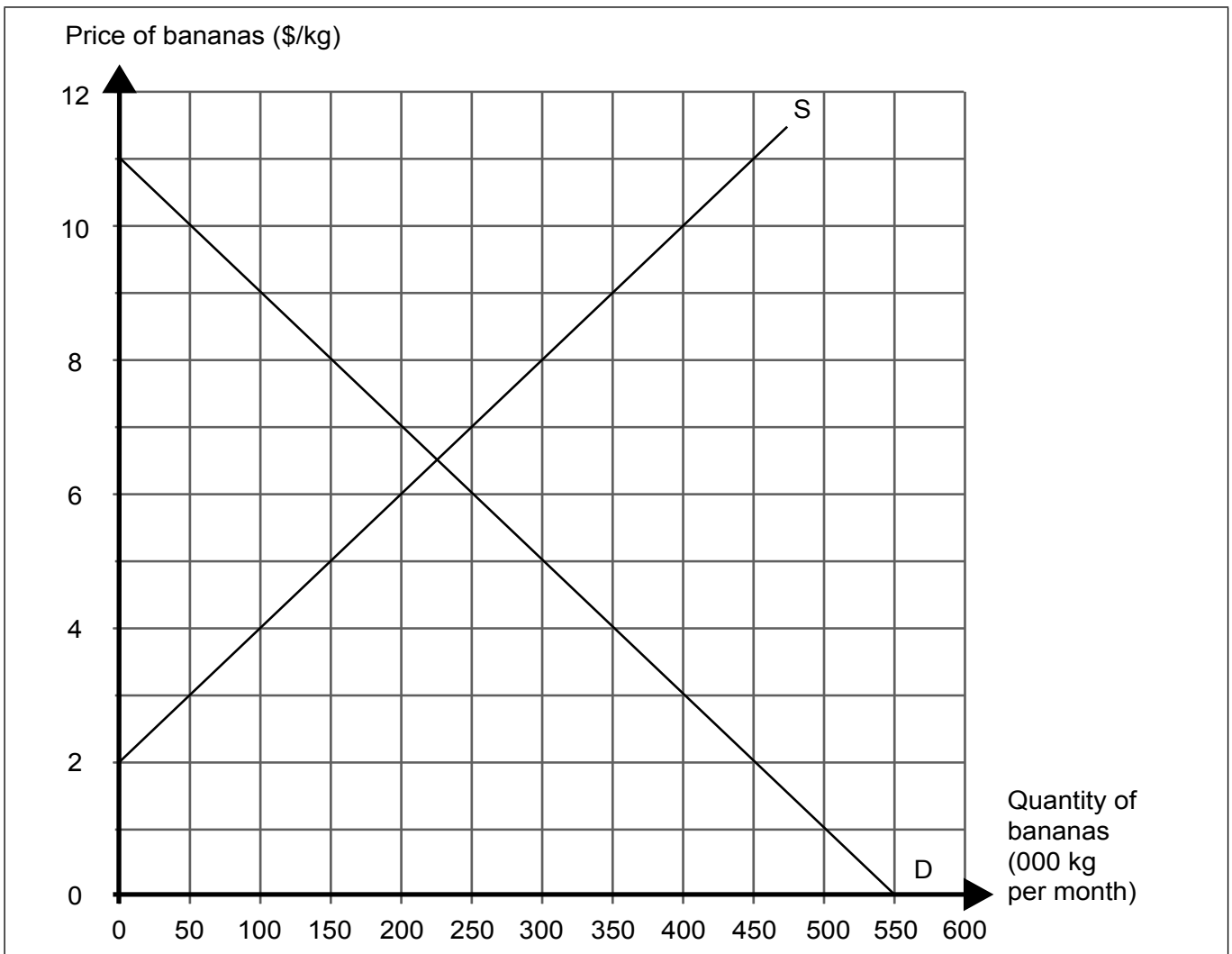
(a)   Assuming that there are no restrictions on the importing of bananas into Country A:

(i)   State the quantity of bananas which will be purchased each month in Country A.   [1]

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(Question 2 continued)

   (ii)   Calculate the monthly expenditure on bananas imported into Country A.   [1]

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   (iii)   Calculate the domestic producer surplus.   [1]

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(Question 2 continued)

The government of Country A decides to impose a quota on banana imports of 150 000kg per month.

(b) (i) Identify the price which would be paid by consumers in Country A per kg of bananas following the imposition of the quota. [1]

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(ii) Identify the quantity of bananas which would be purchased in Country A per month following the imposition of the quota. [1]

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(iii) Calculate the change in revenue earned by domestic producers of bananas in Country A as a result of the quota. [3]

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(Question 2 continued)

(c)   With reference to the diagram, explain why the welfare loss from the imposition of the quota is likely to be greater than the welfare loss resulting from a tariff of $2 per kg.   [4]

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(Question 2 continued)

The demand and supply functions for the currency of Country A (the dollar ($)) are given by:

$$Qd = 1900 - 18P$$

$$Qs = 580 + 12P$$

where Qd is the quantity of dollars demanded per month, Qs is the quantity of dollars supplied per month and P is the price of the dollar, measured in yen (¥).

(d)   (i)   Outline the reason why a fall in the price of the dollar should lead to an increase in the quantity of dollars demanded. [2]

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(ii)   Assume that the dollar/yen exchange rate is in equilibrium. Using the functions above, calculate the cost, in dollars, of a motorbike which costs ¥552 640. [3]

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20EP13

(Question 2 continued)

The following table provides selected items of the balance of payments for Country A in 2015.

Table 1

	Country A ($ billion)
Imports of services	1590
Exports of goods	3240
Capital transfers (net)	−53
Current transfers (net)	−488
Exports of services	1928
Portfolio investment (net)	157
Income (net)	−456
Imports of goods	3519

(e)　(i)　Using examples from **Table 1**, outline the difference between debit items and credit items in the balance of payments.　[2]

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(ii)　Calculate the current account balance from the data given in **Table 1**.　[2]

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(Question 2 continued)

      (iii)   Explain **two** implications of a rising current account surplus.   [4]

Turn over

3. The following table illustrates the tax rates that are applied to different ranges of annual incomes in Country Z in the years 2015 and 2016.

Table 1

Income ($ per year)	Rate of income tax (%)
0 – 10 000	0
10 001 – 20 000	10
20 001 – 40 000	20
40 001 – 60 000	40
60 001 and above	60

(a) (i) Fernando earns $35 000 in 2015. Calculate his average rate of tax. [2]

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(ii) Maki, who earns $70 000 in 2015, pays an average rate of tax of 27.14 %. Using the figures provided in **Table 1**, outline why her average tax rate is higher than that of Fernando. [2]

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(iii) Outline **one** potential advantage and **one** potential disadvantage of a progressive tax system. [2]

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20EP16

(Question 3 continued)

   (iv)   Fernando receives a pay rise in 2016. His total income rises to $43 000.
          Calculate the percentage of his additional income which must be paid as tax.   [3]

   (b)   Country Z implements a 10 % sales tax in 2016. Explain why an indirect tax is unlikely
         to be used as a mechanism to promote equity.   [4]

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Turn over

(Question 3 continued)

The following table illustrates the distribution of income in Country X and Country Y in 2015 before taxes and transfer payments.

Table 2

Quintile	Total income received in Country X (%)	Total income received in Country Y (%)
Lowest 20 %	3.00	10.00
Second 20 %	6.80	15.00
Third 20 %	12.00	20.00
Fourth 20 %	20.10	25.00
Highest 20 %		30.00

(c)   (i)   Calculate the percentage of income received by the highest 20 % in Country X. Enter your answer in **Table 2**.   [1]

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(ii)   Outline why Country X has a higher Gini coefficient, using the data in **Table 2**.   [2]

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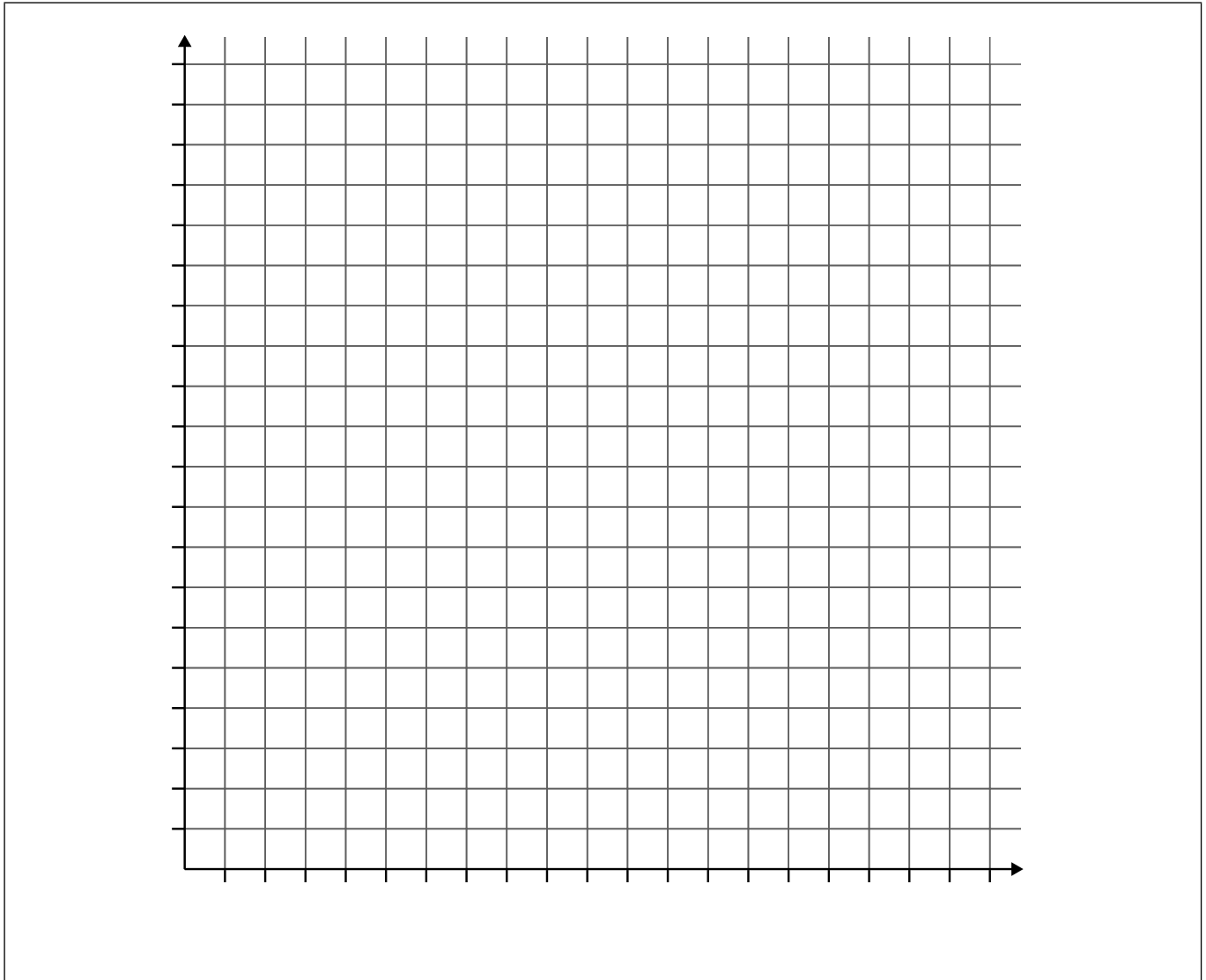
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(Question 3 continued)

(iii)   On the following axes, plot the Lorenz curve for Country Y.   [3]

(iv)   Outline why the Gini coefficient must have a value between 0 and 1 (or between 0 and 100).   [2]

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(Question 3 continued)

(d)   Country X raises the level of transfer payments. Explain **two** reasons why this policy could help to break the poverty cycle. [4]

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