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]**.

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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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(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]

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(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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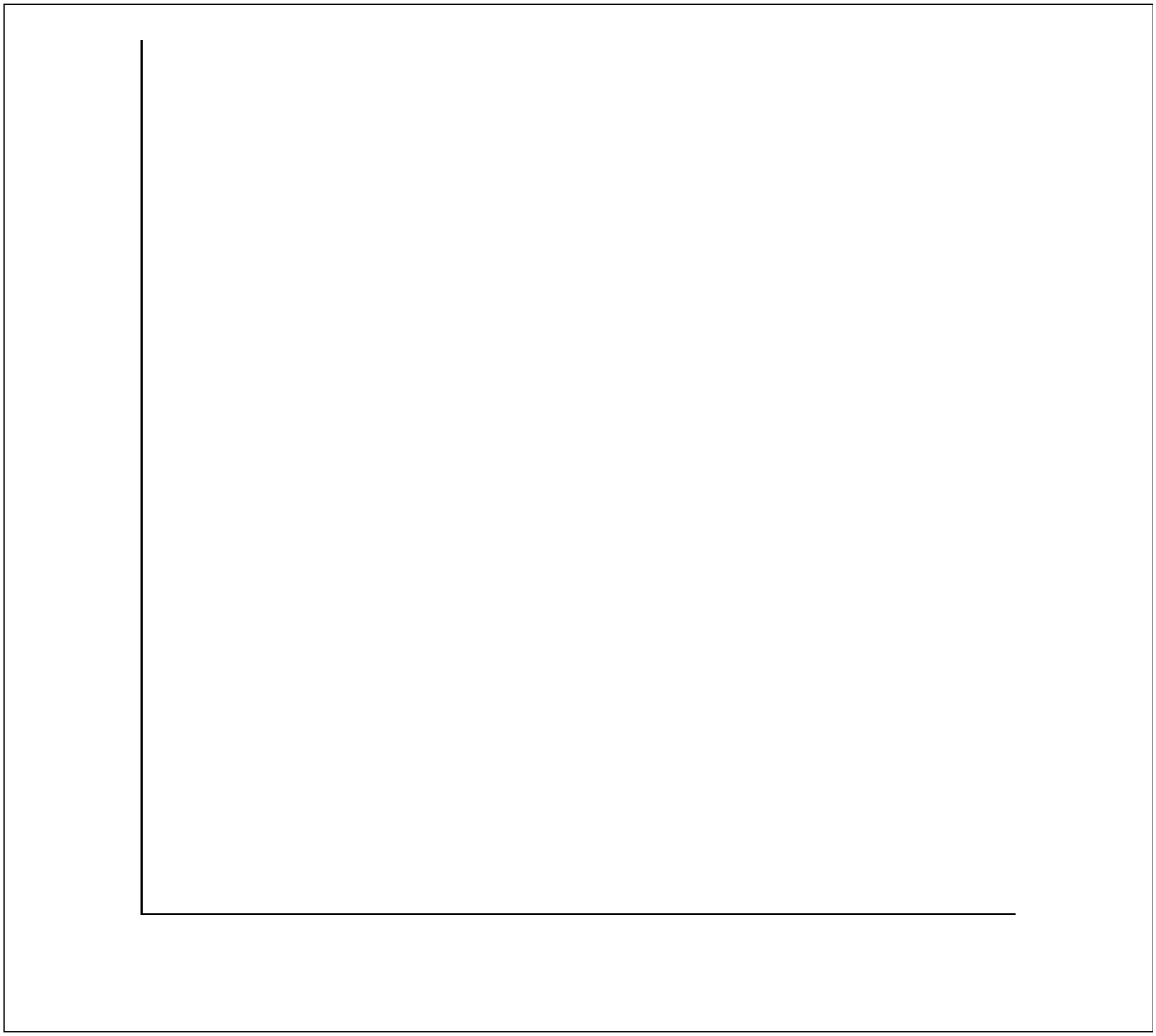
(Question 1 continued)

(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]



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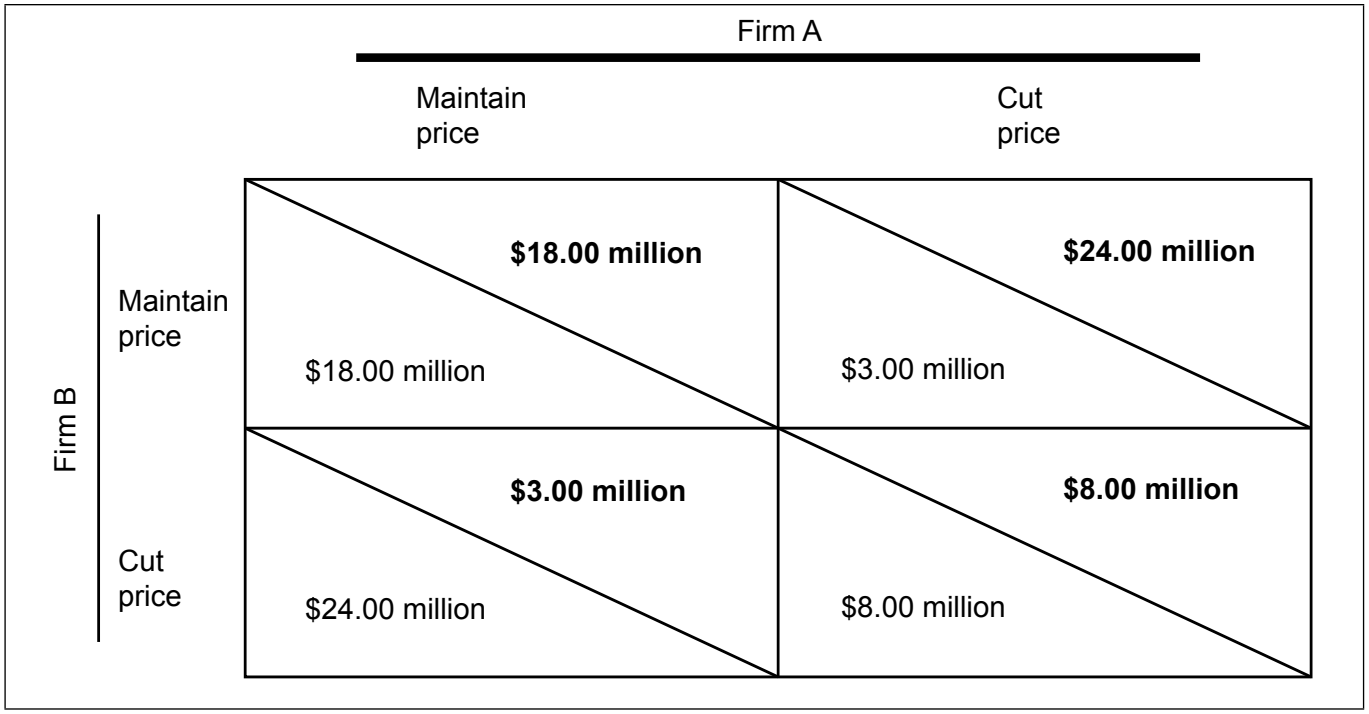
(Question 1 continued)

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.



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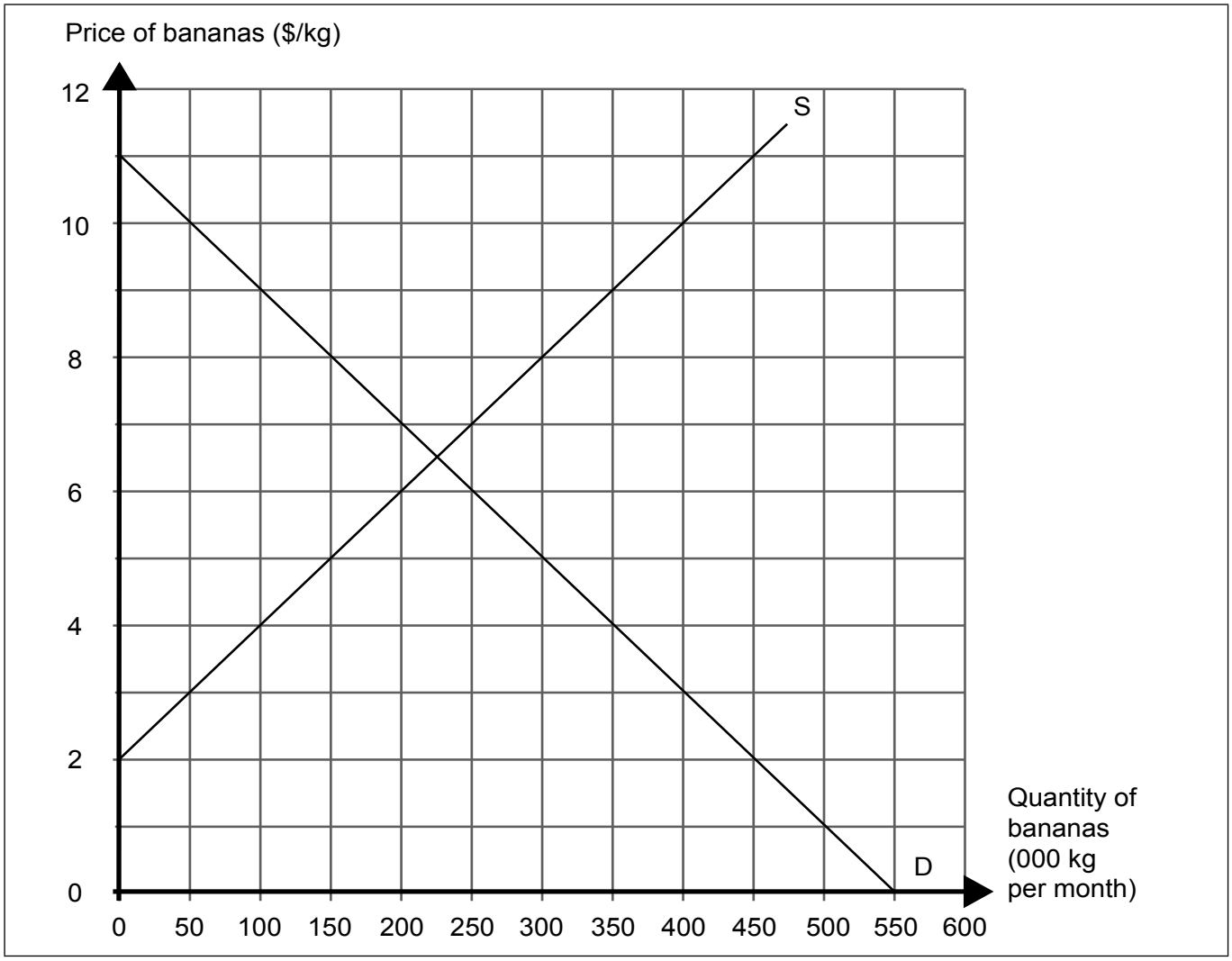
2. The following diagram illustrates the market for bananas in Country A. D and S represent the domestic demand and supply for bananas, while bananas can be imported at the current world price of $3 per kg.



(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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(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]

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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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(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]

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(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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(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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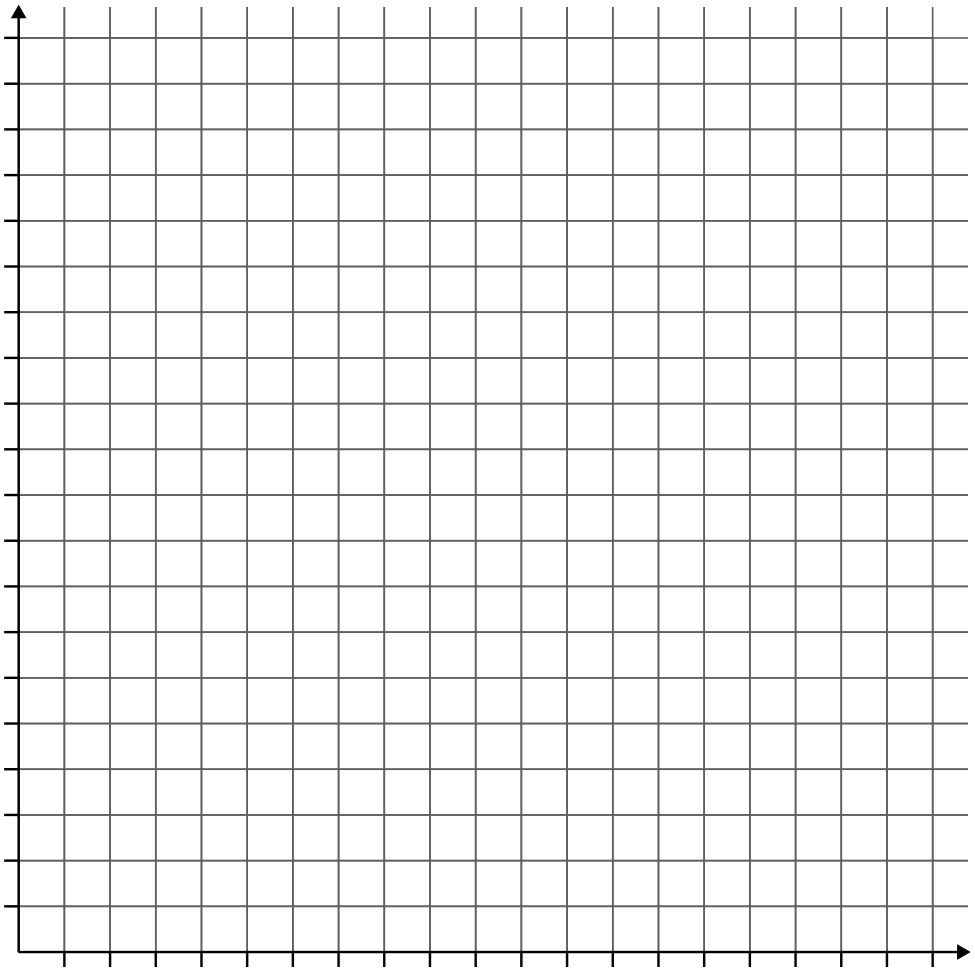
(Question 3 continued)

(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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