

Economics
Higher level
Paper 3

Thursday 3 November 2016 (afternoon)

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 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]**.



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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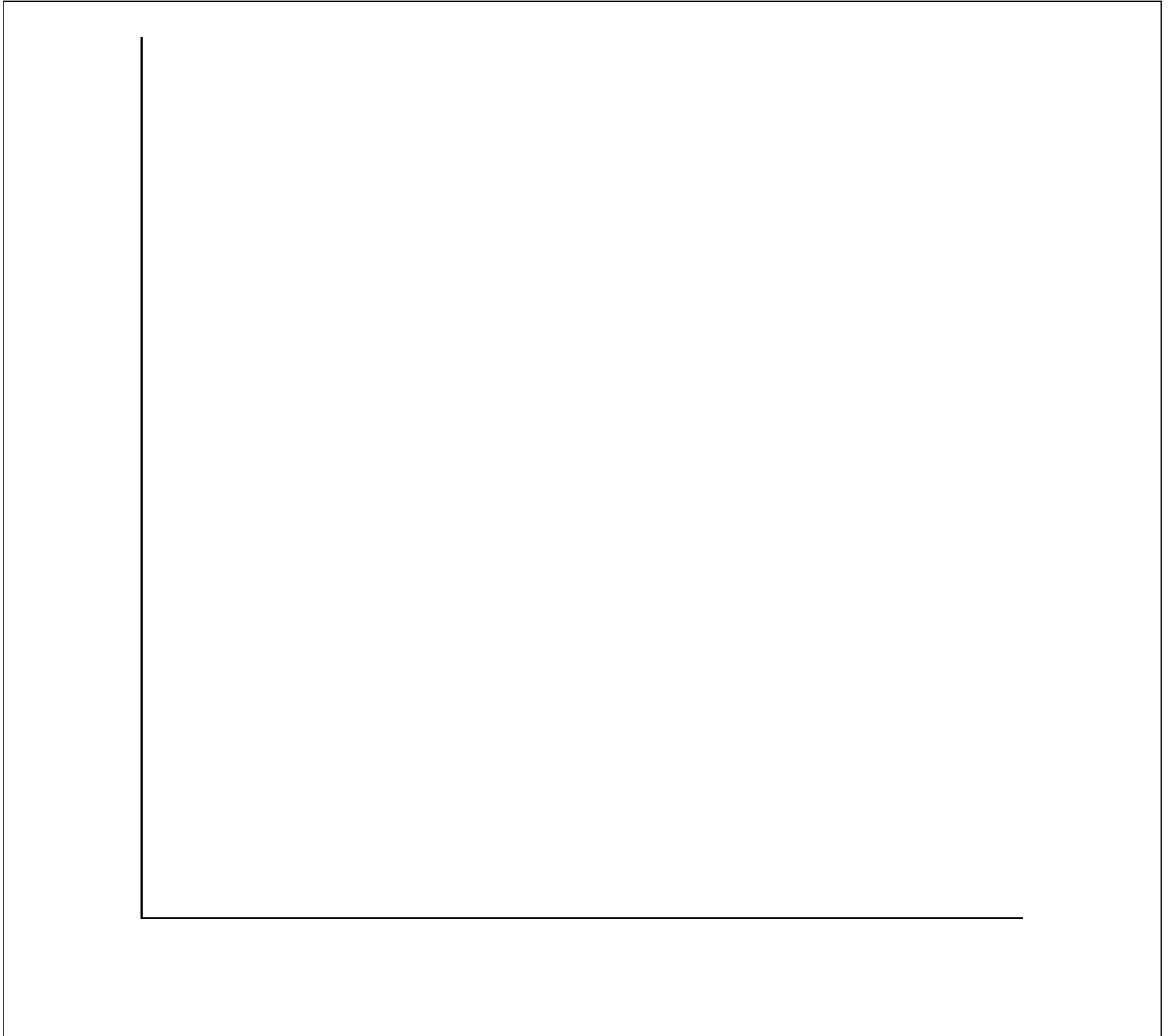
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(Question 1 continued)

- (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.

		Firm A	
		Maintain price	Cut price
Firm B	Maintain price	\$18.00 million \$18.00 million	\$3.00 million \$24.00 million
	Cut price	\$24.00 million \$3.00 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.

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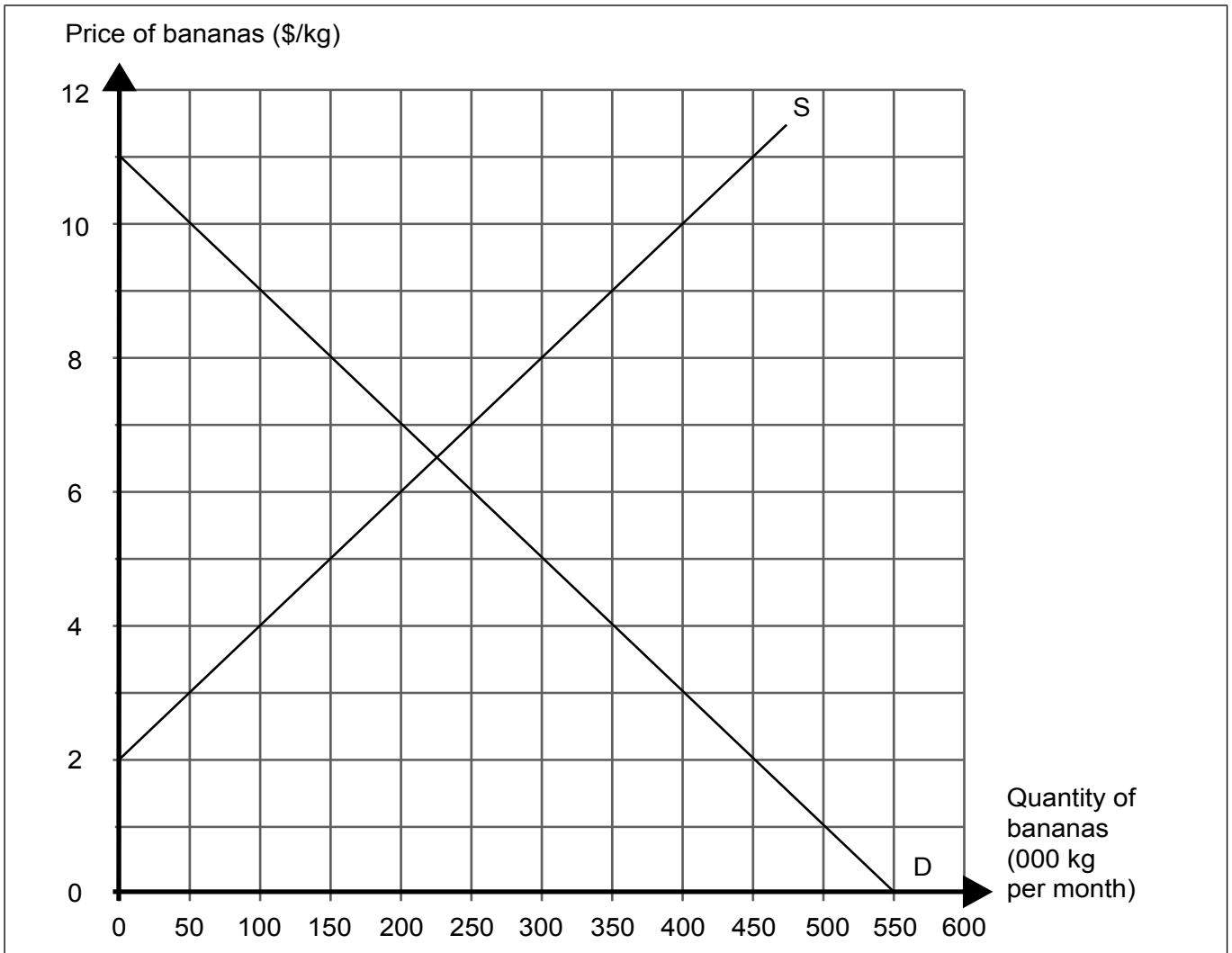
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2. The following diagram illustrates the market for bananas in Country A. D and S represent the domestic demand and supply for bananas, while bananas can be imported at the current world price of \$3 per kg.



(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:

$$Q_d = 1900 - 18P$$

$$Q_s = 580 + 12P$$

where Q_d is the quantity of dollars demanded per month, Q_s 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.

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

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(Question 2 continued)

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

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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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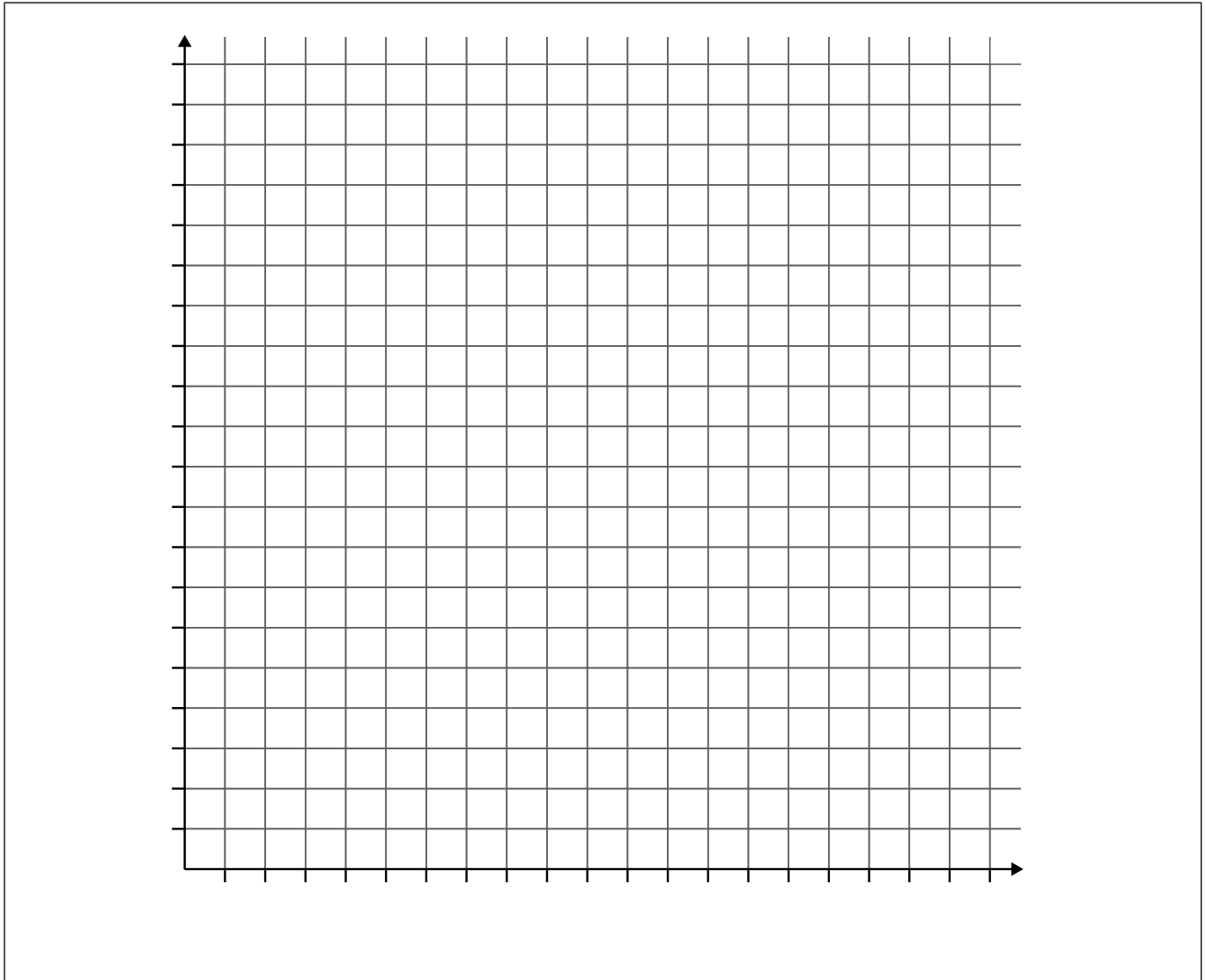
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(Question 3 continued)

(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.

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