1.18 Measuring Income and Wealth Inequality: The Lorenz Curve and Gini Coefficient: Test Pack

Total Marks

AQA 7136 · Calculators not allowed · about 25 minutes

Name: _____ Date: ____ / ____ / _____

Answer all questions. Write full sentences for questions worth 4 marks or more. Do not use a calculator; all percentages are rounded for ease. Time guidance: 25 minutes.

1 Multiple choice. In the context of measuring inequality in a UK-style economy, which of the following best describes the Gini coefficient?

- ☐ A: The ratio of mean income to median income.
- ☐ B: The proportion of households in the top 10% of income earners.
- ☐ C: The ratio of the area between the Lorenz curve and the line of perfect equality to the total area under the line of perfect equality.
- ☐ D: The percentage of national income held by the top 1%.

(Total for Question 1 is 1 mark)

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2 State briefly why the Gini coefficient ranges from 0 to 1, and give the interpretation of the two extremes for an income distribution in an economy.

(Total for Question 2 is 1 mark)

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3 Define the term 'income' as used when measuring inequality in an economy, naming its primary factor income components in a UK-style context.

(Total for Question 3 is 2 marks)

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4 Define the term 'wealth' as used when analysing inequality in a UK-style economy, and give two typical sources of wealth.

(Total for Question 4 is 2 marks)

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5 Distinguish between income inequality and wealth inequality in the context of measuring economic inequality in the UK, giving one practical example that shows how they can differ.

(Total for Question 5 is 4 marks)

6 State three distinct sources of income and three distinct sources of wealth that are relevant when measuring inequality in a modern UK-style economy.

(Total for Question 6 is 3 marks)

7 Explain, using the Lorenz curve concept, what the line of perfect equality represents in the measurement of income inequality and why real-world Lorenz curves never lie above this line for income distributions.

(Total for Question 7 is 2 marks)

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Mark scheme · 1.18 Measuring Income and Wealth Inequality: The Lorenz Curve and Gini Coefficient: Test Pack

Question 1

chooses option C, which correctly defines the Gini coefficient as the area between the Lorenz curve and the diagonal divided by the total triangle area under the diagonal **B1**

Answer: C

Question 2

0 means perfect equality (Lorenz curve coincides with diagonal), 1 means perfect inequality (one person has all income), and the ratio formulation produces values between 0 and 1 **B1**

Answer: Gini is 0 at perfect equality and 1 at perfect inequality because it is a ratio of areas that ranges from zero area between curves to the full triangle area.

Question 3

a payment flow received by individuals or households over a period, representing earnings or returns from economic activity **B1**

primary components: wages/salaries, rent, interest and profit **B1**

Answer: Income is the flow of payments to individuals over time, including wages and salaries, rent, interest and profit.

Question 4

wealth is the stock of assets held by an individual or household at a point in time **B1**

two typical sources: property/household real estate and accumulated savings/investments or inheritance **B1**

Answer: Wealth is a stock of assets at a point in time; common sources include property and savings or inheritance.

Question 5

states that income inequality refers to differences in flows of earnings over time, while wealth inequality refers to differences in stock of assets at a point in time **B1**

explains that wealth includes accumulated assets like property and savings, which can persist across generations **B1**

gives a clear example, e.g. a retired person with low current income but high house equity has low income but high wealth **B1**

makes the implication that wealth inequality can be larger than income inequality because assets compound and transfer across generations **B1**

Answer: Income is a flow over time, wealth is a stock. Example: a retiree may have low income but high housing wealth, showing income and wealth inequality can move in different directions.

Question 6

one correct income source, e.g. wages or salaries **B1**

one further income source, e.g. interest or rent or profit **B1**

one correct wealth source, e.g. property/house price equity or savings or inheritance **B1**

Answer: Income sources include wages, interest and profit. Wealth sources include property, savings and inheritance.

Question 7

the line of perfect equality represents every cumulative percentage of population receiving the same cumulative percentage of income, e.g. 30% of people receive 30% of income **B1**

real-world Lorenz curves cannot lie above this line because that would imply some proportion of the population receives more than their proportional share of income while others receive less, violating the cumulative ordering used to construct the Lorenz curve; the diagonal is the equal distribution benchmark **B1**

Answer: The diagonal shows exact equality, with x% of people getting x% of income; actual Lorenz curves lie below it because some people always have less than their proportional share, so the curve is bowed below the diagonal.

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