Diploma Programme
Programme du diplôme
Programa del Diploma

Economics
Higher level
Paper 3

Thursday 1 November 2018 (morning)

1 hour

Candidate session number

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]**.

17 pages

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

1.   Firm A produces cartons of coffee. **Figure 1** illustrates the firm's total cost (TC) and variable cost (VC) at different output levels per month.

Figure 1
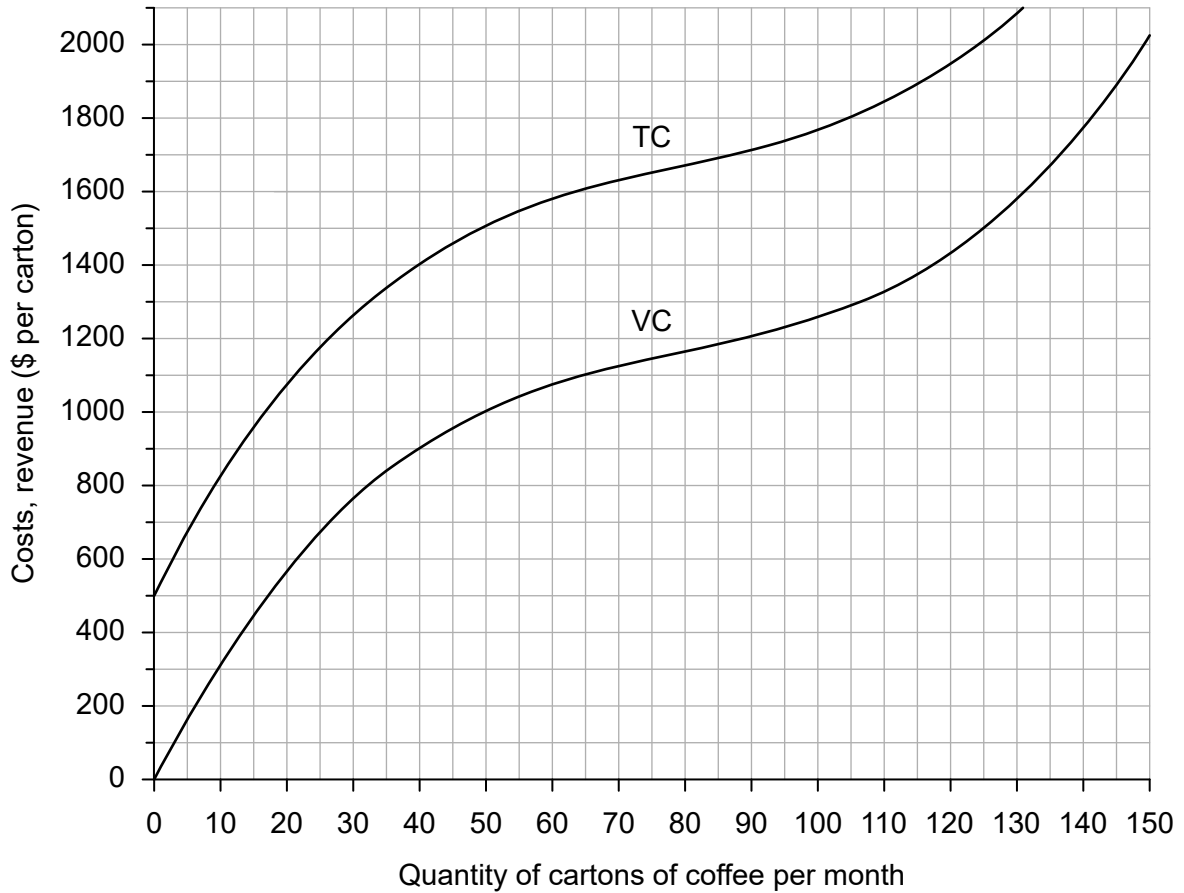
(a)   (i)   Calculate Firm A's average fixed costs when it is producing 125 cartons of coffee per month.   [2]

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(Question 1 continued)

    (ii)   Calculate Firm A's average variable costs when it is producing 125 cartons
           of coffee per month.   [2]

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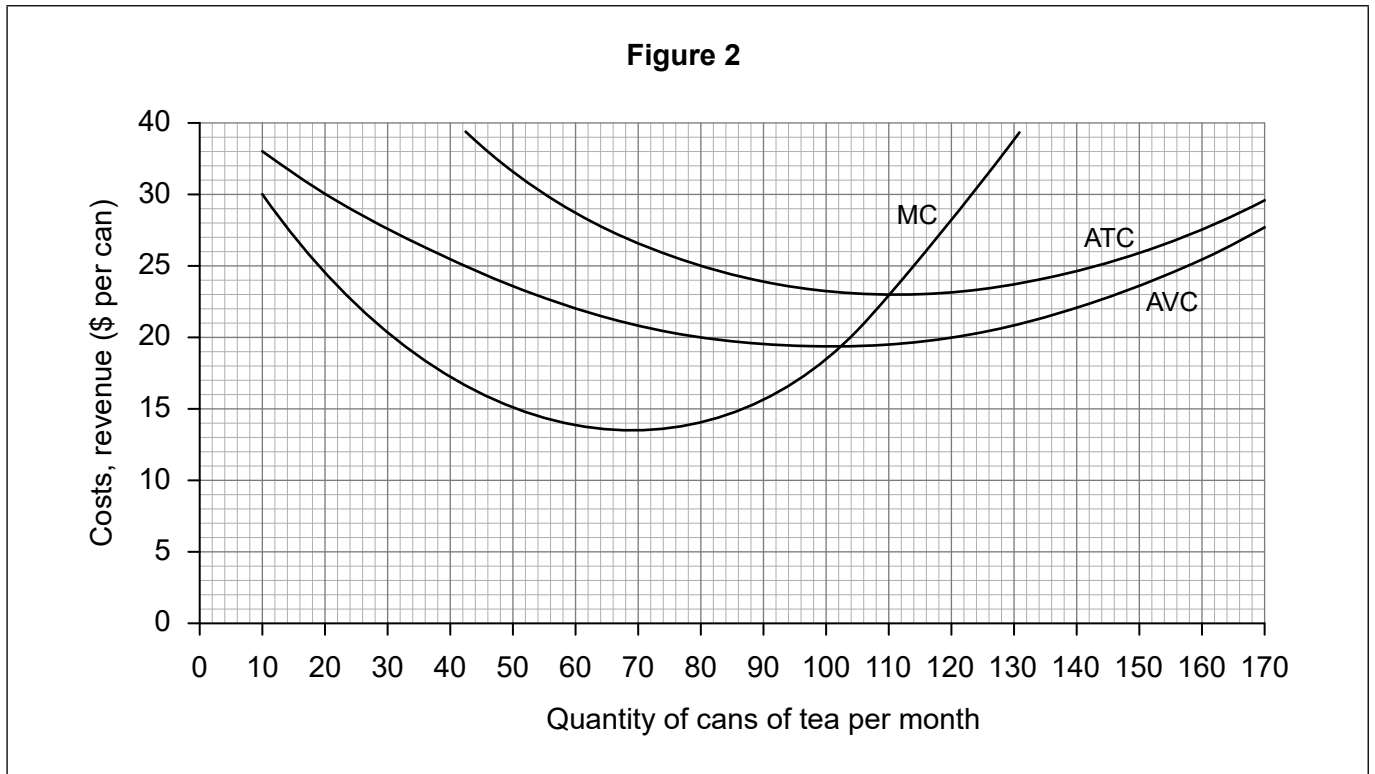
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(Question 1 continued)

Figure 2 illustrates the average total cost (ATC), average variable cost (AVC) and marginal cost (MC) at different output levels for Firm B, which produces cans of tea.

Figure 2

(b)   (i)   Using **Figure 2**, calculate the average fixed costs when 80 cans per month are
produced.   [1]

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(ii)   Using **Figure 2**, calculate the total costs when 55 cans per month are produced.   [2]

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(Question 1 continued)

    (iii)   Explain why in the short run, as output increases, marginal costs typically
            decrease and then increase.   [4]

The price of tea in the perfectly competitive tea market is presently $21 per can.

    (c)   (i)   Using this information, draw and label the average revenue curve on **Figure 2**.   [1]

           (ii)   Using **Figure 2**, identify the quantity of cans per month Firm B must produce
               in order to maximize profits.   [1]

           (iii)   Calculate the economic profit when Firm B is producing at the output level
               identified in part (c)(ii).   [2]

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(Question 1 continued)

(d)   Sometimes a firm continues to produce in the short run, even when it is making
       an economic loss. Explain why the firm might choose to do this.   [2]

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(e)   Outline why a perfectly competitive firm is a "price taker".   [2]

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(f)   Firm B and all the other firms in the tea market begin to sell their tea in distinctive
       packages and many differentiate their product with organic tea or fruit flavours.
       Explain how the demand curve faced by Firm B will change as a result.   [2]

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(Question 1 continued)

(g)   Firm B conducted a market survey and found out that the price elasticity of demand
      for its brand of tea is 0.8 among urban customers, whereas it is 1.2 among customers
      in rural areas. The sales director said "This information could help Firm B to raise its
      revenue, by trying to separate the two markets, provided that certain conditions are
      satisfied". Explain this statement.   [4]
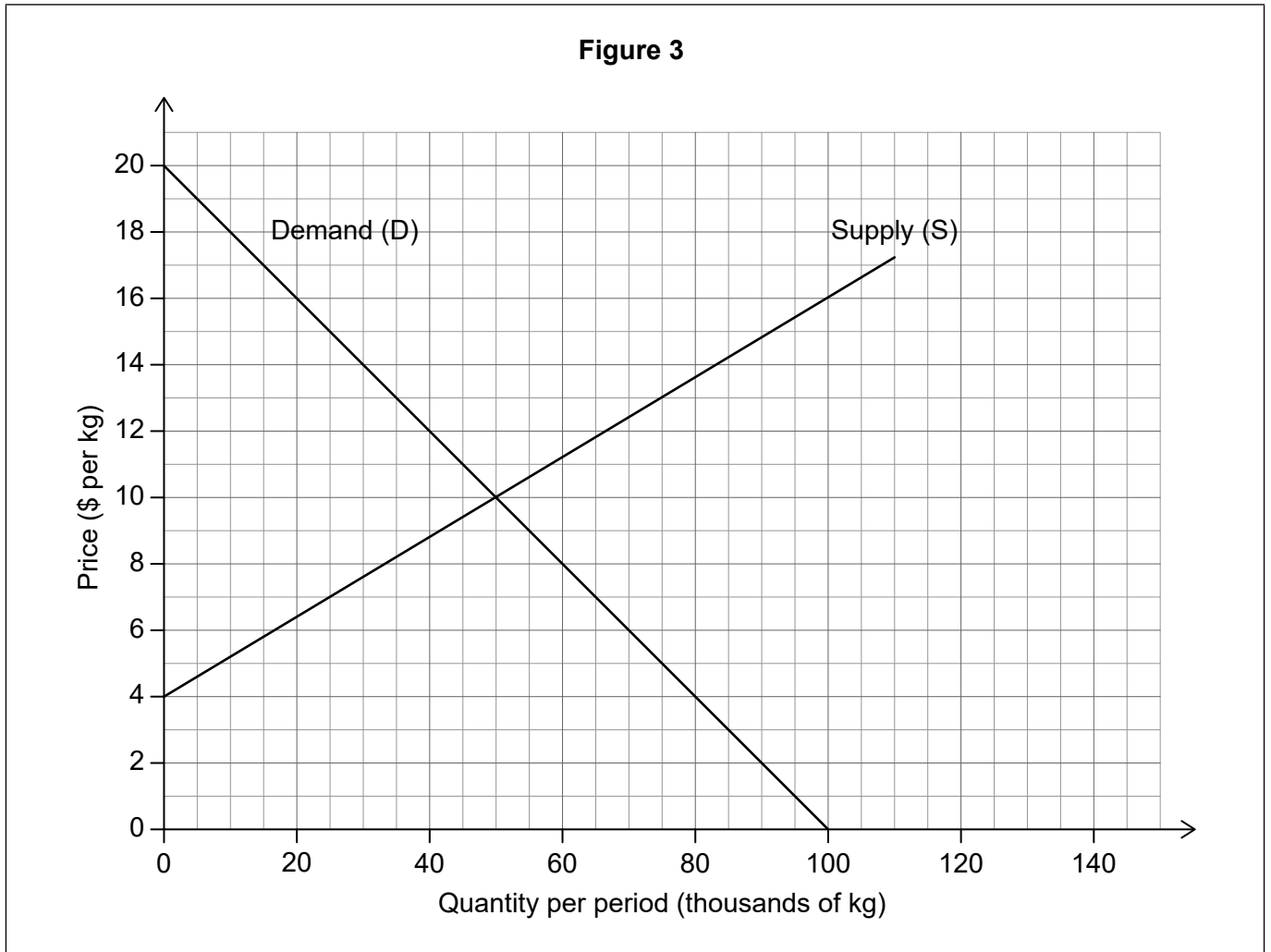
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2. **Figure 3** illustrates the market for cotton in the country of San Marcus, a small closed economy. Cotton is used as an input in the San Marcus textile industry. Quantity is in thousands of kilograms (kg).

Figure 3

(a) (i) Define the term *social (community) surplus*. [2]

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(Question 2 continued)

(ii)   Calculate the social (community) surplus in the market for cotton in San Marcus.   [2]

The Government of San Marcus decides to provide a subsidy equal to $8 per kilogram to its producers of cotton.

(b)   (i)   Draw and label the new supply curve following the granting of the subsidy to domestic cotton producers on **Figure 3**.   [2]

(ii)   Calculate the cost to the government of San Marcus of providing this subsidy to domestic cotton producers.   [2]

(iii)   Calculate the resulting change in producer surplus following the introduction of the subsidy to cotton producers in San Marcus.   [2]

(iv)   Calculate the change in the consumer surplus resulting from the subsidy.   [2]

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(Question 2 continued)

(c)   Explain **two** reasons why the government of San Marcus may have decided to grant
         a subsidy to its cotton producers.   [4]

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San Marcus now joins the World Trade Organization (WTO) and agrees to slowly liberalize trade,
becoming an open economy.

(d)   State **two** functions of the WTO.   [2]

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(Question 2 continued)

The world price for cotton is $2 per kg. The WTO permits the government of San Marcus to maintain the $8 subsidy.

    (e)   (i)   Plot and label the world cotton supply curve that San Marcus now faces on **Figure 3**.   [1]

            (ii)   With reference to your answer in part (b)(ii), calculate the change in the cost of financing the $8 per kg subsidy to the government of San Marcus following the decision to import cotton from the world market.   [2]

            (iii)   Explain one possible advantage **and** one possible disadvantage for the San Marcus economy of the decision to join the WTO and slowly liberalize trade.   [4]

3. The information provided in **Table 1** represents data for Country X in 2015.

Table 1

Item	$ billion
Imports	289
Transfer payments	253
Saving	82
Exports	234
Income from employment	1160
Taxation	396
Consumer spending	745
Investment	229
Net factor income from abroad	–111
Government spending on goods and services	437

(a) Calculate gross domestic product (GDP) for Country X in 2015. [2]

(b) Calculate gross national income (GNI) for Country X in 2015. [1]

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(Question 3 continued)

The information provided in **Table 2** relates to Country Y.

Table 2

Year	Consumer price index (CPI)	GDP deflator	GDP ($ million)
2014	100	100	4465
2015	105.35	105.11	4814
2016	109.21	108.92	5026

(c)   Calculate the rate of consumer price inflation in 2016.   [1]

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(d)   Using the GDP deflator, calculate the percentage change in real GDP between 2014
and 2015.   [2]

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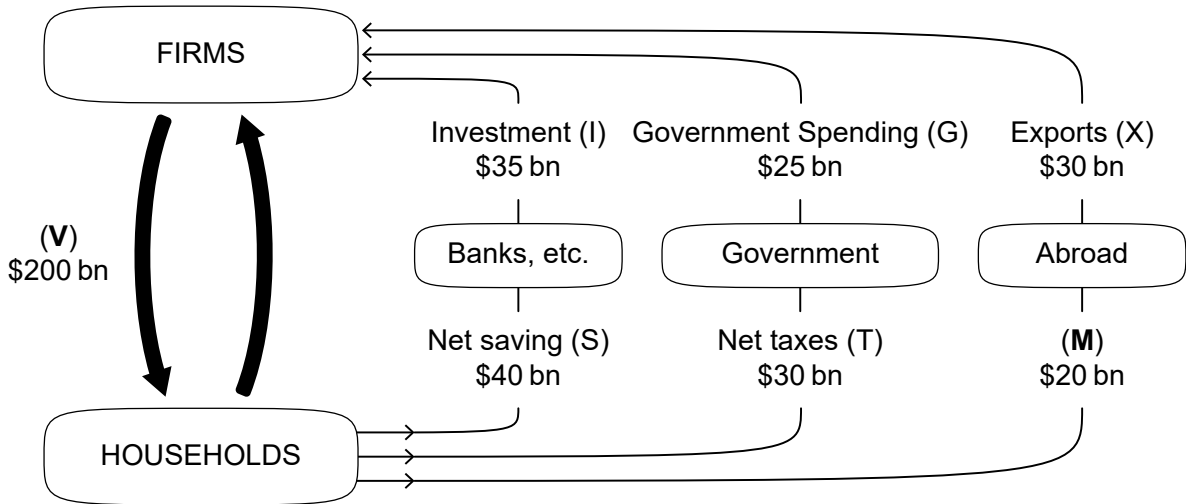
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(Question 3 continued)

Figure 4 represents the circular flow of income in Country A, with values in billions of dollars ($).

Figure 4

(e)   (i)   Identify the term represented in **Figure 4** by the letter **V**.   [1]

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       (ii)   Identify the term represented in **Figure 4** by the letter **M**.   [1]

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(f)   State the **four** factor payments which constitute the income flow in
      the circular flow of income model.   [2]

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(Question 3 continued)

(g)   Define the term *leakages*.   [2]

(h)   Determine the size of the budget surplus/deficit and state which using **Figure 4**.   [1]

The government of Country A decides to increase the level of taxation to $34 billion.

(i)   Using an AD/AS diagram, explain how this may affect the level of unemployment.   [4]

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(Question 3 continued)

Table 3 provides information on the rates of direct tax in Country A.

Table 3

Annual income ($)	Rate of direct tax
0–12 000	5 %
12 001–27 500	12 %
27 501–60 000	21.5 %
60 001+	32 %

(j)   Calculate the average tax rate for an individual who earns $64 000 per year.   [2]

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Table 4 provides information on the household distribution of income in Country A.

Table 4

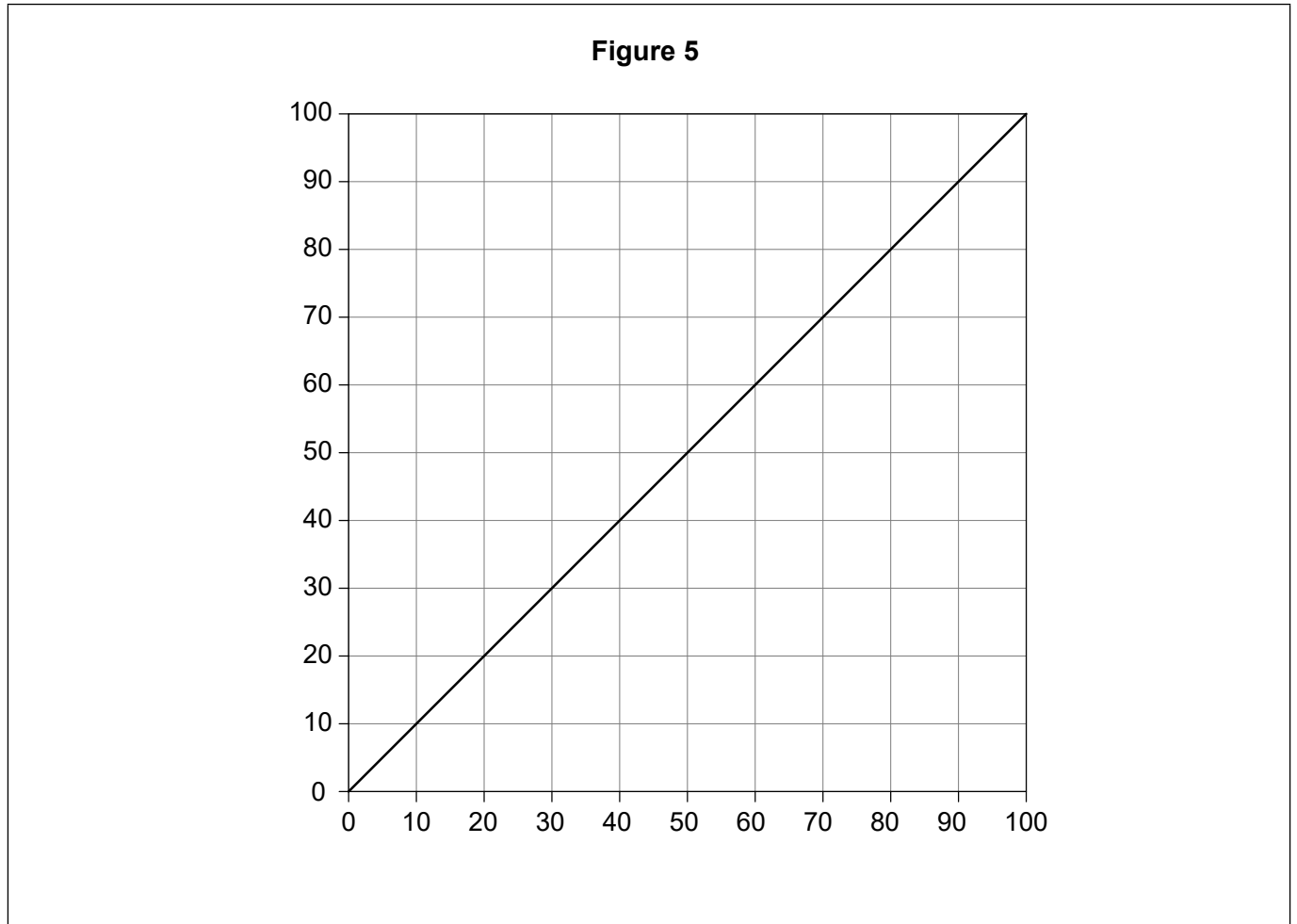| Household quintiles	Percentage of total household income earned by each quintile
Lowest 20 %	5 %
2nd lowest 20 %	10 %
3rd lowest 20 %	15 %
2nd highest 20 %	20 %
Highest 20 %	50 %

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(Question 3 continued)

    (k)   Draw and label the Lorenz curve diagram for Country A on **Figure 5**.   [2]

Figure 5

    (l)   Explain how an increase in the top rate of direct tax from 32 % to 36 % might affect
        equity and efficiency in Country A.   [4]
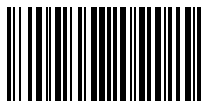
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