

Economics is an essay subject with a quantitative spine, and the calculations are where the cheapest marks are – a formula, a substitution, an answer with its unit, and one sentence saying what it means. Official schemes give the number and leave the reasoning out; these are the same problems written the way they should be written under exam conditions, with a note on where the mark actually sits.

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Elasticity, revenue and the incidence of a tax

I The price of a good rises from \$8 to \$10 and weekly quantity demanded falls from 400 to 340 units. Calculate the price elasticity of demand and explain what happens to total revenue.

$PED = -15 \div 25 = -0.6$. Demand is price INELASTIC because $0.6 < 1$ in size, so total revenue RISES – from \$3200 to \$3400.

Commentary: Percentage change in price = $(10 - 8) \div 8 \times 100 = +25\%$

Commentary: Percentage change in quantity = $(340 - 400) \div 400 \times 100 = -15\%$

Commentary: $PED = -15 \div 25 = -0.6$

Commentary: Quote the sign and then judge by SIZE: between 0 and 1 is inelastic.

Commentary: Revenue before = $8 \times 400 = \$3200$; after = $10 \times 340 = \$3400$ – the price rise more than covers the lost sales.

I Incomes rise by 10\% and demand for a good rises by 25\%. Classify the good.

$YED = +25 \div 10 = +2.5$: positive, so a normal good, and greater than 1, so income elastic – a luxury. Demand for it will fall sharply in a recession.

Commentary: $YED = \% \Delta Q_d \div \% \Delta \text{income} = 25 \div 10 = +2.5$

Commentary: The SIGN classifies normal against inferior; the SIZE classifies necessity against luxury. Both are needed for full marks.

I A specific tax of \$2 per unit is imposed and the market price rises from \$10.00 to \$11.20. Find the share of the tax borne by the consumer.

The consumer bears \$1.20 of the \$2, i.e. 60%; the producer absorbs the remaining \$0.80, i.e. 40%.

Commentary: Consumer's share = rise in price = $11.20 - 10.00 = \$1.20$

Commentary: As a percentage = $1.20 \div 2 \times 100 = 60\%$

Commentary: Producer's share = $2 - 1.20 = \$0.80$, i.e. 40%

Commentary: The consumer bears the larger share whenever demand is LESS elastic than supply – say which is which, because that is the explanation mark.

I Demand is $P = 20 - 0.5Q$ and the market price is \$10. Calculate consumer surplus.

Consumer surplus is \$100.

Commentary: At $P = 10$: $10 = 20 - 0.5Q$, so $Q = 20$

Commentary: Consumer surplus is the triangle between the demand curve and the price: $\frac{1}{2} \times \text{base} \times \text{height}$

Commentary: $= \frac{1}{2} \times 20 \times (20 - 10) = \100

Commentary: The height is the vertical intercept MINUS the price, not the price itself.

Costs, revenue and the firm

| A firm's total cost is \$480 at an output of 10 units and \$515 at 11 units. Find the marginal cost of the eleventh unit and the average cost at each output.

Marginal cost is \$35. Average cost falls from \$48.00 to \$46.82, because marginal cost is below average cost.

Commentary: $MC = \Delta TC \div \Delta Q = (515 - 480) \div 1 = \35

Commentary: $AC \text{ at } 10 = 480 \div 10 = \48.00

Commentary: $AC \text{ at } 11 = 515 \div 11 = \46.82

Commentary: The relationship is the marked point: when MC is below AC, AC is pulled down; the two are equal at the minimum of AC.

| Explain, with reference to the condition for profit maximisation, why a firm produces where $MC = MR$ and not where profit per unit is greatest.

TOTAL profit rises while each extra unit adds more to revenue than to cost, i.e. while $MR > MC$, and falls once $MC > MR$. Total profit is therefore greatest where $MC = MR$ with MC rising. Profit per unit is greatest where AC is at its minimum, which is a different output – and a firm maximises total profit, not profit per unit.

Commentary: State the rule and the second condition: MC must be RISING through MR, or the point is a loss-maximum.

Commentary: The contrast with minimum AC is the analysis mark, and it is the part most answers omit.

| A firm faces a price of \$12, average variable cost of \$9 and average total cost of \$14. Should it shut down in the short run?

No. Price exceeds AVC, so each unit still contributes \$3 towards the fixed costs, which must be paid whether it produces or not. It makes a loss of \$2 a unit either way – but shutting down would lose the whole \$5 of fixed cost per unit instead.

Commentary: Short-run shutdown point: price below AVC.

Commentary: Long-run exit point: price below ATC.

Commentary: Naming which of the two applies is what separates a 1-mark answer from full marks.

National income, prices and the multiplier

| The marginal propensity to consume is 0.8. An increase in investment of \$40 million occurs. Calculate the multiplier and the change in national income.

The multiplier is 5 and national income rises by \$200 million.

Commentary: $k = \frac{1}{1 - MPC} = \frac{1}{1 - 0.8} = \frac{1}{0.2} = 5$

Commentary: $\Delta Y = k \times \Delta J = 5 \times 40 = \200 million

Commentary: This is the SIMPLE multiplier, which assumes saving is the only withdrawal. Say so – the assumption is usually worth a mark.

I In an open economy $MPS = 0.1$, $MPT = 0.15$ and $MPM = 0.05$. Recalculate the multiplier for the same \$40 million injection.

The multiplier is 3.33 and national income rises by about \$133 million – far less, because taxation and imports leak spending out of the circular flow.

Commentary: $MPW = MPS + MPT + MPM = 0.1 + 0.15 + 0.05 = 0.3$

Commentary: $k = 1 \div 0.3 = 3.33$

Commentary: $\Delta Y = 3.33 \times 40 = \133 million

Commentary: The comparison with the simple multiplier is the evaluation: the more open and the more heavily taxed the economy, the weaker the effect of fiscal policy.

I Nominal GDP is \$560 billion and the GDP deflator is 112 (base year = 100). Find real GDP, and then the growth rate if last year's real GDP was \$500 billion.

Real GDP is \$500 billion this year. Compared with \$500 billion last year the real growth rate is 0% – all of the apparent 12% rise in nominal GDP was inflation.

Commentary: $\text{Real GDP} = \text{nominal GDP} \times \frac{100}{\text{price index}} = 560 \times \frac{100}{112} = \500 billion

Commentary: $\text{Growth} = (500 - 500) \div 500 \times 100 = 0\%$

Commentary: The point of the question is that a nominal rise is not growth. Saying so is the interpretation mark.

I Real GDP rises from \$500 billion to \$520 billion. Calculate the growth rate, and state one reason why it may overstate the rise in living standards.

Growth is 4%. It may overstate living standards because GDP takes no account of how the extra output is distributed, of the population, or of the external costs of producing it.

Commentary: $\text{Growth} = (520 - 500) \div 500 \times 100 = 4\%$

Commentary: Divide by the OLD value.

Commentary: If population grew faster than 4%, GDP PER HEAD has fallen – naming per capita income is the strongest version of this point.

I A country has 2.4 million people unemployed and a labour force of 32 million. Calculate the unemployment rate and state one weakness of this measure.

The unemployment rate is 7.5%. It excludes discouraged workers who have stopped looking and are therefore outside the labour force, so it understates the true level of unused labour.

Commentary: $\text{Rate} = 2.4 \div 32 \times 100 = 7.5\%$

Commentary: The denominator is the LABOUR FORCE, not the population – that distinction is itself a mark.

Trade, exchange rates and index numbers

I A country's export price index is 110 and its import price index is 104, both relative to a base of 100. Calculate the terms of trade and say what has happened.

Terms of trade = 105.8. They have improved: a given volume of exports now buys more imports than in the base year.

Commentary: $\text{Terms of trade} = \frac{\text{index of export prices}}{\text{index of import prices}} \times 100 = \frac{110}{104} \times 100 = 105.8$

Commentary: Above 100 is an improvement, below 100 a deterioration.

Commentary: An improvement is NOT automatically good: if it came from a rise in export prices, export volumes may fall and the current account worsen. That evaluation is where the higher marks are.

I A price rises from \$40 in the base year to \$46. Express this as an index number and state the inflation rate over the period.

The index is 115, i.e. a 15% rise.

Commentary: $\text{Index} = \frac{\text{current price}}{\text{base price}} \times 100 = \frac{46}{40} \times 100 = 115$

Commentary: An index of 115 means 15% above the base, because the base is always 100.

I A commercial bank receives a new deposit of \$10 million and the required reserve ratio is 20%. Calculate the maximum increase in bank deposits.

The credit multiplier is 5, so deposits can rise by up to \$50 million.

Commentary: $\text{Credit multiplier} = 1 \div \text{reserve ratio} = 1 \div 0.2 = 5$

Commentary: $\text{Maximum increase} = 5 \times 10 = \50 million

Commentary: It is a MAXIMUM: it assumes banks lend out everything they may and that none of the money leaks into cash holdings. Stating that assumption is the evaluation mark.

What the examiner is actually marking

State the formula before substituting. A method mark survives an arithmetic slip; a bare wrong number does not.

Quote elasticities with their sign and then judge them by size. “−0.6, so inelastic” is two marks in four words.

Finish with one sentence of economic meaning. The number is the knowledge mark; the sentence is the application mark, and it is usually worth more.

Name the assumption whenever you use a multiplier, a shutdown rule or a credit multiplier. Every one of them is built on conditions, and the evaluation marks live there.

Divide by the ORIGINAL value in every percentage change, and by the LABOUR FORCE in an unemployment rate. Wrong denominators account for most of the lost calculation marks in this subject.