

Quantitative Skills for A Level AQA Economics

Practice Activities Workbook

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**POD
6118b**

SKILL 1: CALCULATE, USE AND UNDERSTAND

1. Spain has a savings ratio of 0.15. What is this in percentage terms?

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2. The table below shows some examples of savings ratios from three different countries.

Country	Savings Ratio	
	2010	2011
France	0.2	
Germany	0.14	
Switzerland	0.39	

Source: ONS

Assume the average person in each country earns £30,000 a year in 2010 and 2011.

- a) How much of their income would the average person in the UK have saved in 2010?

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- b) How much more would the average worker from Switzerland save compared to the average worker from France in both 2010 and 2011 together? Show your working.

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SKILL 2: CALCULATE, USE AND UNDERSTAND PERCENTAGE CHANGES

1. Suppose that a firm has 890 workers 340 of which have a degree. What percentage of workers have a degree to university? Give your answer to two decimal places.

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2. In the UK, 7% of 16–24 year olds are considered unemployed. What is the percentage of unemployment? Give your answer to two decimal places.

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3. The total number of unemployed 16–24-year-olds rises from 498,000 to 520,000. What is the percentage increase in this? Show your working.

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4. Below is a table showing unemployment rates in the UK and in Spain in 2008

Country	Unemployment rate %	
	2008	2012
UK	5.1	8.2
Spain	9	23.2

Source: Eurostat

- a) How many percentage points higher was unemployment in Spain in 2012 than in the same year?

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- b) Unemployment rates in the UK decreased from 8.2% in 2012 to 6.9% in 2013. What does this represent?

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SKILL 3: UNDERSTAND AND USE THE TERMS MEAN AND MEDIAN

7 7 8 8 9 10 12 12 13

1. The numbers above are hourly wages for the employees in a small firm.

a) What is the mean wage? Show your working.

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b) What is the median wage? Show how you arrive at your answer.

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Suppose that the government is considering introducing a new law to limit the pay that can be received by the boss of a company. The boss of this company (whose wage is not in the list above) will have a wage equal to the average wage.

2. Would he prefer the average used to be the mean or median wage? Please explain your answer in each case.

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3. If the aim of the government was to reduce inequality which option would be best?

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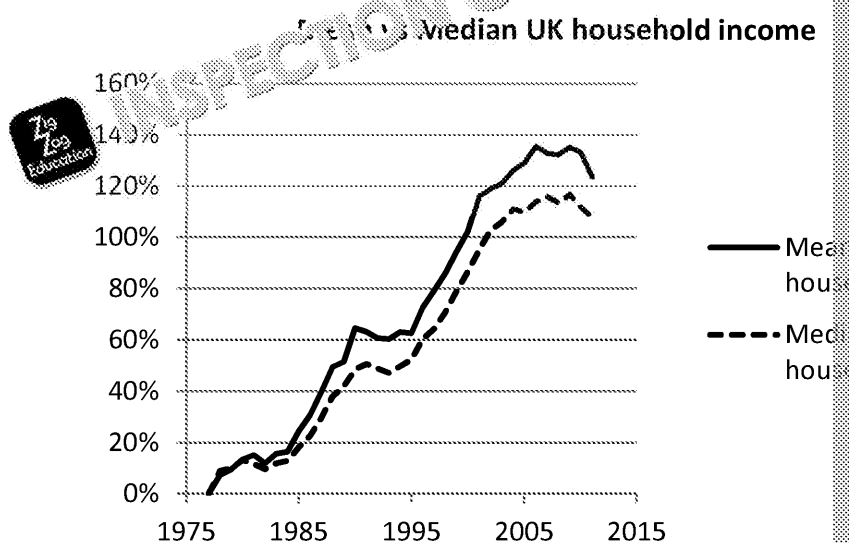
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Source: <http://www.oecd.org>

4. Above is a chart showing the change in mean disposable income and median household income since 1977. What can you interpret from the graph?

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SKILL 4: UNDERSTAND AND USE RELEVANT Q

40	22	41	37	37	35	20
47	23	37	24	45	25	39

1. Sort the numbers above into four quartiles.

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2. What is the median value?

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3. What is the interquartile range?

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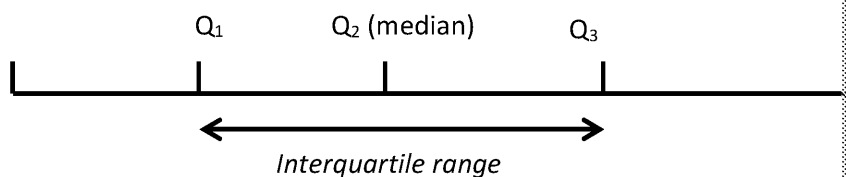
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4. What can you interpret from this diagram of quartiles? Think about the distribution being separated into quartiles.

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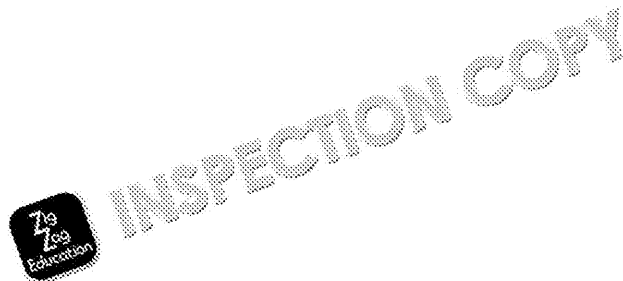
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SKILL 5: CONSTRUCT AND INTERPRET A RANGE OF STANDARDS

- Fill in the table below by **first** increasing revenue by 50%, **then** adding £2 to 'Revenue₂' column.

Passengers	Revenue	1. 50% increase	2. P
1	10	15	
2	20		
3	30		
4	40		
5	50		

- Now use the new values to draw a new line showing Revenue₂ on the chart.



- What is the gradient of the new line? Is this a shift or a rotation?

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- | Year | Goods in the basket | | | Price |
|------|---------------------|-------|--------|-------|
| | Good | Price | Weight | |
| 2013 | Good X | £5.50 | 0.5 | £3 |
| | Good Y | £0.50 | 0.1 | |
| | Good Z | £1.20 | 0.4 | |
| 2014 | Good X | £5.50 | 0.5 | £3 |
| | Good Y | £0.50 | 0.1 | |
| | Good Z | £2.20 | 0.4 | |
| 2015 | Good X | £5.60 | 0.5 | £3 |
| | Good Y | £0.80 | 0.1 | |
| | Good Z | £5.50 | 0.4 | |

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4. In question 3, the price of Good X decreases in 2014 – but the index goes up

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SKILL 7: CALCULATE COST, REVENUE AND PROFIT (A)

1. A firm records total revenue of £2,000 from selling 40 units. What price were the units sold at?

Output (units)	Total Cost (£)
1	5.50
2	10.00
3	14.00
4	16.00
5	17.00

2. a) Look at the table above. What is the average cost of 5 units of output?



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- b) When the firm is producing 5 units of output, the average fixed cost is £..... and the average variable cost is £.....

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- c) The firm sells 5 units for £20. What is its total revenue? What is its profit?

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- d) What is the average revenue when 5 units are sold for £20?



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3. a) A firm produces 100 units at an average cost of £10. Average fixed cost variable costs?

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- b) Following an increase in raw material prices, the average variable cost new total average cost?

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SKILL 8: CALCULATE COST, REVENUE AND PROFIT

1. Fill in the table below by calculating the marginal cost of producing each extra unit.

Units of output	Total Cost	Marginal Cost
0	11	
1	21	
2	30	
3		
4	44	
5	55	

2. a) Fill in the blanks in the table below. Show your working where possible.

Total Output	Total Revenue	MR	Total Cost	
1	100		70	
2	200		140	
3	300		200	
4	400		300	
5	500		510	

- b) How many units would the firm produce to maximise profits?

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SKILL 9: MAKE CALCULATIONS TO CONVERT FROM MONETARY

1. a) The nominal GDP of Spain rises from \$1,010bn in 2013 to \$1,110bn in 2014. What is the percentage increase in nominal terms?

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- b) The price index for 2014 with respect to 2013 is 103. What was the new

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- c) What was the percentage increase in *real* GDP?

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2. The pound to dollar exchange rate is 1.57. What is \$1,110bn in pounds?

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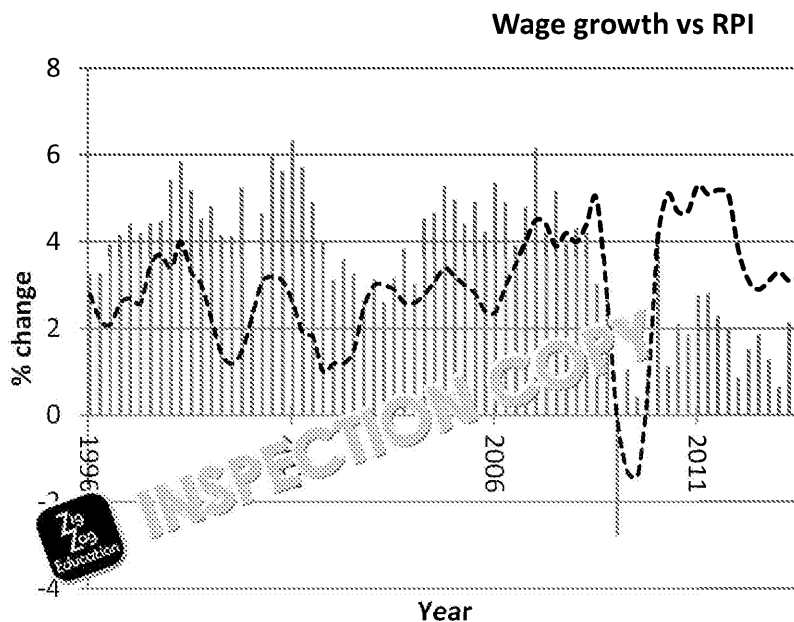
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3. What can you interpret from the graph below?



Source: <http://www.irs.gov>

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SKILL 10: MAKE CALCULATIONS OF ELASTICITY AND IN

1. a) The amount by which railway operators can increase fares is linked to the price of a rail season ticket from Woking to London rose from £3,704 to £4,000. Suppose that the number of season ticket holders fell from 15,000 to 14,000. Calculate the elasticity of demand, showing your working.

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- b) Is demand for commuter rail tickets elastic or inelastic? Can you think of any factors that might affect the elasticity of demand for commuter rail tickets?

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- c) Draw a diagram to show the PED for these season tickets graphically.

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2. This question is about income elasticity of demand (YED). Jasper goes to the cinema 10 times a year. When his income increases by 7.5% and he goes to the cinema 14 times a year. What is the YED for cinema visits?
Show your working.

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3. a) Imagine that an oil shock causes petrol prices to rise by 20%. Electric car sales fall from 360,000 to 300,000. What is the cross price elasticity of demand (XED)? Show your work.

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- b)** Draw a quick sketch of the relationship between the sales of electric cars (Y-axis) and petrol (X-axis).

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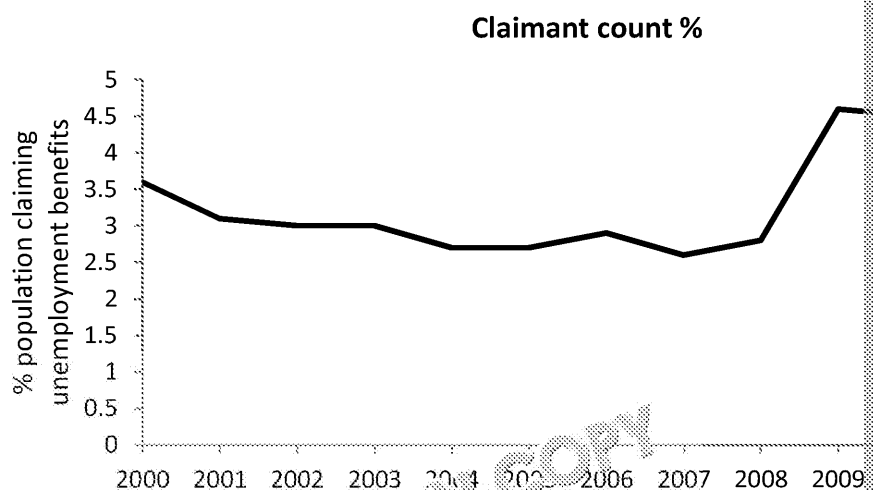
SKILL 11: INTERPRET, APPLY AND ANALYSE INFORMATION GRAPHICAL AND NUMERICAL FORM

Questions in this section will be based on the following information:

Graph 1



Graph 2



Extract 1

'In the six years since the global economic crisis, standard jobs were destroyed while non-standard jobs continued to increase...

Non-standard workers are worse off in terms of many aspects of job quality. They have less job security. In addition, those on temporary contracts have more job strain and have less job satisfaction. Earnings levels are also lower...

<http://www.theguardian.com/business/2015/may/21/temporary-and-part-time-jobs>

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1. Describe the main trends shown in Graph 1. Pay attention to the separate Y

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2. One measure of unemployment is the *claimant count* which considers what claiming Jobseeker's Allowance. The claimant count between 2000 and 2010. What do you interpret from this graph?

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3. With reference to the second paragraph of Extract 1, explain how a shift to P_1 have an impact on long-term growth. Illustrate your answer by drawing a PR

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