

Quantitative Skills for AS and A Level OCR Economics

Practice Activities Workbook

zigzageducation.co.uk

**POD
6216b**

SKILL 1: CALCULATE, USE AND UNDERSTAND

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

.....

.....

.....

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

Country	Savings Ratio	
	2010	2011
France	0.2	0.25
Italy	0.14	0.15
Switzerland	0.39	0.40

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?

.....

.....

.....

.....

.....

.....

- 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.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

INSPECTION COPY

COPYRIGHT
PROTECTED



3. The government decides to spend £600m on an infrastructure project. MPV equilibrium output increase following the initial investment?

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



INSPECTION COPY



INSPECTION COPY

INSPECTION COPY

**COPYRIGHT
PROTECTED**



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? Give your answer to two decimal places.

.....

.....

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

.....

INSPECTION COPY

COPYRIGHT
PROTECTED



4. Below is a table showing unemployment rates in the UK and in Spain in 2008 and 2012.

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?

.....

.....

.....

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

.....

.....

.....

.....

.....

.....

INSPECTION COPY

INSPECTION COPY

COPYRIGHT
PROTECTED



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.

.....

.....

.....

.....

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

.....

.....

.....

Suppose that the government is considering introducing a new law to limit the pay that employees can receive. 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.

.....

.....

.....

.....

.....

.....

.....

.....

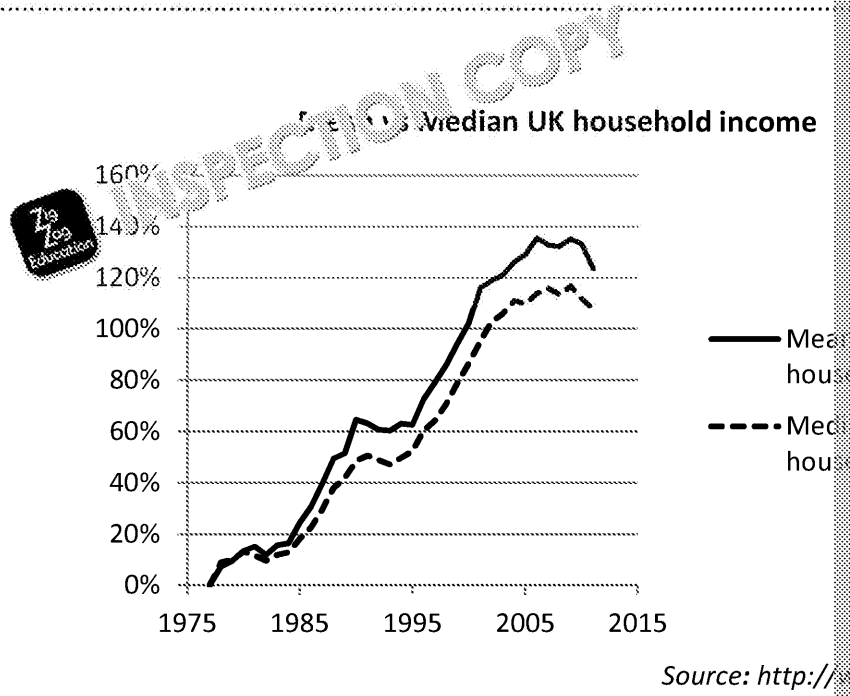
INSPECTION COPY

COPYRIGHT
PROTECTED



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

.....
.....
.....
.....
.....
.....



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

.....
.....
.....
.....
.....
.....

**COPYRIGHT
PROTECTED**



SKILL 4: UNDERSTAND AND USE RELEVANT C

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

1. Sort the numbers above into four quartiles.

.....

.....

.....

.....

.....

.....

.....

.....

.....

2. What is the median value?

.....

.....

.....

3. What is the interquartile range?

.....

.....

.....

.....

.....

.....

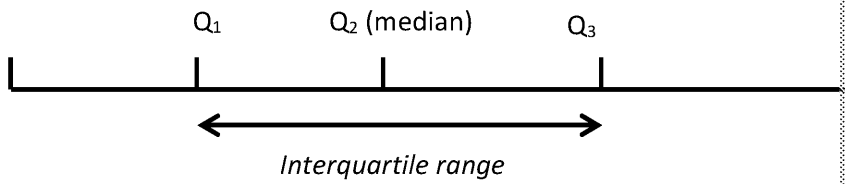
INSPECTION COPY

INSPECTION COPY

INSPECTION COPY

**COPYRIGHT
PROTECTED**





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

.....

.....

.....

.....

.....

.....

.....

.....



INSPECTION COPY



INSPECTION COPY

INSPECTION COPY

**COPYRIGHT
PROTECTED**



SKILL 5: CONSTRUCT AND INTERPRET A RANGE OF STAND

1. 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		

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



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

.....

.....

.....

INSPECTION COPY

**COPYRIGHT
PROTECTED**



SKILL 6: CALCULATE AND INTERPRET INDEX

1. Fill in the table below. Show as much of your working as possible.

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	
	Good Y	£0.50	0.1	
	Good Z	£2.20	0.4	
2015	Good X	£5.60	0.5	
	Good Y	£0.80	0.1	
	Good Z	£5.50	0.4	

2. Suppose that the Office for National Statistics (ONS) decides to adjust the weights in the basket. Why would they do this?

.....

.....

.....

.....

.....

.....

.....

3. In 2014, Good X had its weight increased to 0.7 and good Z had its weight decreased to 0.3. What would the price level and index now be for that year, 2014? The price value for 2013 remains the same. Show your working.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

INSPECTION COPY

**COPYRIGHT
PROTECTED**



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

.....

.....

.....

.....

.....

.....



INSPECTION COPY



INSPECTION COPY

INSPECTION COPY

**COPYRIGHT
PROTECTED**



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

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



.....

.....

.....

- b) When the firm is producing 5 units of output, the average fixed cost is £10. What is the average variable cost?

.....

.....

.....

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

.....

.....

.....

.....

.....

.....

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



.....

.....

.....

INSPECTION COPY

**COPYRIGHT
PROTECTED**



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

.....

.....

.....

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

.....

.....

.....

.....

.....



INSPECTION COPY



INSPECTION COPY

INSPECTION COPY

**COPYRIGHT
PROTECTED**



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		
	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?

.....

.....

.....

.....

.....

.....

INSPECTION COPY

**COPYRIGHT
PROTECTED**



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?

.....

.....

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

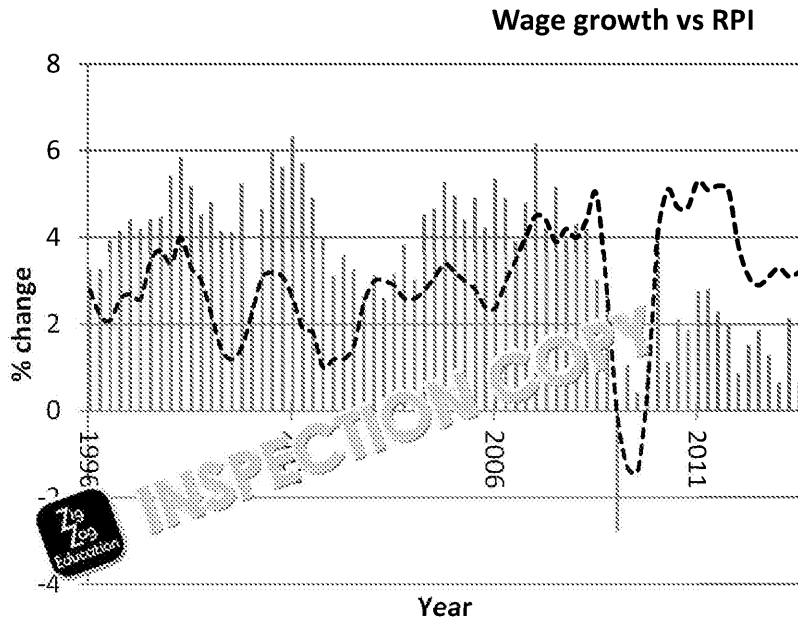
.....

INSPECTION COPY

COPYRIGHT
PROTECTED



3. What can you interpret from the graph below?



Source: <http://>



INSPECTION COPY

INSPECTION COPY

COPYRIGHT
PROTECTED



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 12,000. Calculate the price elasticity of demand, showing your working.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



INSPECTION COPY

- b) Is demand for commuter rail tickets elastic or inelastic? Can you think of any reasons for your answer?

.....

.....

.....

.....

.....

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

.....

.....

.....

.....



INSPECTION COPY

INSPECTION COPY

COPYRIGHT
PROTECTED



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

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



INSPECTION COPY

- 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 working.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

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



INSPECTION COPY

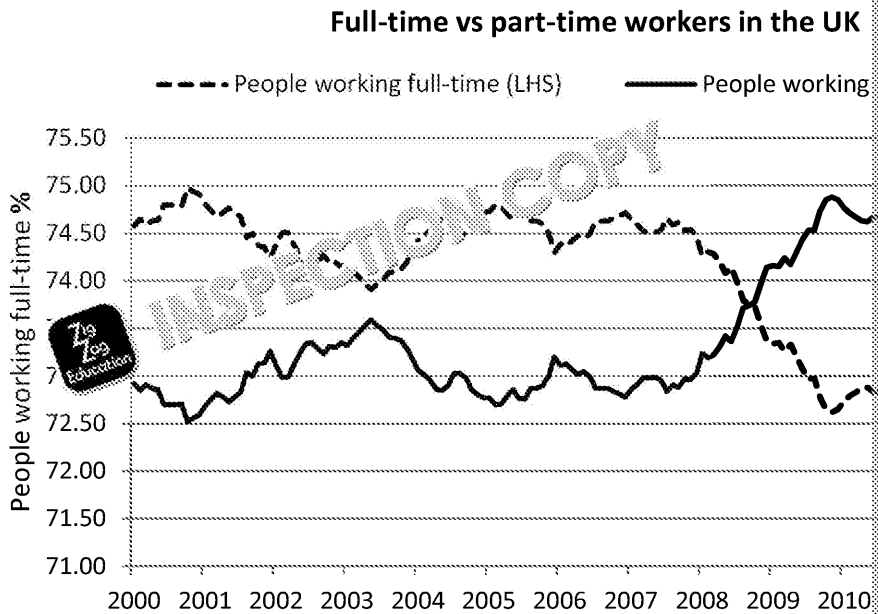
**COPYRIGHT
PROTECTED**



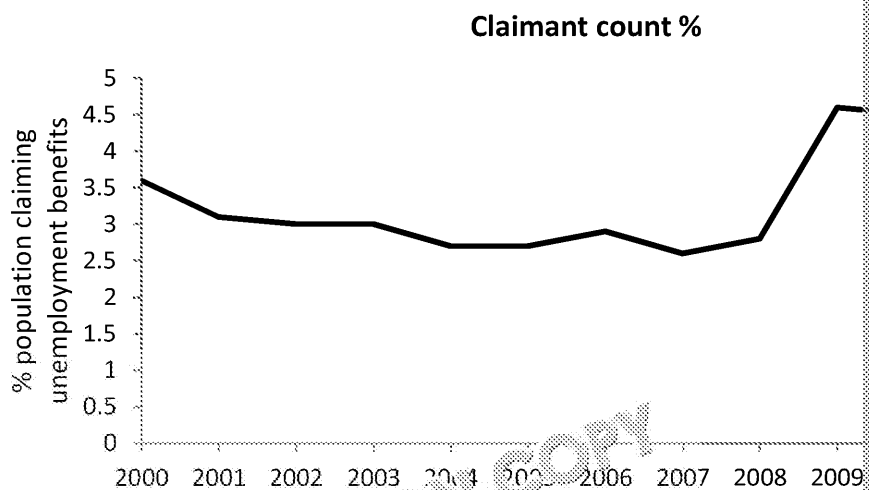
SKILL 11: INTERPRET, APPLY AND ANALYSE INFORMATION GRAPHICAL AND NUMERICAL FORM

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>

INSPECTION COPY

**COPYRIGHT
PROTECTED**



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

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



INSPECTION COPY

2. One measure of unemployment is the *claimant count* which considers what claiming Jobseeker's Allowance. The claimant count between 2000 and 2011 you interpret from this graph?

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



INSPECTION COPY

INSPECTION COPY

COPYRIGHT
PROTECTED



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

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



INSPECTION COPY



INSPECTION COPY

INSPECTION COPY

**COPYRIGHT
PROTECTED**

