



## GCSE Foundation/Higher 05

*Number*

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Questions



88 minutes



78 marks

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*Percentages*

**Q1.** A new road is planned.  
There are two possible routes, A and B.

200 people are asked which route they prefer.

- (a) Name a suitable data collection method to use.

Answer .....

(1)

- (b) Write a suitable question with a response section.

Question .....

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Response Section

(2)

- (c) 27% of the 200 people prefer route A.

How many people is this?

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Answer .....

(2)

(Total 5 marks)

**Q2.** Each day 147 trains leave Lea Road station.  
 One day, most trains are on time (0 minutes late).  
 19 trains are late.

- (a) What percentage of trains are late?  
 Give your answer to 1 decimal place.

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Answer ..... %

(3)

- (b) The station manager records the number of minutes late for each of the 19 trains.

6	11	1	21	8	10	17	4	35	22
2	3	41	8	23	7	16	28	19	

- (i) Draw an ordered stem-and-leaf diagram to show the data for the late trains.  
 Complete the key.

Key: ..... | ..... represents ..... minutes late

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(4)

- (ii) For the 19 late trains, write down the modal number of minutes late.

Answer ..... minutes

(1)

- (iii) Write down the modal number of minutes late for all 147 trains.

Answer ..... minutes

(1)

- (c) The station manager says,  
 “The late times are all one minute less than I recorded.  
 For example, the train I recorded as 6 minutes late was actually only 5 minutes late.”

Which modal number of minutes late changes?  
 Tick a box.

☐ The 19 late trains

☐ All 147 trains

☐ Both

☐ Neither

Give a reason for your answer.

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(2)  
 (Total 11 marks)

- Q3.** A train ticket costs £23.50  
 The price increases by 6%.  
 Felix has £100.

Can Felix buy four tickets at the new price?

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(Total 4 marks)

**Q4.** Liz is buying a new car and selling her old car.

Here are three offers for the same model of new car.

**Offer 1**  
New car £10 599  
If old car given to garage  
£3375 off

**Offer 2**  
New car £11 100  
If old car given to garage  
 $\frac{1}{3}$  off

**Offer 3**  
New car £9600  
If old car given to garage  
25% off

Which offer is best?  
You **must** show your working.

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Answer .....

**(Total 5 marks)**

- Q5.** In May, a coat costs £64.  
In June, the May price is rounded to the nearest £10.  
In July, the June price is reduced by 20%.

Ian has £50.

Does he have enough money to buy the coat in July?

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**(Total 3 marks)**

- Q6.** The rate of VAT was reduced in December 2008 from  $17\frac{1}{2}\%$  to 15%.



**For sale**  
**Lawnmower £140 + VAT**

Work out the difference in price of a lawnmower due to the reduction in VAT.

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Answer £ .....

**(Total 3 marks)**

- Q7.** (a) Travelling 10 000 kilometres costs £800 for petrol.

How much does it cost to travel 12 500 kilometres?

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Answer £ .....

**(1)**

- (b) Last year Mr Taylor travelled 15 000 km in his car and spent £1200 on petrol.  
This year he expects to travel 20 000 km.  
He estimates that the price of petrol has increased by 10% on what it was last year.

How much should Mr Taylor expect to pay for petrol this year?

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Answer £ .....

(4)  
(Total 5 marks)

- Q8.** Flying lessons cost £105 each.  
Yulia has £2600.  
She wants to buy 30 flying lessons.

What percentage of the total cost does Yulia have?  
Give your answer to the nearest whole number.

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Answer .....%

(Total 4 marks)

- Q9.** The usual cost of hiring a holiday cottage is £460.  
In July the cost increases to £700.

Calculate the percentage increase in the cost.

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Answer .....%

(Total 3 marks)

- Q10.** Jack and Jill want to buy some towels.  
A store displays the following signs.

**January Sales**  
*All towels 60% off*  
Normally ~~£10~~  
January sale price £4



**Today Only**  
**EXTRA**  
**25% off the**  
**January sale price**

That is 85%  
off the  
original price



**Jack**

No, it is only 70%  
off the  
original price



**Jill**



Who is correct, Jack or Jill?  
Explain your answer fully.

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(Total 2 marks)

**Q11.** Alex and Ben share £520 in the ratio 1:3

(a) How much does Ben receive?

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Answer £ .....

(2)

(b) What percentage of the £520 does Ben receive?

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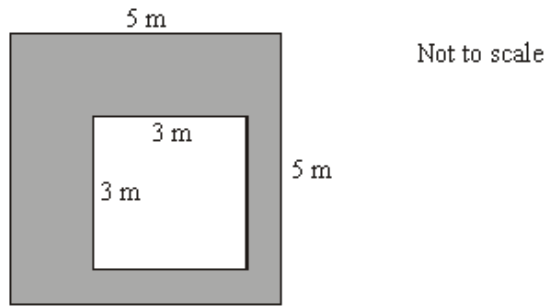
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Answer ..... %

(2)

(Total 4 marks)

**Q12.** What percentage of this shape is shaded?



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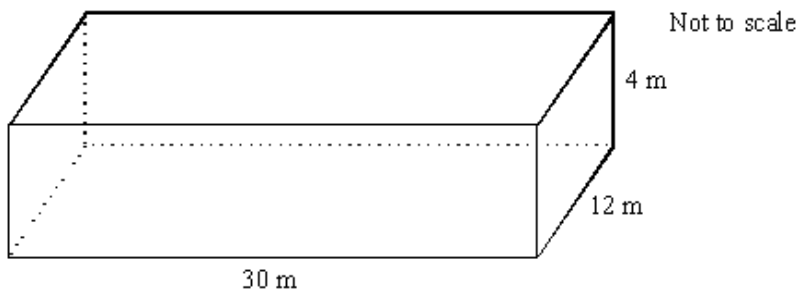
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Answer ..... %

**(Total 4 marks)**

**Q13.** A school hall is in the shape of a cuboid.



- (a) The school hall is 30 m long, 12 m wide and 4 m high.  
Calculate the volume of the hall.

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Answer ..... m<sup>3</sup>

**(2)**

- (b) The school buys **ten** 5 litre tins of paint to paint the hall.  
 The area to be painted is  $279 \text{ m}^2$ .  
 Each tin covers  $30 \text{ m}^2$ .  
 Calculate the percentage of paint used.

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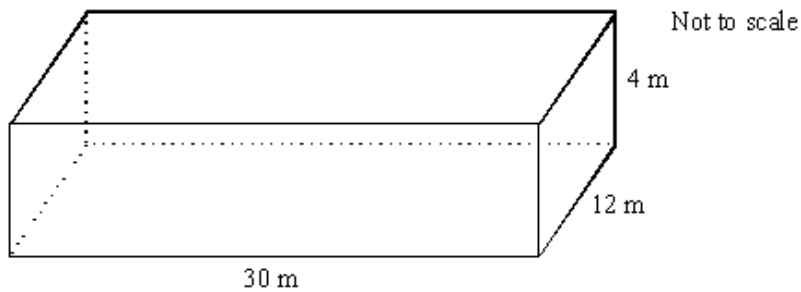
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Answer ..... %

(3)  
 (Total 5 marks)

- Q14.** A school hall is in the shape of a cuboid.



- (a) The school hall is 30 m long, 12 m wide and 4 m high.
- (i) Calculate the volume of the hall.

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Answer .....  $\text{m}^3$

(2)

- (ii) Calculate the total area of the **four walls** of the hall.

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Answer ..... m<sup>2</sup>

(3)

- (b) The school buys **ten** 5 litre tins of paint to paint the hall.

The area to be painted is 279 m<sup>2</sup>.

Each tin covers 30 m<sup>2</sup>.

Calculate the percentage of paint used.

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Answer ..... %

(3)

(Total 8 marks)

**Q15.** A single room in a hotel in France costs 385 euros for one week.

- (a) The cost of a single room increases by 12% when breakfast is included.

How many euros will it cost for a single room for one week when breakfast is included?

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Answer ..... euros

(3)

- (b) Sunil drives 164 kilometres to the hotel.

His journey takes  $2\frac{1}{2}$  hours.

Work out his average speed.

Give your answer in kilometres per hour.

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Answer ..... kilometres per hour

(2)  
(Total 5 marks)

- Q16.** Simon uses this method to work out  $87\frac{1}{2}$  % of 240.

$$\begin{array}{l} 50 \% \text{ of } 240 = 120 \\ 25 \% \text{ of } 240 = 60 \end{array}$$

$$\begin{array}{l} 12\frac{1}{2} \% \text{ of } 240 = 30 \\ \hline \end{array}$$

$$\begin{array}{l} \text{Adding} \quad 87\frac{1}{2} \% \text{ of } 240 = 210 \\ \hline \end{array}$$

- (a) Use Simon's method to work out  $87\frac{1}{2}$  % of 96.  
You **must** show your working.

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Answer .....

(2)

- (b) Pete says that he can work out  $93\frac{3}{4}$  % of 240 by using Simon's method with one extra step.

Explain how Pete can do this.

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(2)  
(Total 4 marks)

- Q17.** People in the country of Brownland have to pay income tax on the money they earn as shown.

Earnings (£)	Tax to pay
0 – 5000	NIL
Over 5000	20 % on all earnings over £5000

Examples	
Earnings (£)	Tax to pay
4000	NIL
13 000	20 % of £8000

Lynn earns £28 000.

Work out the amount of tax that Lynn pays.

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Answer £ .....

(Total 3 marks)

