

8300

GCSE MATHEMATICS

Foundation and Higher tier – Questions by Topic

Number

Finding percentages of amounts without a calculator

v1.0

Name _____

Materials

For this paper you must have:

- Mathematical instruments
- You must not use a calculator



Information

- The marks for questions are shown in brackets

Advice

- In all calculations, show clearly how you work out your answer

Questions 1 to 22 are **foundation** tier only

Q1.

Work out 51% of 400

(Total 2 marks)

Q2.

Work out 80% of 300

(Total 2 marks)

Q3.

(a) Work out one-quarter of 240.

(1)

(b) Work out 10% of 390.

(1)

(Total 2 marks)

Q4.

Work out 35% of 1200

(Total 3 marks)

Q5.

(a) What is 70 out of 200 as a percentage?

(1)

(b) Work out 0.5% of 920

(2)

(Total 3 marks)

Q6.

What is 150% of 36 ?

Circle your answer.

18

24

54

186

(Total 1 mark)

Q7.

(a) Work out 60% of 35

(2)

(b) Work out $\frac{4}{5}$ of 150

(2)

(Total 4 marks)

Q8.

Work out 20% of 14 000

(Total 2 marks)

Q9.

Work out 65% of 300

(Total 3 marks)

Q10.

Work out 110% of 80

(Total 2 marks)

Q11.

- (a) Laura wants to work out 3% of 1700
Her method is 1700×0.3
Is her method correct? Tick a box.

☐

Yes

☐

No

Give a reason for your answer.

(1)

- (b) Laura wants to work out $\frac{30}{29}$ of 60
Her answer is 58
Is her method correct? Tick a box.

☐

Yes

☐

No

Give a reason for your answer.

(1)

(Total 2 marks)

Q12.

Work out 150% of 36

(Total 2 marks)

Q13.

Shona has 14 dresses.

50% of these dresses are red.

She gives 5 of her red dresses to a charity shop.

She buys 1 new red dress.

What percentage of the dresses she has now are red?

(Total 4 marks)

Q14.



The multipack costs 10% **less than** 6 single bags.
Work out the cost of the multipack.

(Total 4 marks)

Q15.

A ball is dropped from a height of 50 metres.
After each bounce, the ball reaches 20% of its previous height.
How high does it reach after the second bounce?

(Total 2 marks)

Q16.

Sam wants to buy a camera for £345
He has already saved £96
Each week
 his pay is £80
 he saves 30% of this pay.
How many **more** weeks must he save?

(Total 4 marks)

Q17.

600 people visit a cinema.
 $\frac{1}{4}$ go to screen 1.
 40% go to screen 2.
 The rest go to screen 3.
How many people go to screen 3?

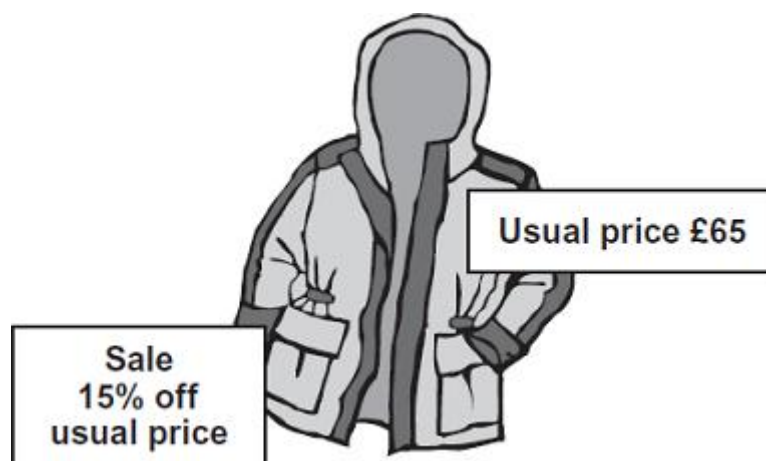
(Total 5 marks)

Q18.

Shabir buys 30 bottles of lemonade for a party.
He is given 20% discount off the total price.
One bottle costs 80p **before** the discount.
How much does he pay?

(Total 4 marks)

Q19.



Work out the sale price.

(Total 3 marks)

Q20.

Last season a football club sold 4000 season tickets at £250 each.

This season the season ticket price is reduced by 20% to £200

If the club sell 20% **more** tickets, will the amount of money they receive increase, decrease or stay the same? You **must** show your working

(Total 5 marks)

Q21.

Here are three offers for a computer.

Tablet World
Usual price £170
20% off

IT Supplies
Usual price £180
 $\frac{1}{4}$ off

PC Heaven
Special offer
Pay £23 each month
for 6 months

Which offer is the cheapest? You **must** show your working.

(Total 6 marks)

Q22.

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?

(Total 3 marks)

Questions 23 to 26 are **higher** tier only

Q23.

Circle the calculation that increases 400 by 7%

400×0.07

400×0.7

400×1.07

400×1.7

(Total 1 mark)

Q24.

Circle the calculation that decreases 250 by 15%

$250 \div 1.15$

250×0.15

250×0.85

$250 \div 0.85$

(Total 1 mark)

Q25.

Increase 6800 by 12%.

(Total 3 marks)

Q26.

The price of a book is £4

In a sale the price is reduced by 30%

Work out the sale price.

(Total 3 marks)

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Q1.

Increase 200 by 17%

(Total 2 marks)

Q2.

Work out 258% of 6300

(Total 2 marks)

Q3.

Which statement is true?
Circle your answer.

- 10% of 50 = 50% of 20
- 10% of 10 = 20% of 20
- 10% of 20 = 20% of 10
- 10% of 40 = 25% of 100

(Total 1 mark)

Q4.

Work out 10% of 170

(Total 1 mark)

Q5.

(a) Work out 70% of £986.

(2)

(b) Circle the calculations that have the same answer as 57% of 372.

- A 58% of 371
- B 5.7% of 37.20
- C $\frac{57}{100} \times 372$
- D 0.57×0.372
- E 5.7% of 3720

(2)

(Total 4 marks)

Q6.

Work out the value of 10% of 50

(Total 1 mark)

Q7.

Increase 4200 by 38%

(Total 2 marks)

Q8.

Work out 169% of 7800

(Total 2 marks)

Q9.

Increase 5400 by 27%

(Total 2 marks)

Q10.

28 is increased by 25%

40 is decreased by 15%

Which answer is bigger?

Show how you decide.

(Total 4 marks)

Q11.

Andrew is paid £850 a month.

Each month he

spends 60% of his pay

saves the rest.

How many months will it take Andrew to save £1700?

(Total 4 marks)

Q12.

Sid and Nancy each get the same pocket money.

Sid spends half of his.

He has £2.50 left.

Nancy spends 30% of hers.

How much does Nancy have left?

(Total 4 marks)

Q13.

Carly's total annual pay = salary + bonus

	Salary	Bonus
Last year	£26 000	£4000
This year	6% increase	9% decrease

Work out the percentage change in her total annual pay.

State whether it is an increase or a decrease.

(Total 4 marks)

Q14.

Ellen works for a company that sells cars.

Her **monthly** pay is

- a salary of £1470
- 28% of the total **profit** the company makes from her sales
- a £250 bonus **if** she sells at least 15 cars.

The table shows information about the cars she sold last year.

Total cost to the company	Total income for the company	Number of months when she sold at least 15 cars
£464 500	£538 000	3

Was Ellen's total pay for the **year** more than £40 000?

You **must** show your working.

(Total 6 marks)

Q15.

A gas company estimates the amount a household will spend on gas next year.

Estimate = £2500 excluding VAT

VAT is added at 5%

The household wants to pay in 12 equal monthly instalments.

Is £220 per month enough to pay for this gas?

You **must** show your working.

(Total 4 marks)

Q16.

A family uses 300 units of gas.

Each unit of gas costs 19p without VAT.

VAT of 5% is added to the bill.

Work out the total gas bill.

(Total 4 marks)

Q17.

A gym has 275 members.

40% are bronze members.

28% are silver members.

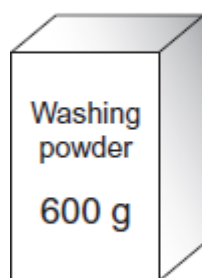
The rest are gold members.

Work out the number of gold members.

(Total 3 marks)

Q18.

Washing powder is sold in two sizes, 600 grams and 1500 grams.



£3.30



Was £9.60
Now 15% off

Which size is better value for money?

You **must** show your working.

(Total 6 marks)

Q19.

A train ticket costs £23.50

The price increases by 6%.

Felix has £100.

Can Felix buy four tickets at the new price?

(Total 4 marks)

Q20.

Jack sees the bicycle he wants to buy in two shops.

Bye-cycles



Price without VAT £130

VAT is 20%

Just Bykes



Normal price £195

Now $\frac{1}{4}$ off

VAT is included

In which shop is the bicycle cheaper?
You **must** show your working.

(Total 5 marks)

Q21.

Work out which distance is longer,
20% of 320 miles or $\frac{1}{2}$ of 130 miles.
You **must** show your working.

(Total 4 marks)

Q22.

In a test,
Section A has 80 marks
Section B has 120 marks.
Riya scores
55% in Section A
70% in Section B.
To pass, Riya needs to score 65% of the **total** marks.
Does she pass?
You **must** show your working.

(Total 4 marks)