



GCSE Foundation 09

Number



368 minutes

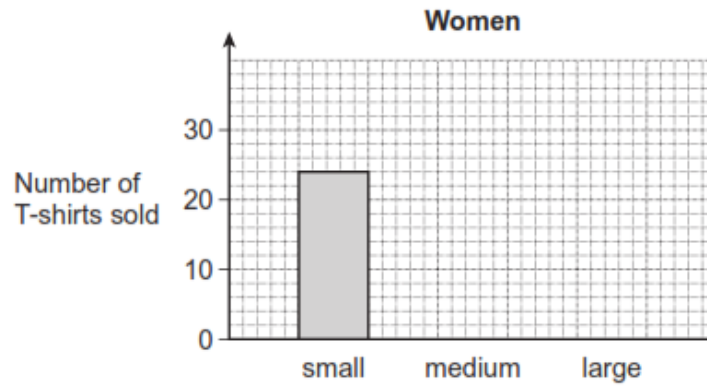


337 marks

Solving numerical problems

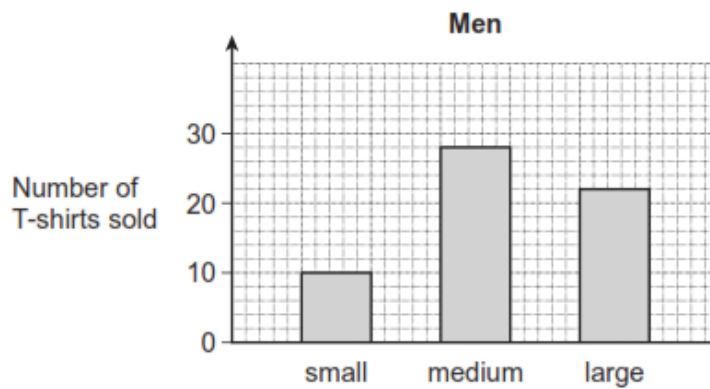
Q1. A shop sells 20 medium and 6 large T-shirts to women.

(a) Complete the bar chart.



(2)

(b) Here is the bar chart for men.



Each **small** T-shirt makes £2 profit.

Work out the total profit on **small** T-shirts for men and women.

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Answer £

(4)

(Total 6 marks)

Q2. Mr and Mrs Jones and their two children go to the cinema.

Ticket Prices		
Single tickets	Adult	£9.25
	Child	£5.50
Family ticket	2 adults and 2 children	£25.00

Mr Jones buys the family ticket instead of single tickets.

How much does he save?

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Answer £

(Total 4 marks)

Q3. Amie buys

- a book for £5.99
- a newspaper for £1.80
- 3 pens for 27p each.

She only has a £10 note.

How much change should she receive?

You **must** show your working.

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Answer £

(Total 4 marks)

Q4. Mel wants to make 20 pancakes.

She needs $\frac{1}{4}$ litre of milk to make 4 pancakes.

She has one litre of milk.

Does she have enough milk to make all the pancakes?
You **must** show your working.

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(Total 3 marks)

Q5. (a) The number of cakes sold in a shop on 5 days is shown.

Day	Mon	Tue	Wed	Thu	Fri
Number of cakes sold	44	38	48	55	60

Work out the mean number of cakes sold.

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Answer

(3)

- (b) On Saturday the shop had 60 cakes to sell.
41 cakes were sold.

The profit on each cake sold is 40 p.
The loss on each cake **not** sold is 10 p.

Work out the overall profit for these 60 cakes.

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Answer £

(4)
(Total 7 marks)

Q6. Naomi sees this offer.

Soup		
Normal price		85p per tin
Special offer	3 tins for the price of 2	

She buys six tins of soup using the special offer.

How much cheaper is this than paying the normal price?

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Answer £

(Total 3 marks)

Q7. Paul earns £3000 per month.
He can afford to pay up to 15% of this on rent.

Can he afford to rent a flat that costs £420 a month?
You **must** show your working.

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(Total 4 marks)

Q8. Steve buys 60 plants for £2.50 each.

He sells 25 of the plants for £5 each.
He sells 20 of the plants for £4 each.

He wants to make £100 profit.

What should he sell each of the remaining plants for?
You **must** show your working.

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Answer £

(Total 6 marks)

- Q9.** (a) One cubic metre (m^3) of concrete weighs 2.4 tonnes.
A base for a shed uses 3.8 m^3 of concrete.

Work out how much this concrete weighs.

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Answer tonnes

(2)

- (b) A base for a garage uses 12.5 tonnes of concrete.
A lorry delivers ready-mixed concrete in loads of 14 tonnes.

How many of these bases can be built with 10 loads of concrete?

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Answer

(3)

(Total 5 marks)

- Q10.** The diagram shows two different sweets and their weights.



8 grams

A



12 grams

B

The sweets are sold in bags.
Each bag contains 120 grams of sweets.

- (a) How many of sweet A are needed to fill one bag?

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Answer

(2)

- (b) A 120-gram bag is filled with the same number of each sweet.

How many of each sweet are in the bag?

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Answer

(3)

- (c) The 120-gram bags are put into boxes.
The total weight of the bags in each box is 6 kilograms.

How many bags are in each box?

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Answer

(3)

- (d) The 120-gram bags are sold for £1.99 each.
The sweets are also sold loose at 100 grams for £1.59

Which is better value?
You **must** show your working.

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(3)

(Total 11 marks)

Q11. Shola has **two** of these coins.

1p 2p 5p 10p 20p 50p £1

The value of one coin is 10% of the value of the other coin.

Work out the possible **total** amounts of money Shola could have.

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Answer

(Total 3 marks)

Q12. Anil, Ben, Chloe, Dave and Emma play a game.

Here is some information about the number of points they score.

Anil scores 20 points.

Ben scores 12 more points than Anil.

Ben scores twice as many points as Chloe.

Dave scores 11 fewer points than Ben.

The total number of points scored is 100.

How many points does Emma score?

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Answer

(Total 4 marks)

- Q13.** Andy has some sweets.
He gives one-quarter of the sweets to Dan.
Dan eats five sweets and has one left.

How many sweets does Andy start with?

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Answer

(Total 2 marks)

- Q14.** Here are three number cards.



There is a whole number on the back of each card.

The number on card A is three times the number on card B.
The number on card C is twice the number on card A.
The sum of the numbers on all three cards is 120.

Work out the number on each card.

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Answer A B C

(Total 3 marks)

Q15. Ella has these coins.



Jayden has these coins.



Ella gives Jayden one coin.
They now have the same amount of money as each other.

Which coin does Ella give to Jayden?

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Answer p

(Total 2 marks)

Q16. Hannah has a box of chocolates.
She gives half of the chocolates to Alex.
Alex eats five of them and has nine left.

How many chocolates are in the box at the start?

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Answer

(Total 2 marks)

Q17. Three different whole numbers add up to 31.

The first number is a multiple of 3.
The second number is a multiple of 4.
The third number is a multiple of 5.

What could the numbers be?

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Answer First number

Second number

Third number

(Total 3 marks)

Q18. Megan has a part-time job.

She earns £8 an hour.
She wants to buy a concert ticket costing £40.

How many hours does she need to work to earn enough to buy the ticket?

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Answer hours

(Total 2 marks)

- Q19.** A school shop can buy pens at £2.40 for a pack of 10.
 The shop sells pens at 50% profit.
 The school wants to raise a total of £72 from the sale of pens.

How many packs of pens should the shop buy?

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Answer

(Total 4 marks)

Q20.

Electricity Bill Charges	
First 200 units	24p per unit
Remaining units	15p per unit

Mrs Spark checks her electricity bill.
 Here are her meter readings.

New reading: 5647 units
 Old reading: 5345 units

Work out the total cost for the number of units used.

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Answer £

(Total 5 marks)

Q21. The number 57 can be written as the product of two prime numbers.

$$57 = 3 \times 19$$

Find **three** other numbers between 50 and 60 that can be written in this way.
You **must** show the products with each answer.

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Answer

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(Total 3 marks)

Q22. Emma wants to buy

2 magazines at £1.70 each
3 birthday cards at £2.25 each.

She only has a £10 note.

Is this enough?

You **must** show your working.

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(Total 4 marks)

Q23. Jack shares these coins with Lucy.



50p



20p



20p



20p



10p



10p



10p



5p



5p

They both receive the same amount.

Write down the coins they could receive.

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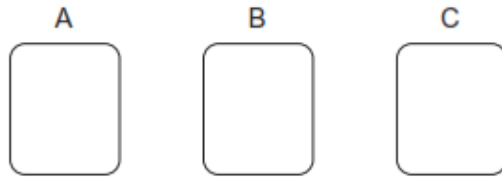
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Answer Jack

Lucy

(Total 4 marks)

Q24. Here are three cards.



Write a different whole number on each card so that

the numbers add up to 60

the number on card A is a multiple of 10

the number on card B is three times the number on card C.

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(Total 3 marks)

Q25. There are six cakes in a box.
The box and the cakes weigh 200 grams altogether.
The box weighs 20 grams.
Each cake weighs the same.

What does one cake weigh?

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Answer grams

(Total 3 marks)

Q26. Ann is paid £200 a week.
Each week she saves one-quarter of her pay.

(a) How much does she save each week?

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Answer £

(2)

(b) She is saving for a new carpet that costs £320.

How many weeks does it take to save enough to buy the carpet?

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Answer

(2)
(Total 4 marks)

Q27. Jay has £1.50 in change.

She only has 20 pence coins and 10 pence coins.

She has twice as many 20 pence coins as 10 pence coins.

How many 20 pence coins does she have?

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Answer

(Total 2 marks)

Q28. Here are the monthly charges for Mark's mobile phone.

Monthly charge £15
100 free minutes then 12 p per minute
200 free texts then 10 p per text

During one month, Mark makes 150 minutes of calls and sends 285 texts.

Work out the total charge for the month.

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Answer £

(Total 5 marks)

Q29. Kay has 325 beads.
Sharon has 165 beads.
Kay gives Sharon some beads.
They now have the same number of beads.

How many beads does Kay give Sharon?

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Answer

(Total 3 marks)

Q30. I am thinking of a number.
Two-thirds of the number is 60.

What is $1\frac{1}{2}$ times the number?

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Answer

(Total 3 marks)

Q31. Two teachers and 18 students go to the theatre.
The cost of a student's ticket is half of the cost of a teacher's ticket.
The total cost of the tickets is £132.

Work out the cost of one student's ticket.

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Answer £

(Total 3 marks)

Q32. Shamina buys three apples that cost 40 p each and four bananas that cost 25 p each.
She pays with a £10 note.

How much change should Shamina get?

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Answer £

(Total 3 marks)

Q33. (a) Solve $a - 2 = 9$

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Answer $a =$

(1)

(b) Solve $\frac{b}{3} = 5$

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Answer $b =$

(1)

(c) Solve $2c - 3 = 11$

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Answer $c =$

(2)

(Total 4 marks)

Q34. Here is part of a price list for a fruit and vegetable stall.

Price List		
Fruit	Apples	30p each
	Bananas	25p each
	Oranges	20p each
Vegetables		
	Broccoli	75p per 100g
	Carrots	20p per 100g
	Cauliflower	£1 per 100g

The Government says we should eat 5 portions of fruit and vegetables every day.
A portion is an item of fruit or 100 g of vegetables.

Dita has £10 to spend on fruit and vegetables for one week.

She wants to buy at least two different fruits and two different vegetables.

Show **one** way of buying fruit and vegetables so that she has 5-a-day for one week.

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(Total 5 marks)

Q35. Here is part of a price list for a fruit and vegetable stall.

Price List		
Fruit	Apples	30p each
	Bananas	25p each
	Oranges	20p each
Vegetables		
	Broccoli	75p per 100g
	Carrots	20p per 100g
	Cauliflower	£1 per 100g

The Government says we should eat 5 portions of fruit and vegetables every day.

A portion is an item of fruit or 100 g of vegetables.

Dita has £10 to spend on fruit and vegetables for one week.

She wants to buy at least two different fruits and two different vegetables.

Show **one** way of buying fruit and vegetables so that she has 5-a-day for one week.

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(Total 5 marks)

