Edexcel GCSE

Mathematics

Foundation Tier

Number: Four operations

Information for students

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 126 questions in this selection.

Advice for students

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

Information for teachers

The questions in this document are taken from the 2009 GCSE Exam Wizard and include questions from examinations set between January 2003 and June 2009 from specifications 1387, 1388, 2540, 2544, 1380 and 2381.

Questions are those tagged as assessing “Four operations” though they might assess other areas of the specification as well. Questions are those tagged as “Foundation” so could have (though not necessarily) appeared on either a Foundation or Intermediate tier paper.

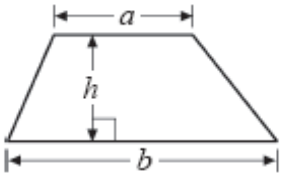
GCSE Mathematics

Formulae: Foundation Tier

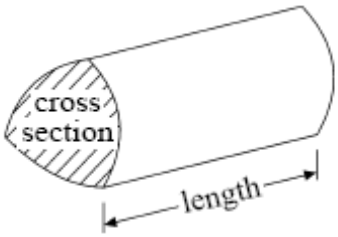
You must not write on this formulae page.

Anything you write on this formulae page will gain NO credit.

Area of trapezium = $(a + b)h$



Volume of prism = area of cross section × length



1. Tanya goes shopping.

She buys

$\frac{1}{2}$ kg of apples at 72p per kg,
4 bananas at 24p each,
5 kg of potatoes at 25p per kg.

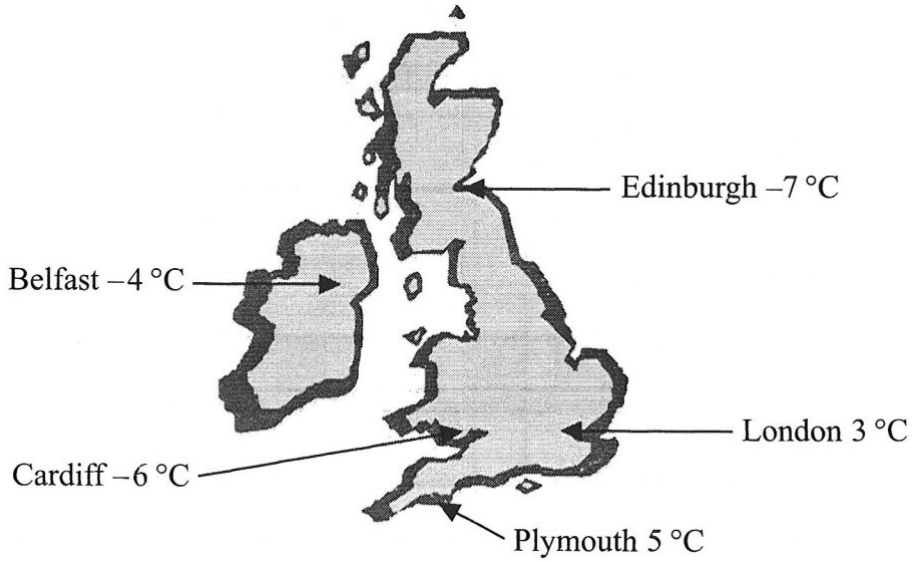
She pays with a £5 note.
Work out how much change she should get.

£ .....

(Total 4 marks)

2. Here is a map of the British Isles.

The temperatures in some places, one night last winter are shown on the map.



(a) (i) Write down the names of the two places that had the biggest difference in temperature.

.....

(ii) Work out the difference in temperature between these two places.

.....°C

(3)

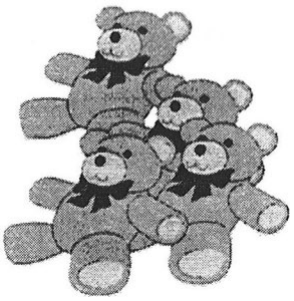
(b) Two pairs of places have a difference in temperature of 2 °C.
Write down the names of these places.

(i) ..... and .....

(ii) ..... and .....

(2)
(Total 5 marks)

3. Fatima bought 48 teddy bears at £9.55 each.



(a) Work out the total amount she paid.

£ .....

(3)

Fatima sold all the teddy bears for a total of £696.

She sold each teddy bear for the same price.

(b) Work out the price at which Fatima sold each teddy bear.

£ .....

(3)

(Total 6 marks)

4. Here is part of a train timetable from Crewe to London.

Station	Time of Leaving
Crewe	08 00
Wolverhampton	08 40
Birmingham	09 00
Coventry	09 30
Rugby	09 40
Milton Keynes	10 10

(a) At what time should the train leave Coventry?

.....

(1)

The train should arrive in London at 10 45

(b) How long should the train take to travel from Crewe to London?

.....

(2)

Verity arrived at Milton Keynes station at 09 53

(c) How many minutes should she have to wait before the 10 10 train leaves?

..... minutes

(1)

(Total 4 marks)

5. Simon repairs computers.
He charges
£56.80 for the first hour he works on a computer and
£42.50 for each extra hour's work.

Yesterday Simon repaired a computer and charged a total of £269.30

(a) Work out how many hours Simon worked yesterday on this computer.

.....

(2)

Simon reduces his charges by 5% when he is paid promptly.
He was paid promptly for yesterday's work on the computer.

(b) Work out how much he was paid.

£ .....

(3)
(Total 5 marks)

6. Use your calculator to work out

$$(2.3 + 1.8)^2 \times 1.07$$

Write down all the figures on your calculator display.

.....

(Total 2 marks)

7. Use your calculator to work out

(i) 2.4^3

……

(ii) $\sqrt{39.69}$

……

(Total 2 marks)

8. Nick takes 26 boxes out of his van.
The weight of each box is 32.9 kg.

(a) Work out the **total** weight of the 26 boxes.

..... kg

(3)

Then Nick fills the van with large wooden crates.
The weight of each crate is 69 kg.
The greatest weight the van can hold is 990 kg.

(b) Work out the greatest number of crates that the van can hold.

.....

(4)
(Total 7 marks)

9. Sally wrote down the temperature at different times on 1st January 2003.

Time	Temperature
midnight	– 6 °C
4 a.m.	–10 °C
8 a.m.	– 4 °C
noon	7 °C
3 p.m.	6 °C
7 p.m.	–2 °C

(a) Write down

(i) the **highest** temperature,

.....°C

(ii) the **lowest** temperature.

(2)

(b) Work out the difference in the temperature between

(i) 4 a.m. and 8 a.m.,

.....°C

(ii) 3 p.m. and 7 p.m.

.....°C

(2)

At 11 pm that day the temperature had fallen by 5 °C from its value at 7 p.m.

(c) Work out the temperature at 11 p.m.

.....°C

(1)

(Total 5 marks)

10. Christine buys

a calculator costing £5.95
a pencil case costing £1.62
a ruler costing 25p
two pens costing 48p each

She pays with a £10 note.

(a) How much change should she get from her £10 note?

£.....

(3)

Christine needs 160 tiles for a room.
Tiles are sold in boxes.
There are 12 tiles in each box.

(b) Work out the least number of boxes of tiles that Christine needs.

..... boxes

(2)

Each box of tiles costs £12.20

(c) Work out the **total** cost of the boxes of tiles that Christine needs.

£.....

(2)
(Total 7 marks)

11. Here is part of a railway timetable.

Manchester	07 53	09 17	10 35	11 17	13 30	14 36	16 26
Stockport	08 01	09 26	10 43	11 25	13 38	14 46	16 39
Macclesfield	08 23	09 38	10 58	11 38	13 52	14 58	17 03
Congleton	08 31	–	–	11 49	–	15 07	17 10
Kidsgrove	08 37	–	–	–	–	–	17 16
Stoke-on-Trent	08 49	10 00	11 23	12 03	14 12	15 19	17 33

A train leaves Manchester at 10 35.

(a) At what time should this train arrive in Stoke-on-Trent?

.....

(1)

Doris has to go to a meeting in Stoke-on-Trent.
She will catch the train in Stockport.
She needs to arrive in Stoke-on-Trent before 2 pm for her meeting.

(b) Write down the time of the latest train she can catch in Stockport.

.....

(1)

(c) Work out how many minutes it should take the 14 36 train from Manchester to get to Stoke-on-Trent.

..... minutes

(1)

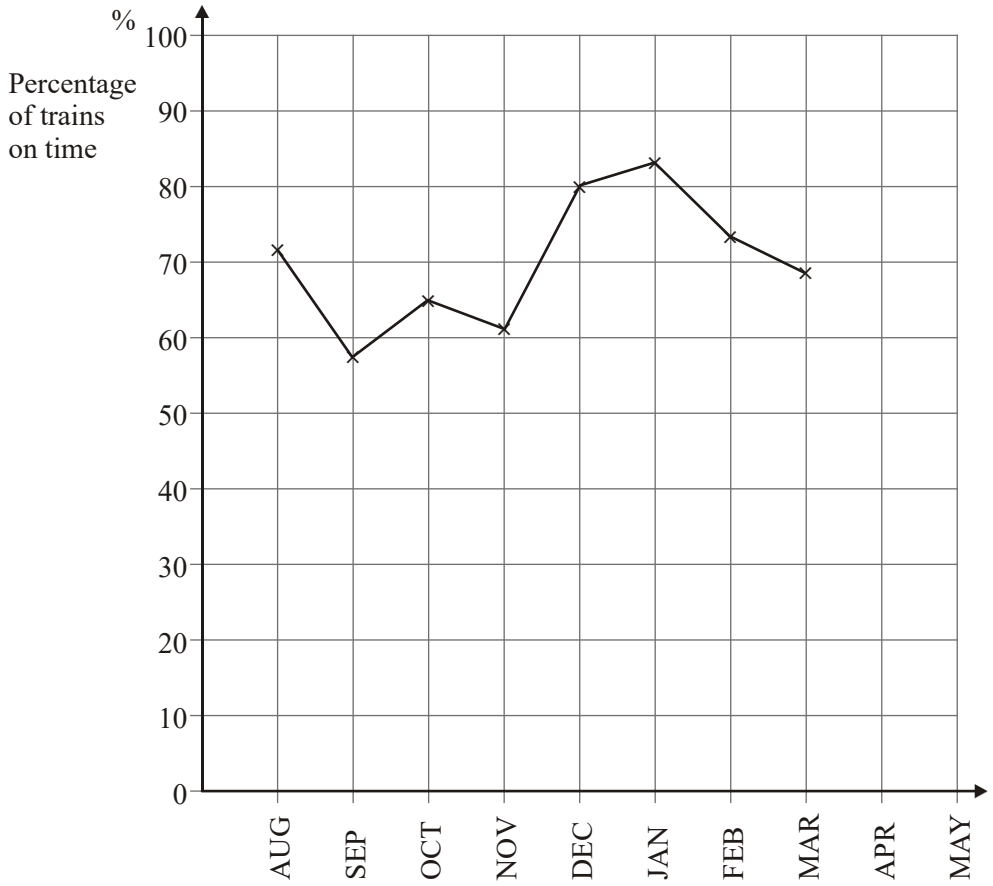
The 14 36 train from Manchester to Stoke-on-Trent takes less time than the 16 26 train from Manchester to Stoke-on-Trent.

(d) How many minutes less?

..... minutes

(2)

The graph shows the percentage of trains each month that arrived on time from August to March.



(e) Use the graph to write down the

(i) percentage of trains which arrived on time in December,

..... %

(ii) lowest percentage of trains which arrived on time.

..... %

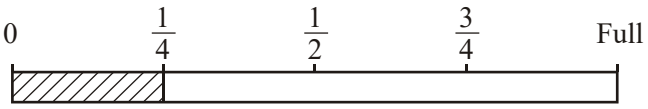
(2)

The percentage for April was 70% and for May was 62%.

(f) Complete the graph for April and for May.

(2)
(Total 9 marks)

12.



The diagram shows the measuring scale on a petrol tank.

(a) What fraction of the petrol tank is empty?

.....

(1)

The petrol tank holds 28 litres when full.
A litre of petrol costs 74p.

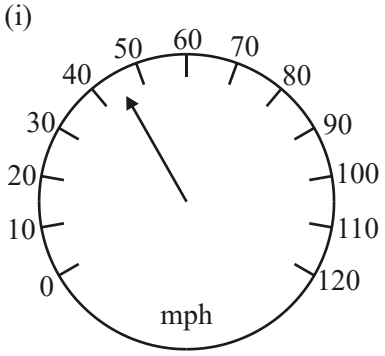
(b) Work out the cost of the petrol which has to be added to the tank so that it is full.

£ .....

(3)

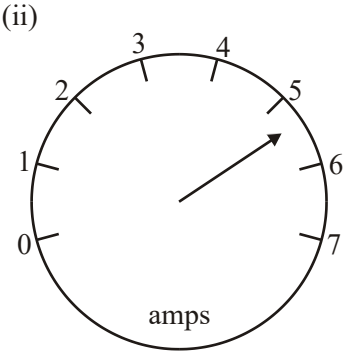
(c) What is the reading on each of these scales?

(i)



..... mph

(ii)



..... amps

(2)
(Total 6 marks)

13. Joe can do, on average, 4 calculations on his calculator every minute.

(a) How many calculations, on average, can he do in $7\frac{1}{2}$ minutes?

.....

(2)

(b) Use your calculator to work out the value of

$$\sqrt{(15 + 27.25)}$$

.....

(2)

(Total 4 marks)

14. Nick takes 26 boxes out of his van.
The weight of each box is 32.9 kg.

Work out the **total** weight of the 26 boxes.

..... kg

(Total 3 marks)

15. Enzo makes pizzas.

One day he makes 36 pizzas.
He charges £2.45 for each pizza.

(a) Work out the total amount he charges for 36 pizzas.

£ .....

(3)

Mario delivers pizzas.
He is paid 65p for each pizza he delivers.
One day he was paid £27.30 for delivering pizzas.

(b) How many pizzas did Mario deliver?

..... pizzas

(3)
(Total 6 marks)

16. The table gives information about an estate agent's charges for selling a house.

Value of the house	Estate agent's charges
Up to £60 000	2% of the value of the house
Over £60 000	2% of the first £60 000 plus 1% of the remaining value of the house

The estate agent sold a house for £80 000.

Work out the total charge.

£.....

(Total 4 marks)

17. Work out 286 × 43

……..

(Total 3 marks)

18. Jade made a train journey.

Her train should have arrived at 14 40

It arrived 1 hour 50 minutes late.

(a) At what time did her train arrive?

……..

(1)

The railway company gave Jade some money back, because her train was late.

The company used this rule to work out the amount of money.

Find $\frac{1}{4}$ of the ticket price
Then round **up** this answer to the next whole number of pounds

Jade's ticket price was £33.56

(b) (i) Work out $\frac{1}{4}$ of £33.56

£……

(ii) Round up your answer to part (i) to the next whole number of pounds.

£……

(3)

(Total 4 marks)

19. The table below shows the cost of each of three calculators.

Compact	£2.30
Studio	£2.15
Basic	£2.80

Barbara buys one Studio calculator and one Compact calculator.

She pays with a £10 note.

(a) How much change should she get?

£……

(4)

Mrs Brown wants to buy some Basic calculators.

She has £60 to spend.

(b) Work out the greatest number of Basic calculators she can buy.

……..

(2)

Mrs Brown gets a 25% reduction if she spends £120 or more.

(c) Work out 25% of £120

£……

(2)

(Total 8 marks)

20. The table shows the temperature on the surface of each of five planets.

Planet	Temperature
Venus	480 °C
Mars	– 60 °C
Jupiter	– 150 °C
Saturn	– 180 °C
Uranus	– 210 °C

(a) Work out the difference in temperature between Mars and Jupiter.

……°C

(1)

(b) Work out the difference in temperature between Venus and Mars.

……°C

(1)

(c) Which planet has a temperature 30 °C higher than the temperature on Saturn?

……..

(1)

The temperature on Pluto is 20 °C lower than the temperature on Uranus.

(d) Work out the temperature on Pluto.

……°C

(1)

(Total 4 marks)

21. Alison travels by car to her meetings.

Alison's company pays her 32p for each mile she travels.

One day Alison writes down the distance readings from her car.

Start of the day: 2430 miles
End of the day: 2658 miles

(a) Work out how much the company pays Alison for her day's travel.

£……

(4)

The next day Alison travelled a total of 145 miles.

She travelled $\frac{2}{5}$ of this distance in the morning.

(b) How many miles did she travel during the rest of the day?

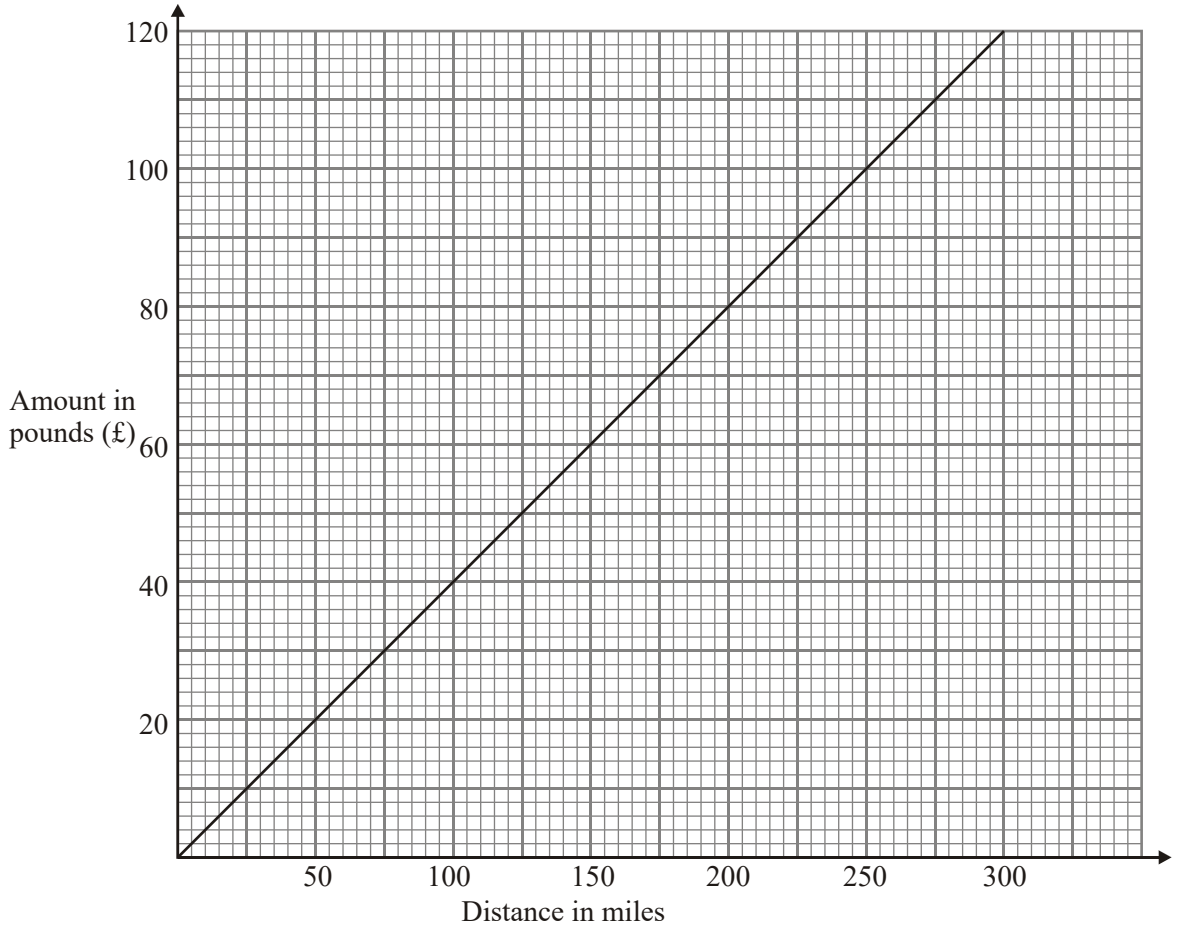
……miles

(3)

Tom also travels by car to his meetings.

Tom's company works out the amount it will pay him for the distance he travels.

It uses the graph below.



(c) Use the graph to write down

(i) the amount Tom's company pays him when he travels 200 miles,

£……

(ii) the distance Tom travels when his company pays him £50.

……miles

(2)

(Total 9 marks)

22. The cost of a calculator is £6.79
Work out the cost of 28 of these calculators.

£…….

(Total 3 marks)

23. Pat writes down two sums.

$$\mathbf{1 + 2 = 3}$$

$$\mathbf{7 + 8 = 15}$$

Pat says

'The sum of two whole consecutive numbers is never a square number'.

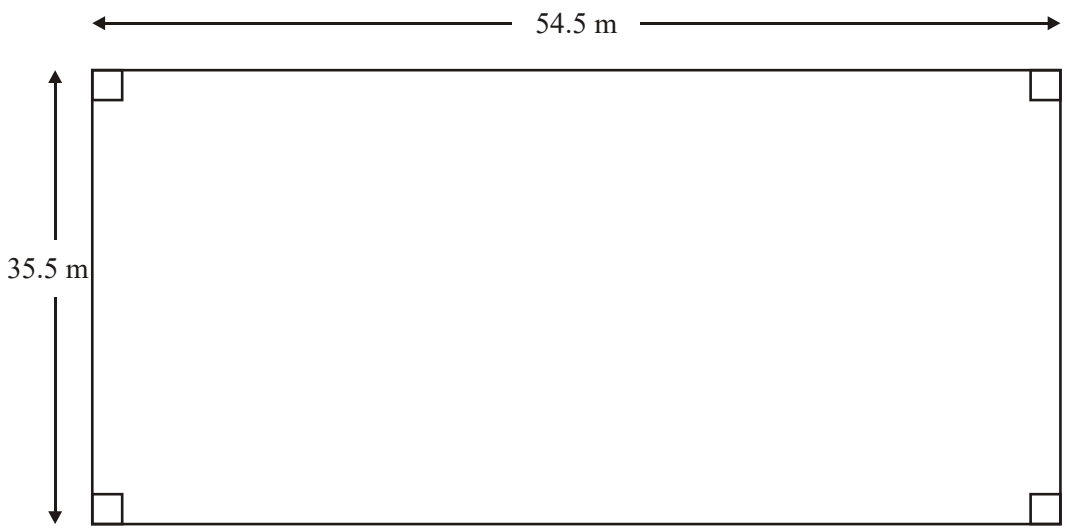
Give an example to show that Pat is wrong.

.....

(Total 2 marks)

24. The diagram shows a rectangular field.

Diagram **NOT** accurately drawn



The length of the field is 54.5 m.
The width of the field is 35.5 m.

The field is for sale.
Mrs Fox wants to buy the field.
She also wants to plant a hedge along the perimeter.

The field costs £11.44 per square metre.
Each metre length of hedge costs £4.81

£ .....

Mrs Fox has £23 000

Has Mrs Fox enough money to buy the field and plant the hedge?

You must show the working you use to make your decision.

(Total 6 marks)

25. 33 people were on a bus.

19 people got off.
15 people got on.

How many people are now on the bus?

(Total 2 marks)

26. Work out

(i) $2 \times 3 + 4$

…….

(ii) $10 - 2 \times 5$

…….

(iii) $16 \div (2 \times 4)$

…….

(Total 3 marks)

27. 'Jet Tours' has an aeroplane that will carry 27 passengers.

Each of the 27 passengers pays £55 to fly from Liverpool to Prague.

Work out the total amount that the passengers pay.

£ …….

(Total 2 marks)

28.

Pete's Café	
Price List	
Cup of Tea	75p
Cup of Coffee	85p
Can of Cola	75p
Roll	£1.70
Sandwich	£1.35

Joe buys a can of cola and a roll.

(a) Work out the total cost.

£……

(1)

Susan buys **two** cups of tea and **one** sandwich,

(b) Work out the total cost.

£……

(2)

Kim buys a cup of coffee and a roll.

She pays with a £5 note.

(c) How much change should she get?

£……

(2)

(Total 5 marks)

29. Work out an estimate for the value of 5.1×98

.....

(Total 2 marks)

30. The table shows the distances, in miles, between 4 cities.

	London		
74	Portsmouth		
39	58	Reading	
97	41	57	Salisbury

(a) Write down the distance between London and Salisbury.

..... miles

(1)

(b) Which two cities are the shortest distance apart?

..... and .....

(1)

Nazim drives from Portsmouth to Salisbury.
He then drives from Salisbury to Reading.
Finally he drives from Reading to Portsmouth.

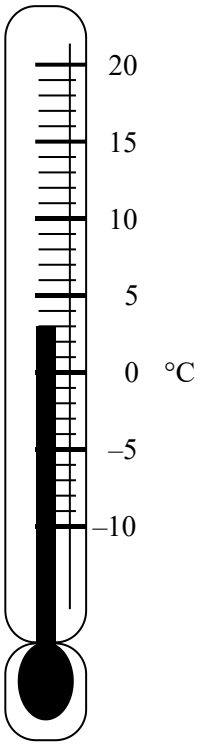
(c) Work out the total distance Nazim drives.

..... miles

(3)

(Total 5 marks)

31.



(a) Write down the temperature shown on the thermometer.

..... °C

(1)

The temperature falls by 8°C.

(b) Work out the new temperature.

..... °C

(1)

(Total 2 marks)

32. Beth says $20 - 5 \times 3$ is 45

Pat says $20 - 5 \times 3$ is 5

(a) Who is right?
Give a reason for your answer.

..... is right

(1)

(b) Work out $(12 + 9) \div 3$

.....

(1)
(Total 2 marks)

33. Here is part of a railway timetable.

Manchester	05 15	06 06	06 45	07 05	07 15	07 45
Stockport	05 26	06 16	06 55	07 15	07 25	07 55
Macclesfield	05 39	06 29	07 08		07 38	08 08
Stoke-on-Trent	05 54	06 45	07 24		07 54	08 24
Stafford	06 12		07 41		08 11	
London Euston	08 07	08 26	09 06	09 11	09 50	10 08

A train leaves Manchester at 06 45

(a) (i) At what time should this train get to London Euston?

.....

(ii) How long should it take to travel between Manchester and Stoke-on-Trent?

..... minutes

(2)

Mark has to go to a meeting in Stafford.
He will catch the train in Stockport.
He needs to arrive in Stafford **before** 08 00

(b) Write down the time of the latest train he can catch from Stockport.

.....

(1)

(c) Work out how long it should take the 07 05 train from Manchester to get to London Euston.
Give your answer in hours and minutes.

..... hours ..... minutes

(1)

The 06 45 train from Manchester takes more time to get to London Euston than the 07 05 train from Manchester.

(d) Work out how many more minutes the 06 45 train takes.

..... minutes

(2)

(Total 6 marks)

34. The table shows the highest and lowest temperatures one day in London and Moscow.

	Highest	**Lowest**
London	8°C	–6°C
Moscow	–3°C	–8°C

(a) Work out the difference between the **lowest** temperature in London and the **lowest** temperature in Moscow.

..... °C

(1)

(b) Work out the difference between the **highest** and **lowest** temperature in London.

..... °C

(1)

(Total 2 marks)

35.

Waxworks Adult ticket: £8.50 Child ticket: £4.50

Mr and Mrs Jones take their three children to the Waxworks.
Mrs Jones pays for 2 adult tickets and 3 child tickets.
She pays with a £50 note.

How much change should she receive from £50?

£ .....

(Total 3 marks)

36.

Young Person's RAILCARD $\frac{1}{3}$ off normal price

Lisa uses her railcard to buy a ticket.

She gets $\frac{1}{3}$ off the normal price of the ticket.

The normal price of the ticket is £24.90

Work out how much Lisa pays for the ticket.

£ .....

(Total 3 marks)

37. (a) Work out 500 – 107

.....

(2)

(b) Work out 327 × 4

.....

(2)
(Total 4 marks)

38. Here is part of a bus timetable.

Bus Station	07 00	07 30	08 00
Castle Street	07 10	07 40	08 15
High Street	07 25	07 55	08 25
Station Road	07 37	08 07	08 37
Church Street	07 50	08 20	08 50
Wharf Inn	07 55	08 25	08 55

A bus leaves the Bus Station at 07 00

(a) At what time should the 07 00 bus arrive at Station Road?

.....

(1)

Jill arrives at High Street at 07 45
She wants to catch a bus to Wharf Inn.

(b) How long should she have to wait for the next bus?

..... minutes

(1)

A bus leaves Station Road at 08 37

(c) How long should this bus take to travel from Station Road to Wharf Inn?

..... minutes

(1)
(Total 3 marks)

39. Kalim thinks of a number.
He multiplies the number by 2
He then adds 3

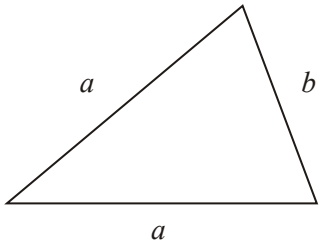
His answer is 27

(a) What number did Kalim think of?

.....

(2)

Emma uses the formula $P = 2a + b$
to find the perimeter P of this triangle.



(b) Find the value of P when $a = 5$ and $b = 3$

$P =$ .....

(2)
(Total 4 marks)

40.

Joe's Cafe	
Prices	
Cup of tea	70p
Cup of coffee	85p
Can of cola	75p
Roll	£1.60
Sandwich	£1.35

Jonathan buys a can of cola and a roll.

(a) Work out the total cost.

£ ……...

(1)

Sachin buys a cup of tea, a cup of coffee and 2 sandwiches.

(b) Work out the total cost.

£ ……...

(2)

Kim buys a can of cola, a cup of coffee and a sandwich.
She pays with a £5 note.

(c) Work out how much change she should get.

£ ……...

(3)
(Total 6 marks)

41. The table shows the midday temperatures in 4 different cities on Monday.

City	Midday temperature (°C)
Belfast	5
Cardiff	–1
Glasgow	–6
London	–4

(a) Which city had the lowest temperature?

……...

(1)

(b) Work out the difference between the temperature in Cardiff and the temperature in Belfast.

……... C

(1)

By Tuesday, the midday temperature in London had risen by 7 °C.

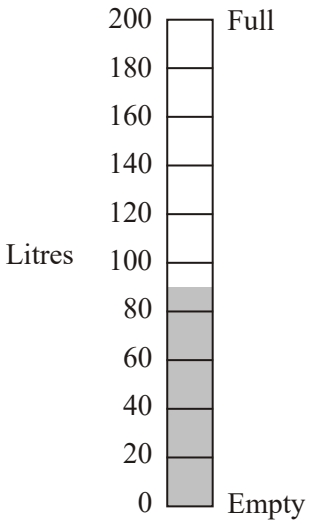
(c) Work out the midday temperature in London on Tuesday.

……... C

(1)

(Total 3 marks)

42.



The scale shows how much water there is in a tank.

(a) Write down an estimate for the number of litres of water in the tank.

…….... litres

(1)

The tank holds 200 litres when full.
Bill adds water to the tank until it is full.

(b) Work out the number of litres of water he adds.

…….... litres

(1)

(c) (i) How many litres are there in 1 gallon?

…….... litres

(ii) Change 200 litres to gallons.
Give your answer to the nearest gallon.

…….... gallons

(2)

(Total 4 marks)

43.

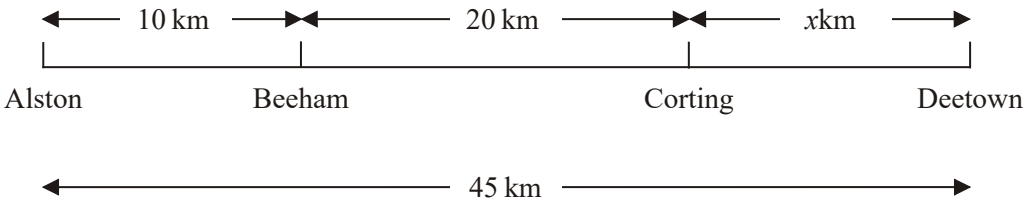


Diagram **NOT** accurately drawn

The diagram represents a straight road that joins 4 towns.

Beeham is 10 km from Alston.
Corting is 20 km from Beeham.
Deetown is x km from Corting.
Deetown is 45 km from Alston.

(a) Work out the distance from Alston to Corting.

……. km

(1)

(b) Work out the value of x.

x = ……...

(1)

Emma walks from Alston to Corting.
Josh walks from Beeham to Deetown.

(c) Who walks further?

……...

You must explain your answer.

.....

.....

(2)

Kyle walks from Alston to Beeham.
He starts from Alston at 9:30
He takes one hour 30 minutes to get to Beeham.

(d) At what time does Kyle get to Beeham?

……...

(1)

The diagram below shows the straight road from Alston to Deetown.
This diagram has been drawn accurately using a scale of 1 cm to represent 5 km.

(e) Mark accurately with crosses (×), the positions of Beeham and Corting.

(1)
(Total 6 marks)

44. 800 students are going on a school trip by bus.

Each bus can carry 34 students.

Work out the smallest number of buses needed to carry all the students.

……...

(Total 2 marks)

45. Work out

(i) $3 \times 3 - 5$

.....

(ii) $20 \div (12 - 2)$

.....

(iii) $7 + 8 \div 4$

.....

(Total 3 marks)

46. Work out £1.70 × 5

£ .....

(Total 1 mark)

47. (a) Work out $2 \times (11 + 9)$

.....

(1)

(b) Work out $3 \times 5 + 4$

.....

(1)

(c) Work out $20 - 5 \times 3$

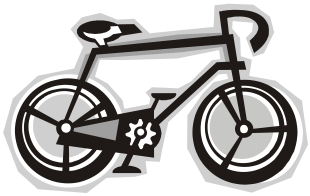
.....

(1)

(Total 3 marks)

48. Complete this bill.

Michael's Cycle Repairs



Description	**Number**	**Cost of each item**	**Total**
Brake blocks	4	£4.12	£16.48
Brake cables	2	£5.68	£.....
Pedals	2	£.....	£45.98
Labour charge $1\frac{1}{2}$ hours at £12.00 an hour			£.....
		Total	£.....

(Total 4 marks)

49. Use a calculator to work out

$$\sqrt{2.56} + 8.4$$

.....

(Total 2 marks)

50.

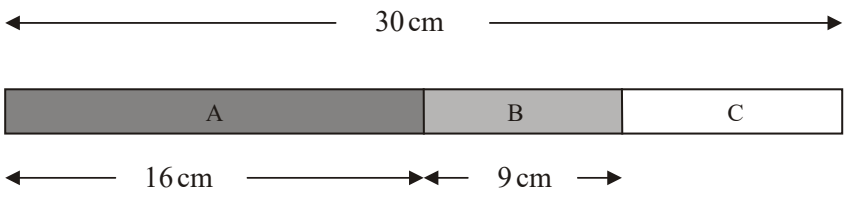


Diagram **NOT** accurately drawn

Here is a picture of a stick.
The stick is in three parts, A, B and C.

The total length of the stick is 30 cm.
The length of part A is 16 cm.
The length of part B is 9 cm.

Work out the length of part C.

..... cm
(Total 2 marks)

51. (a) Work out $4 \times 5 - 8$

.....
(1)

(b) Work out $18 + 2 \times 3$

.....
(1)

(c) Work out $(4 + 3) \times 7$

.....
(1)
(Total 3 marks)

52. Work out 36×24

.....

(Total 3 marks)

53.

Cinema tickets	
Adult ticket:	£8.65
Child ticket:	£4.90
Senior ticket:	£5.85

Tony buys one child ticket and one senior ticket.

(a) Work out the total cost.

£ .....

(1)

Stephanie buys adult tickets only.
The total cost is £60.55

(b) How many adult tickets does she buy?

.....

(2)

Kamala buys one adult ticket and two child tickets.
She pays with a £20 note.

(c) How much change should she get?

£ .....

(3)

(Total 6 marks)

54. The chart shows the shortest distances, in kilometres, between pairs of cities.
For example, the shortest distance between London and Manchester is 300 km.

London				
196	**Nottingham**			
300	101	**Manchester**		
325	158	56	**Liverpool**	
639	446	346	348	**Glasgow**

(a) Write down the shortest distance between **Nottingham** and **Liverpool**.

…… km

(1)

Daniel drives from London to Manchester by the shortest route.
He has driven 137 km.

(b) Work out how many more kilometres he must drive.

…… km

(2)

(c) Write down the names of the two cities which are the **least** distance apart.

…… and ……

(1)

(Total 4 marks)

55. Farah buys

2 pens at 84p each
3 folders at £1.35 each
1 pencil case at £1.49

She pays with a £10 note.
Work out how much change Farah should get from £10.

£ ……

(Total 3 marks)

56. The table shows the temperature in each of 6 cities on 1st January 2003.

City	Temperature
Cairo	15 °C
Copenhagen	–1 °C
Helsinki	–9 °C
Manchester	3 °C
Moscow	–14 °C
Sydney	20 °C

(a) Write down the name of the city which had the **lowest** temperature.

……

(1)

(b) Work out the difference in temperature between Copenhagen and Cairo.

……°C

(1)

On 2nd January 2003, the temperature in Moscow had increased by 4 °C.

(c) Work out the new temperature in Moscow.

……°C

(1)

(Total 3 marks)

57. (a) Work out

41.3×100

…… **(1)**

(b) Work out

0.4×0.6

…… **(1)**

(c) Work out

$5.2 - 1.37$

…… **(1)**

(Total 3 marks)

58. Mr Johnson works out the cost of the gas he used last year.
At the start of the year, the gas meter reading was 8569 units.
At the end of the year, the gas meter reading was 9872 units.

Each unit of gas he used cost 44p.

Work out the **total** cost of the gas he used last year.

£ ……

(Total 4 marks)

59. A badge costs 78p.
Sam has £5.
He buys as many badges as he can.

Work out the amount of change Sam should get from £5.
Give your answer in pence.

…….p
(Total 3 marks)

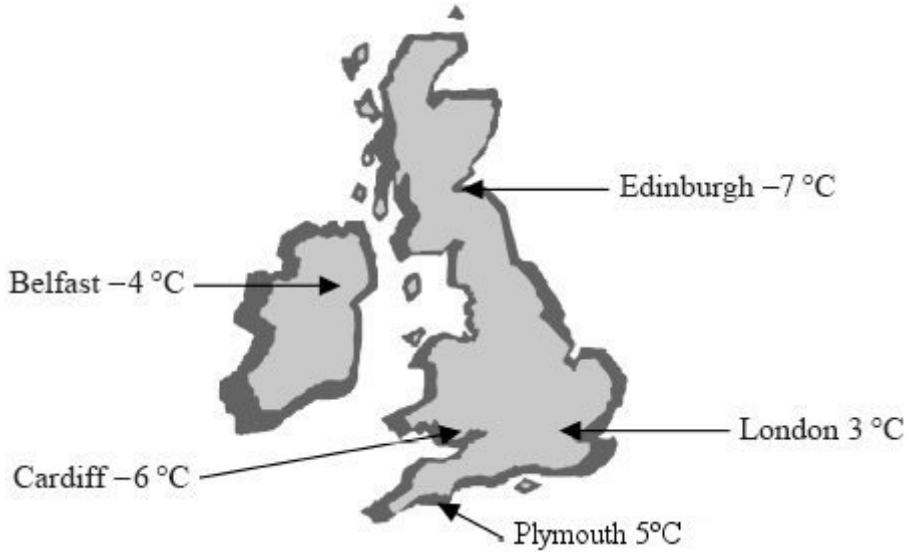
60. Mr Holland uses 367 units of electricity in one month.
He pays 5.84p for each unit of electricity.
Mr Holland also pays a fixed charge of £6.14 for the month.

Work out the **total amount** he pays.

£ ……
(Total 3 marks)

61. Here is a map of the British Isles.

The temperatures in some places, one night last winter are shown on the map.



(i) Write down the names of the two places that had the biggest difference in temperature.

.....

(ii) Work out the difference in temperature between these two places.

.....°C

(Total 3 marks)

62. Fatima bought 48 teddy bears at £9.55 each.

Work out the total amount she paid.

£ .....

(Total 3 marks)

63. A school buys 34 books.
Each book costs £5.21

Work out the total cost of the 34 books.

£ …….

(Total 3 marks)

64. (a) Work out the value of $(2 + 3) \times 4 + 5$

……

(1)

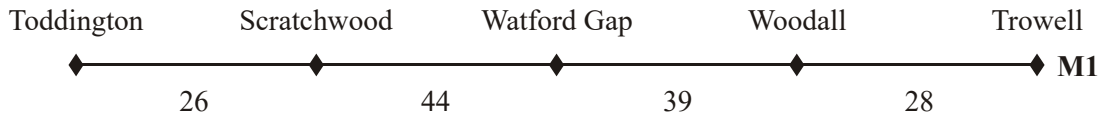
(b) Add brackets ( ) to make each statement correct.
You may use more than one pair of brackets in each statement.

(i) $2 + 3 \times 4 + 5 = 29$

(ii) $2 + 3 \times 4 + 5 = 45$

(2)
(Total 3 marks)

65. The diagram shows the distances, in miles, between some service areas on the M1 motorway.



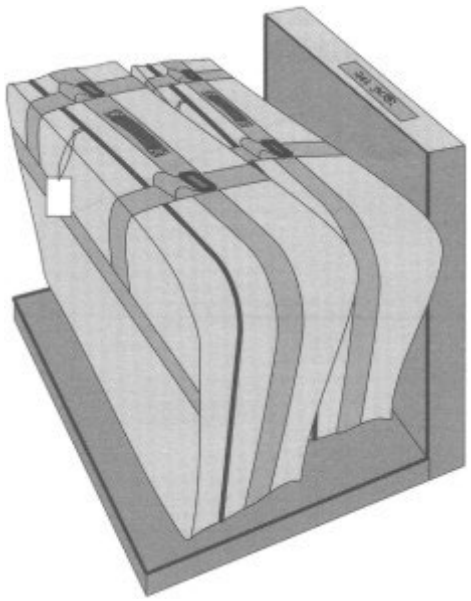
For example, the distance between Toddington and Watford Gap is 70 miles.

Complete the table.

Toddington				
26	Scratchwood			
70		Watford Gap		
	83	39	Woodall	
	111		28	Trowell

(Total 3 marks)

66.



Maggie has 38.7 kg of luggage.
She can take 20 kg of luggage onto a plane free of charge.

Maggie has to pay £6.50 for every kg, or part of a kg, of luggage over 20 kg.

Work out how much she has to pay.

£ …….

(Total 3 marks)

67. Here are two readings from a gas meter.

The difference in the meter readings gives the number of units of gas used.
The cost of gas is 21p for each unit of gas used.

Work out the cost of gas used.
Give your answer in pounds (£).

£ ……

(Total 4 marks)

68. Work out the value of $6 - 2 \times (5 - 1)$

……

(Total 1 mark)

69.

Menu	
Hot dog	$5.10
Chicken salad	$4.50
Hamburger	$3.80
Pizza	$4.00

A British family are on holiday in San Francisco.

At a café they order 3 hot dogs and 1 chicken salad.

The exchange rate is £1 = $1.44
Work out their **total** bill in pounds (£).

£ ……

(Total 4 marks)

70. Nick fills his van with large wooden crates.
The weight of each crate is 69 kg.
The greatest weight the van can hold is 990 kg.

Work out the greatest number of crates that the van can hold.

.....
(Total 4 marks)

71. Richard paid 56p for 7 pencils.
The cost of each pencil was the same.
Work out the cost of 4 of these pencils.

..... p
(Total 2 marks)

72. Christine buys

a calculator costing £5.95
a pencil case costing £1.62
a ruler costing 25p
two pens costing 48p each

She pays with a £10 note.

(a) How much change should she get from her £10 note?

£ .....

(3)

Christine needs 160 tiles for a room.
Tiles are sold in boxes.
There are 12 tiles in each box.

(b) Work out the least number of boxes of tiles that Christine needs.

..... boxes

(2)

(Total 5 marks)

73. A student bought a pair of sunglasses in the USA.
He paid $35.50
In England, an identical pair of sunglasses costs £26.99
The exchange rate is £1 = $1.42

In which country were the sunglasses cheaper, and by how much?
Show all your working.

.....

(Total 3 marks)

74. Mrs Adams bought cinema tickets for 4 adults and their children.

An adult ticket costs £5
A child ticket costs £4

Mrs Adams paid a total of £48

Work out the number of child tickets bought by Mrs Adams.

.....

(Total 3 marks)

75. Work out

7.6 – 4.83

.....

(Total 1 mark)

76. A packet of biscuits costs 56p.
A bottle of cola costs £1.14

Emma buys 4 packets of biscuits and one bottle of cola.
She pays with a £10 note.

Work out how much change she should get.

£ .....

(Total 3 marks)

77. (a) Work out

(i) $3 - 11$

.....

(ii) -3×-5

.....

(2)

(b) Work out $\frac{7}{8} - \frac{1}{4}$

.....

(2)
(Total 4 marks)

78. Here is part of a railway timetable.

Letchworth	11 30	11 55	–	–	12 30	12 55
Hitchin	11 34	11 59	12 04	12 29	12 34	12 59
Stevenage	11 39	12 04	12 09	12 34	12 39	13 04
Hatfield	11 53	–	12 23	–	12 53	–
Potters Bar	11 59	–	12 29	–	12 59	–
London	12 17	12 30	12 48	13 05	13 17	13 31

A train leaves Letchworth at 11 55

(a) At what time should this train arrive in London?

.....

(1)

Another train leaves Letchworth at 12 55

(b) Work out how many minutes it should take this train to get to London.

..... minutes

(1)

Jerry is going to London.
He will catch the train in Hatfield.

Jerry needs to arrive in London **before** 13 00

(c) Write down the time of the latest train he can catch from Hatfield.

.....

(1)

(Total 3 marks)

79.

Mr Snow stayed some time at the South Pole.

The highest temperature there was –30 °C.
The lowest temperature there was –57 °C.

(a) Work out the difference between the highest temperature and the lowest temperature at the South Pole.

..... °C

(1)

Mr Snow returned to his house in London.
The temperature outside his house was –2 °C.
The temperature inside his house was 12 °C higher.

(b) Work out the temperature inside his house.

..... °C

(1)

(Total 2 marks)

80. A bar of chocolate costs 92p.
Peter buys four of these bars.
He pays with a £5 note.

Work out how much change he should get.

£.....

(Total 2 marks)

81. (a) Work out

$$\frac{-8 \times -3}{-6}$$

.....

(1)

(b) Work out

$33 \times 10 - 6 \times 5$

.....

(2)
(Total 3 marks)

82. Hugh went on holiday to Italy.

While on holiday, he went shopping.
He bought a belt and a hat.
The belt cost 25 euros.
The hat cost 14 euros.

The exchange rate was £1 = 1.56 euros.

Work out the total cost of the belt and the hat.
Give the total cost in pounds.

£ .....

(Total 3 marks)

83. Alison travels by car to her meetings.
Alison's company pays her 32p for each mile she travels.

One day Alison writes down the distance readings from her car.

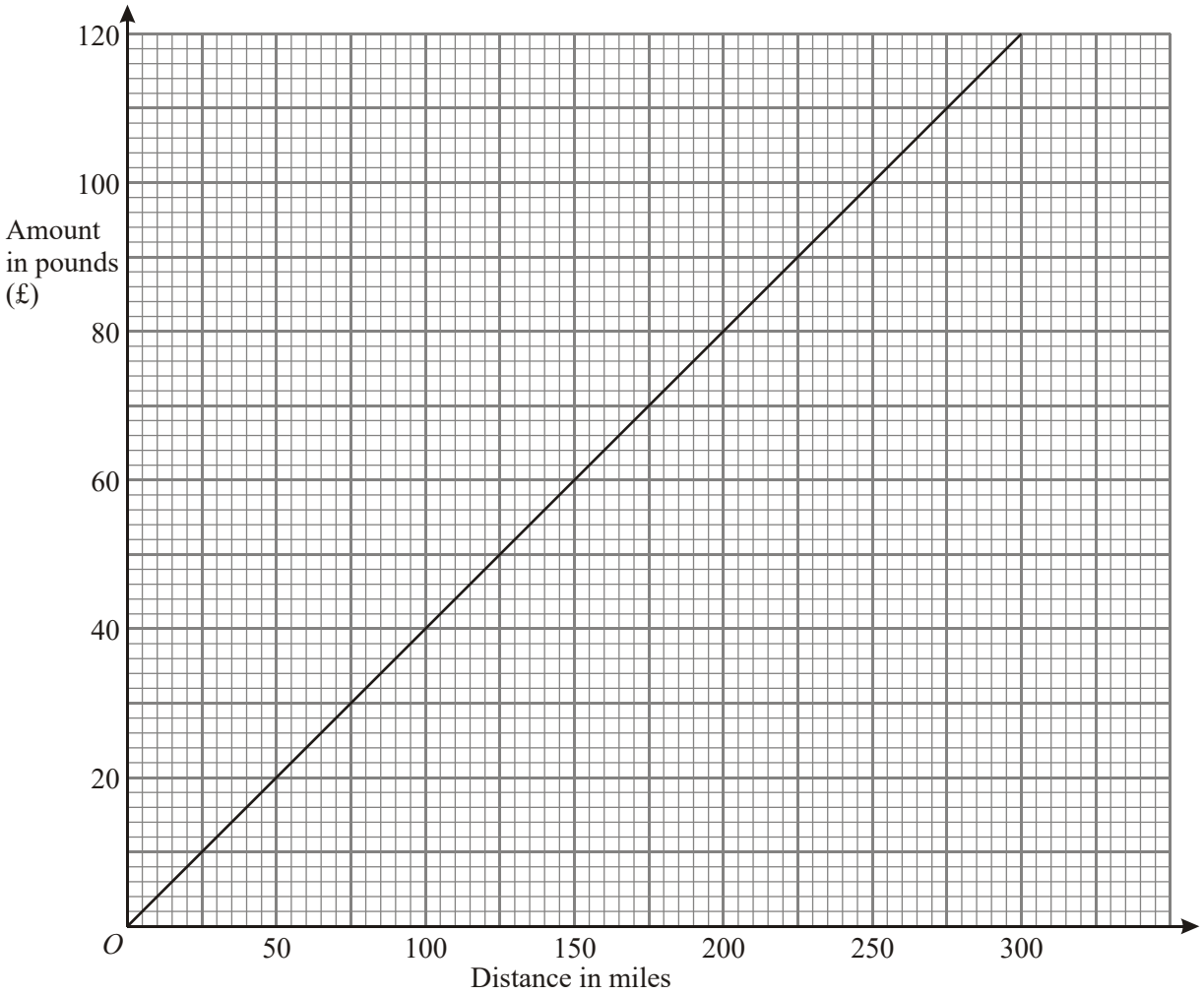
Start of the day: 2430 miles
End of the day: 2658 miles

(a) Work out how much the company pays Alison for her day's travel.

£ .....

(4)

Tom also travels by car to his meetings.
Tom's company works out the amount it will pay him for the distance he travels.
It uses the graph below.



(b) Use the graph to write down

(i) the amount Tom's company pays him when he travels 200 miles,

£ ……..

(ii) the distance Tom travels when his company pays him £50.

…….. miles

(2)

(Total 6 marks)

84. 12. The cost of a book is £2.80
Mrs Brown has £60 to spend.

(a) Work out the greatest number of these books that Mrs Brown can buy.

……

(2)

Daniel is going to buy a computer game for £40.
The price of the computer game is reduced by 20%.

(b) Work out the priceDaniel pays for the computer game.

£ …….

(3)
(Total 5 marks)

85. Rizwan buys

6 stamps at 25p each
2 packs of postcards at 89p per pack
1 pack of labels at £1.09

He pays with a £10 note.

Work out how much change Rizwan should get.

£ .....

(Total 3 marks)

86. Susan is decorating her bedroom.
She buys

1 paint brush costing £2.46
1 paint roller costing £3.08
2 tins of paint costing £5.95 **each**

She pays with a £20 note.
Work out how much change she should get.

£.....

(Total 3 marks)

87. 33 people were on a bus.

19 people got off.
15 people got on.

How many people are now on the bus?

…….

(Total 2 marks)

88. Work out

(i) $2 \times 3 + 4$

…….

(ii) $16 \div (2 \times 4)$

…….

(Total 2 marks)

89.

Pete's Café	
Price List	
Cup of Tea	75p
Cup of Coffee	85p
Can of Cola	75p
Roll	£1.70
Sandwich	£1.35

Joe buys a can of cola and a roll.

(a) Work out the total cost.

£…….

(1)

Kim buys a cup of coffee and a roll.

She pays with a £5 note.

(b) How much change should she get?

£…….

(2)

(Total 3 marks)

90. Chris buys

1 map costing £4.50
1 whistle costing £1.35
2 bars of chocolate costing £0.55 **each**

He pays with a £10 note.

Work out how much change he should get.

£ .....

(Total 3 marks)

91. Work out 362 × 54
You **must** show all your working.

.....

(Total 3 marks)

92. Use the information that

$$56 \times 29 = 1624$$

to find the value of 56×0.29

.....

(Total 1 mark)

93. Write down the value of

(a) 5^2

.....

(1)

(b) $\sqrt{49}$

.....

(1)

(c) $5 + 2 \times 4$

.....

(1)

(Total 3 marks)

94. Work out an estimate for $\dfrac{29.8 \times 4.1}{0.21}$

.....

(Total 3 marks)

95. Martin bought a calculator for £5.75 and a pencil case for £1.45

Work out his total bill.

£6.10	£6.20	£6.30	£6.15	£7.20
☐	☐	☐	☐	☐
A	**B**	**C**	**D**	**E**

(Total 1 mark)

96. Sam buys a bus ticket for £1.25 and a train ticket for £14.80
She pays with a £20 note.

How much change should she receive?

£4.95	£16.05	£4.05	£3.95	£18.75
☐	☐	☐	☐	☐
A	**B**	**C**	**D**	**E**

(Total 1 mark)

97. There are 48 packets of crisps in each box of crisps.
Work out the total number of packets of crisps in 234 boxes.

2808	10000	11196	11232	11238
☐	☐	☐	☐	☐
A	**B**	**C**	**D**	**E**

(Total 1 mark)

98. What is –7 added to –3?

–4	+4	+10	+21	–10
A	**B**	**C**	**D**	**E**

(Total 1 mark)

99. Magazines cost £2.45 each.
Farah buys 3 magazines.
She pays with a £10 note.

Work out how much change she should get.

£ .....

(Total 3 marks)

100. $13 - 3 \times 4 + 2 =$

42	60	–5	3	–1
A	**B**	**C**	**D**	**E**

(Total 1 mark)

101. What is –5 added to +3?

–8	–2	–15	+8	+2
A	**B**	**C**	**D**	**E**

(Total 1 mark)

102.

CALCULATORS

Basic	£3
Scientific	£5

Julie spends £25 on scientific calculators.
In total she buys 12 calculators for £46

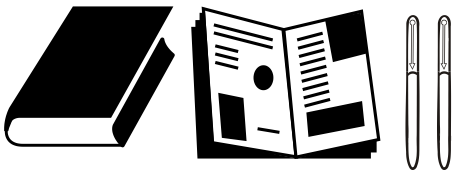
How many basic calculators does she buy?

8	5	6	7	4
A	**B**	**C**	**D**	**E**

(Total 1 mark)

103. Grace buys

1 book for £3.95
1 magazine for £1.80
2 pens for 40p **each**.



She pays with a £10 note.

How much change should she get?

£ .....

(Total 3 marks)

104. Work out 745 × 23

You **must** show **all** your working.

.....

(Total 3 marks)

105. Complete this bill.

Ben's
DIY shop

Description	Number	Cost of each item	Total
Tins of paint	2	£14.50	£ .....
Paint brushes	3	£5.00	£15.00
Rolls of wallpaper	4	£	£24.00
		Total cost	£ .....

(Total 3 marks)

106. (a) Work out –2 + 5

.....

(1)

(b) Work out –3 – 5

.....

(1)

(c) Work out –2 × 4

.....

(1)

(Total 3 marks)

107. The table shows the temperatures in four cities at noon one day.

Oslo	−13°C
New York	−5°C
Cape Town	9°C
London	2°C

(a) Write down the **highest** temperature.

..... °C

(1)

(b) Work out the difference in temperature between Oslo and New York.

..... °C

(1)

At 8 pm the temperature in London was 3°C lower than the temperature at noon.

(c) Work out the temperature in London at 8 pm.

..... °C

(1)

(Total 3 marks)

108. Josh buys 40 litres of milk.
The total cost is £33.20

Work out the cost of 1 litre of the milk.

.....

(Total 3 marks)

109. Bethony calls her friend on her mobile phone.

She starts the call at 8.11 pm.
She ends the call at 8.57 pm.

The call costs 12p for each minute.

Work out the **total** cost of her call.
Give your answer in pounds (£).

£ .....

(Total 4 marks)

110. A packet of popcorn costs £1.99
Lisa buys 2 packets of popcorn.
She pays with a £5 note.

Work out how much change Lisa should get.

£ .....

(Total 2 marks)

111. (a) Write these numbers in order of size.
Start with the smallest number.

–5 3 –1 0 8

.....

(1)

(b) Work out $7 + 3 \times 5$

(1)

(Total 2 marks)

112. The cost of 30 litres of petrol is £28.80
Work out the cost of 1 litre of this petrol.

.....

(Total 3 marks)

113. Ted buys a packet of sweets for £2.95 and a can of cola for 45p.

What is the total cost?

£2.40	£3.35	£3.40	£2.50	£3.30
A	**B**	**C**	**D**	**E**

(Total 1 mark)

114. 159 is divided by 13

What is the remainder?

12	11	3	1	29
A	**B**	**C**	**D**	**E**

(Total 1 mark)

115. 325 × 23 =

7475	1625	675	6500	7575
A	**B**	**C**	**D**	**E**

(Total 1 mark)

116. Frankie says that $15 - 3 \times 2 = 24$

Frankie is wrong.
Explain why.

.....

(Total 1 mark)

117. Oranges cost 24p each.

Raja buys 5 of the oranges.
He pays with a £5 note.

How much change should he get?

£3.80	£4.20	£1.20	£2.80	£4.76
A	**B**	**C**	**D**	**E**

(Total 1 mark)

118. At 8 am, the temperature was –2°C.
At midday, the temperature was 6°C higher.

What was the temperature at midday?

–8°C	4°C	6°C	2°C	8°C
A	**B**	**C**	**D**	**E**

(Total 1 mark)

119. $20 - (4 + 10) =$

6	–6	26	14	–34
A	**B**	**C**	**D**	**E**

(Total 1 mark)

120. There were 34 coins in a bag.
Jim took 15 coins out of the bag.
Rose put 17 coins into the bag.

How many coins are now in the bag?

.....

(Total 2 marks)

121. 106 – 38 =

62	72	68	78	66
A	**B**	**C**	**D**	**E**

(Total 1 mark)

122. Bill buys a cup of coffee and a sandwich.

The cup of coffee costs 95p.
The sandwich costs £1.49

What is the total cost?

£96.49	£2.49	£2.54	£2.44	£10.99
A	**B**	**C**	**D**	**E**

(Total 1 mark)

123. $63 \times 1 + 63 \times 9 =$

630	810	3060	801	815
A	**B**	**C**	**D**	**E**

(Total 1 mark)

124. (a) Work out 400 – 193

.....

(2)

(b) Work out 4 – 9

.....

(1)

(c) Work out -3×5

.....

(1)

(d) Work out $300 \div 50$

.....

(1)

(Total 5 marks)

125. The table shows temperatures at midnight and midday on one day in five cities.

City	Midnight temperature	Midday temperature
Belfast	−3 °C	4 °C
Cambridge	−1 °C	4 °C
Edinburgh	−7 °C	−1 °C
Leeds	−6 °C	3 °C
London	−2 °C	6 °C

(a) Which city had the lowest midnight temperature?

.....

(1)

(b) How many degrees higher was the midnight temperature in Cambridge than the midnight temperature in Leeds?

..... °C

(1)

(c) Which city had the greatest rise in temperature from midnight to midday?

.....

(1)

(Total 3 marks)

126. Kaz buys a car.
The normal price of the car is £7200

Kaz gets a 10% discount.

(i) Work out 10% of £7200

£ .....

(ii) Work out how much Kaz pays for the car.

£ .....

(Total 3 marks)

01. 2.43 4

B1 for 36 or 0.36
B1 for 96 or 0.96
B1 for 125 or 1.25 If none of first 3 B1s awarded then
SC B1 for four 24s and five 25s seen OR 4 × 24 and
5 × 25 seen
B1 for 2.43 cao

[4]

02. (a) (i) Edinburgh and Plymouth 3

B1 for Edinburgh or –7
B1 for Plymouth or 5

(ii) 12

B1ft from (i) if one positive and one negative

(b) Cardiff and Belfast
London and Plymouth 2

B1 for Cardiff and Belfast OR –6 and –4
B1 for London and Plymouth OR 3 and 5

[5]

03. (a) 458.40 3

955		48
48	OR	955
7640		240
38200		2400
45840		43200
		45840

M1 for complete correct method (condone one computational error)
A2 for 458.40 cao
(A1 for digits 4584 OR ft if M1 awarded)

(b) 14.50 3

```
   14.5
48 | 696.0
   48
   216
   192
    24 0
    24 0
```

M1 for 1 as first digit in answer and remainder 21
M1 (dep) 4 as second digit in answer
A1 for 14.50 (Accept 14.5)

[6]

04. (a) 9:30 1

B1 cao

(b) 2hrs 45 min 2

B2 for 2hr 45 min or 2 $\frac{3}{4}$ hr or 165 minutes
B1 2:45 or 2.45 or 165 or 45min + 1hr + 1hr oe

(c) 17 1

B1 cao

[4]

05. (a) 6 2

$269.30 - 56.80 = 212.50$
$\frac{212.50}{42.50}$

M1 for $\frac{269.30 - 56.80}{42.50}$ *or 5 seen*
A1 cao

(b) 255.83 or 255.84 3

5% of £269.30
£269.30 – "£13.465"
OR $\frac{95}{100} \times 269.30$

M1 for (5 ÷ 100) × 269.30
M1 for 269.30 – "13.465"
A1 cao
OR M2 for $\frac{95}{100} \times 269.30$
A1 cao
Alternative Method:
M1 for $\frac{5}{100} \times 56.80$ *(= 2.84)*
and $\frac{5}{100} \times 42.50$ *(= 2.12(5))*
(OR 53.96 AND 40.38 (40.375) seen
M1 for 56.80 – "2.84" (= 53.96)
42.50 – "2.12(5)" (= 40.375 or 40.38)
"5" × "40.375" + "53.96"
A1 cao

[5]

06. 17.9867 2

$4.1^2 \times 1.07 = 16.81 \times 1.07$

M1 for ("4.1") followed by squaring, or sight of 16.81
A1 cao
SC: B1 for 18 or better with no working

07. (i) 13.824 2

B1 cao

(ii) 6.3

B1 cao

[2]

08. (a) 855.4 3

1974
6580
8554

M1 for complete method with relative place value correct, condone 1 error in multiplication
A2 cao
(A1 for digits 8554 seen or A1 for "855.4" dependent on 1 arithmetic error)

(b) 14 4

990 ÷ 69 = 14.3…. or 14 rem 24

Method 1 - Everything excluding long division
M2 for a valid method with no errors …need to see 966 or 1035
(M1 for a valid method, including estimation, that reaches an answer between 901 and 1099 inclusive. Ignore errors.)
A2 for 14 with a fully correct method
(A1 (dep on 1st M1) for an answer between 14 and 15 inclusive. Ignore errors. Cannot have used estimation.)
Note: Estimation can only score a maximum of M1 unless accompanied by another method or 966 or 1035 see (award M2)
Method 2 – long division method
M2 for 990 ÷ 69 = integer answer between 12 and 19 inclusive and rem 30 seen
(M1 for 990 ÷ 69 with 1 in tens column.)
A2 for 14 with fully correct method
(A1 (dep on 1st M1) for an answer between 14 and 15 inclusive.)

[7]

09. (a) (i) 7 2

B1 for 7

(ii) – 10

B1 for –10

(b) (i) 6 2

B1 for 6 (accept –6)

(ii) 8

B1 for 8 (accept –8)

(c) –7 1

B1 for –7 cao

[5]

10. (a) 1.22 3

£5.95 + £1.62 + 25p + 2 × 48p = £8.78

M1 for 3 of £5.95, £1.62, 25p, 48p seen with intention to add or 170 seen
A1 for £8.78
A1 ft from " 8.78"

(b) 14 2

160 ÷ 12 = 13.(333…)

M1 for 160 ÷ 12, or 13 or better or 12 × 13 or 12 × 14
A1 14 cao

(c) 170.80 2

"14" × £12.20 = £170.8**0**

M1 for "14" × 12.20
*A1 for 170.8**0** or 158.6**0** if 13 in (b)*
NB: 170.8 or 158.6 gets M1 A0

[7]

11. (a) 1123 1

B1 cao

(b) 1125 1

B1 cao

(c) 43 1

B1 cao

(d) 24 2

67 – "43"

M1 for 67 – "43"
A1 ft from "43"

(e) (i) 80 2

B1 cao

(ii) 56 – 58

B1 answer in range 56 to 58 inc

(f) Completes graph 2

B2 for (Apr, 70) and (May, 60 < p < 65) plotted and joined
(B1 for one point plotted)

[9]

12. (a) $\frac{3}{4}$ 1

B1 accept 0.75, 75%

(b) 15.54 3

$\frac{3}{4} \times 28 = 21$

M1 for $\frac{3}{4} \times 28$ *or 21 seen*
M1 for "21" × 74 or 28 × 74 or 7 × 74
A1 cao

(c) (i) 44 – 46 2

B1 44 – 46 inc

(ii) 5.2 – 5.4

B1 5.2 – 5.4 inc

[6]

13. (a) 30 2

7.5 × 4

M1 for 7.5 × 4 or $\frac{1}{2} 7 \times 4$
A1 cao

(b) 6.5 2

√(42.25)

B2 for 6.5 (B1 for 42.25)

[4]

14. 855.4 3

1974
6580
8554

M1 for complete correct method with relative place value correct, condone 1 error in multiplication.
A2 cao
(A1 for digits 8554 seen or A1 ft for "855.4" dependent on one arithmetic error only)

[3]

15. (a) £88.20 3

245
36 ×
1470

7350
8820

M1 for complete method with relative place value correct, condone one error in a single digit multiplication
A2 cao
(A1 for either "8820" or a correct conversion of their total into pounds)

(b) 42 3

27.30 – 0.65
2730 – 65

M1 for intention to divide £27.30 by 65p
M1 for complete method for dividing £27.30 by 65p, condone one arithmetic error
A1 for 42 cao

[6]

16. £1400 4

2 – 100 × 60 000
1 – 100 × 20 000
Total = £1400

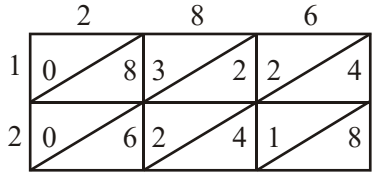
M1 for 2 – 100 × 60 000 or 2 – 100 × 80 000
A1 for 1200 or 1600
M1 for intention to find 1% of 20000
A1 for 1400 cao

[4]

17. 12298 3

286	43	286 × 40 = 1140
43	286	286 × 3 = 858
858	258	1140 + 858 = 12298
11440	3440	
12298	8600	
	12298	

×	40	3	
200	8000	600	8600
80	3200	240	3440
6	240	18	258
			12298



M2 for complete correct method (condone one computational error)
(M1 for complete correct method with two computational errors)
A1 cao

OR

B2 inside of grid completed (condone missing zeros and one error)
(B1 2 or 3 errors)
B1 cao

[3]

18. (a) 16 30 1

B1 Accept 4 30 pm Do not accept 4 30

(b) (i) 8.39 3

33.56 ÷ 4 oe

M1 for 33.56 ÷ 4 oe eg 3356 ÷ 4, division by 2 twice
A1 cao

(ii) 9

B1 ft from "8.39" unless whole number of pounds

[4]

19. (a) 5.55 4

£10 – (£2.15 + £2.30)

M1 £2.15 + £2.30
A1 for 4.45
M1 £10 – "4.45"
A1 cao

(b) 21 2

£60 ÷ £2.80 = 21.42857

M1 for £60 ÷ £2.80 or sight of digits 214…
A1 for 21

(c) 30 2

120 × 25 ÷ 100

M1 1/4 of £120 (oe)
A1 cao
SC B2 for £90

[8]

20. (a) 90 1

B1 accept –90

(b) 540 1

B1 accept –540

(c) Jupiter 1

B1 accept –150

(d) – 230 1

B1 cao

[4]

21. (a) 72.96 4

2658 – 2430 = 228

"228" × 32

M1 2658 – 2430
A1 228
M1 "228" × 32 or "228" × 0.32 or digits 7296 seen
A1 cao
Or
M1 for 2430 × 32 (or digits 77760 seen)
or 2658 × 32 (or digits 85056 seen)
A1 if 1 correct
M1 for "85056" – "77760" or 7296 seen
A1 cao

(b) 87 3

$\frac{2}{5} \times 145 = 58$

145 – "58"

M1 $\frac{2}{5}$ *× 145 (or M1* $\frac{3}{5}$ *seen)*

A1 58 (or M1 $\frac{3}{5}$ *× 145)*

A1 for 87 ft

(c) (i) 80 2

B1 for 80 (± 1)

(ii) 125

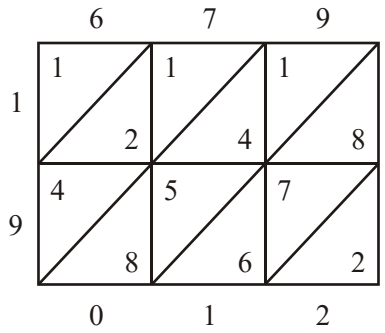
B1 125 (± 3)

[9]

22. 190.12 3

679		28
28		679
5432	or	252
13580		1960
19012		16800
		19012

or



M1 for an attempt to multiply the units and tens, or correct partitioning
M1 complete correct method (condone one arithmetic error)
A1 for 190.12 cao
OR
M1 for putting the numbers in a grid
M1 for multiplying out and addition (condone one error)
A1 answer shown with point
OR
M1 for correct partitioning
M1 679 × 20 and 679 × 8 calculated oe (condone one error)
A1 cao

[3]

23. eg gives an example that demonstrates that the addition of two consecutive numbers can be a square number 4 + 5 = 9 2

B1 shows addition of two consecutive numbers
B1 shows their choice of numbers adds to a square number (do not need to demonstrate it is square)

[2]

24. Area of field = 54.5 × 35.5 (=1934.75)
Cost of field = "1934.75" × 11.44
Perimeter = 2(54.5+35.5) (=180)
Cost of hedge = "180" × 4.81 (=865.80)
Total cost = £22 999.34
So Mrs Fox can buy field & hedge
Mrs Fox can buy field & hedge 6

M1 for either 54.5 × 35.5 or 1934.75
M1 for "1934.75" × 11.44 or 22133.54 seen
M1 for 2(54.5+35.5) or better
M1 for either "180" × 4.81 or 865.8 seen
A1 for 22133.54 and 865.8
B1 ft for making a correct comparison between their total and £23 000

[6]

25. 33 – 19 = 14
14 + 15
29 2

M1 for 33 – 19 or 33 + 15 or 19 – 15 or 14 seen or 48 seen or 4 seen

A1 cao

[2]

26. (i) 10

B1 cao

(ii) 0

B1 cao

(iii) 2

B1 cao

[3]

27. 27 × 55 = 1350 + 135
1485 2

M1 for a fully correct method, (condone one arithmetic error)
A1 cao

[2]

28. (a) 75p + £1.70
2.45 1
B1 cao

(b) 2 × 75p + 1.35
2.85 2
M1 for 2 × 75p + £1.35 or digits 285 seen
A1 for 2.85
(SC B1 for 2.10 or 210p)

(c) £5 – (85p + £1.70)
£5 – £2.55
2.45 2
M1 for £5 – (85p + £1.70) or digits 245 seen (ignore units)
A1 cao
(SC B1 for £5 –"total" correctly calculated)

[5]

29. 5 × 500
= 500 2
B2 for 490 or 500 or 510
(B1 for either 5 or 5.0 or 100 seen)

[2]

30. (a) 97 1
B1 cao

(b) London Reading 1
B1 cao

(c) 41 + 57 + 58
= 156 3
M1 for two of 41, 57, 58
M1(dep) for '41' + '57' + '58'
A1 cao

[5]

31. (a) 3 1

B1 cao allow ± 0.2

(b) −5 1

B1 cao allow ± 0.2

[2]

32. (a) (Pat +) reason 1

B1 correct comment (Pat may be implied)

(b) 21 ÷ 3
7 1

B1 cao

[2]

33. (a) (i) 09 06

(ii) 39 2

B1 (accept 9 06 oe)
B1 cao

(b) 06 55 1

B1 (accept 6 55 oe)

(c) 2h 6min 1

B1 cao

(d) 15 min 2

M1 for 0906 – 0645 – "(c)"
or 0906 – 0645 − 2hr 6min
or 2hr 21min − "(c)" or 2hr 21min − 2hr 6 min
or 141 − 126 or 20 − 5

A1 cao

SC: B1 for 55 or 75 or 93 seen

[6]

34. (a) 2 1

B1 for 2 or –2

(b) 14 1

B1 for 14 or –14

[2]

35. $2 \times 8.50 = 17.00$
$3 \times 4.50 = 13.50$
Total = 30.50

50.00 – 30.50

= 19.5(0) (*p*) 3

M1 for adding 5 correct values
or 2 × 8.50 + 3 × 4.50 (ignore units)
or 30.5(0) or 3050 seen
M1 dep for 50 − "30.50" (ignore units)
*(OR M1 for adding at least 1 adult ticket and at least 1 child ticket **and** subtracting from 50)*
A1 cao
SC: B1 for 24 or 37 or 2400 or 3700 seen

[3]

36. 24.90 ÷ 3 or 8.30 3
24.90 – '8.30'
or $2 \times 8.30 = 16.6(0)$

M1 for 24.90 ÷ 3 or 8.30
M1 (dep) for 24.90 – "8.30" or 2 × "8.30"
A1 for 16.60 or 16.6

[3]

37. (a)

491	107 + 3
~~300~~	110 + 90
107 –	200 + 300

2

393

M1 for decomposing correctly or counting on A1 for 393

(b)

327	327
4 x	327
	327
	327 +

	3	2	7	x
	1 2	8	2 8	4
1	3	0	8	

= 1308 2

M1 for method for multiplying that could lead to a correct answer.
Condone one error in × or in carrying
A1 cao

[4]

38. (a) 1

B1 accept 7:37 or 7:37 am or 7.37 or 7.37 am or 7 37

(b) 10 mins 1

B1 cao

(c) 18 mins 1

B1 cao

[3]

39. (a) (27 – 3) ÷ 2 2

12

M1 for (27 – 3) ÷ 2
A1 for 12

(b) 2 × 5 + 3 2

13

M1 for 2 × 5 + 3
A1 for 13

[4]

40. (a) 75 + 160 1

= £2.35

B1 cao

(b) 70 + 85 + 2 × 135 2

= £4.25

M1 70 + 85 + 2xdigits135 or 0.70 + 0.85 + 2 digits135

A1 cao

(c) 75 + 85 + 135 = 295

500 – '295' 3

= £2.05

B1 for 295 or 2.95

M1 500 – "295" or 5.00 – "2.95"

A1 cao

[6]

41. (a) Glasgow 1

B1 cao (accept –6)

(b) 6 1

B1 cao (accept –6)

(c) 3 1

B1 cao

[3]

42. (a) 89 – 91 1

B1 89 – 91

(b) 110 1

B1 109 – 111 or ft on 200 – (a)

(c) (i) 4.0 – 5.0 2

B1 4 – 5

B1 40 – 50 or ft 200 ÷ (c)(i)

(ii) 40 – 50

[4]

43. (a) 30 1

B1 cao

(b) 45 – (10 + 20) 1

= 15

B1 ft on 45 – '30'

(c) Distance AC is 30

Distance BD is 35

= Josh 2

B1 for 'Josh'

B1 for correct reasoning

(d) 11.00 1

B1 cao

(e) Correct diagram 1

B1 (tol ± 2mm)

[6]

44. 800 ÷ 34 = 24 2

M1 800 ÷ 34 or 23.5 ...seen

A1 cao

SC: B1 23 only on answer line.

[2]

45. (i) 9 – 5

4 1

B1 for 4 cao

(ii) 20 ÷ 10

2 1

B1 for 2 cao

(iii) 7 + 2

9 1

B1 for 9 cao

[3]

46. £1.70 × 5
8.50 1

B1 for 8.50 or £8.50p, but NOT for 8.5 or 8.05

[1]

47. (a) 40 1

B1 cao

(b) 19 1

B1 cao

(c) 5 1

B1 cao

[3]

48. 11.36

B1 cao

22.99

B1 cao

18.00

B1 cao (allow 18)

91.82 4

B1 for 91.82 or f.t. from adding at least 3 item totals
(62.46 + "11.36" + " 18.00")

[4]

49. 1.6 + 8.4
10 2

B2 for 10
(B1 for sight of 1.6)

[2]

50. 30 – (16 + 9)
5 2

M1 30 – "(16 + 9)" or "30 – 16" – 9 or "30 – 9" – 16
A1 cao

[2]

51. (a) 12 1

B1 cao

(b) 24 1

B1 cao

(c) 49 1

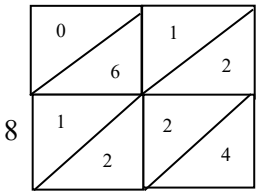
B1 cao

[3]

52. $20 \times 36 = 720$
$4 \times 36 = 144$

	30	**6**	
20	600	120	720
4	120	24	144
	720	144	

3 6



864 3

M1 for a complete method with relative place value correct. Condone 1 multiplication error, addition not necessary.

M1 (dep) for addition of the appropriate elements of the calculation.

[Note: Repeated addition of 24 lots of 36 (36 lots of 24) gets M1 only]

A1 cao

[3]

53. (a) 5.85 + 4.90
10.75 1

B1 for 10.75 cao

(b) 60.55 ÷ 8.65
7 2

M1 for 60.55 ÷ 8.65 or 8.65 × 7 = 60.55 or for at least 4 repeated additions or subtractions of 8.65
A1 for 7 cao

(c) 8.65 + (4.90 + 4.90)
20 – 18.45
1.55 3

M1 for 8.65 + (4.90 + 4.90)
M1 (dep) for 20 – '18.45'
A1 for 1.55 cao
SC: award B1 for sight of 18.45 or 6.45 or 10.20 award B2 for 155

[6]

54. (a) 158 1

B1 cao [SC: B1 for 157 km]

(b) 163 2

300 – 137

M1 for 300 – 137
A1
[SC: M1 for 297 – 137, A1 for 160]

(c) Manchester & Liverpool 1

B1

[4]

55. £2.78 3

2 × 84p + 3 × £1.35 + £1.49
= £1.68 + £4.05 + £1.49
= £7.22
£10 – £7.22

B1 for digits 168 or 405 or 722 seen
M1 for £10 – their total
A1 cao
[SC: £6.32 = B0 M1 A0} with or without working
278 = B1 M1 A0}

[3]

56. (a) Moscow 1

B1 (or –14)

(b) 16 1

B1

(c) –10 1

B1

[3]

57. (a) 4130 1

B1

(b) 0.24 1

B1

(c) 3.83 1

B1

[3]

58. 573.32 4

9872 – 8569 = 1303
44p × 1303

M1 for 9872 – 8569 (or 1303 seen)
M1 dep for 44p × "1303"
A1 for 57332
B1 ft dep on M2 above

[4]

59. 32 3

5 ÷ 0.78 (= 6.41…)
5 – 6 × 0.78

M2 for 5 – 6 × 0.78 OR 500 – 600 × 0.78
(M1 for 5 ÷ 0.78 OR 500 ÷ 78 (consistently) or 6. … seen or 468 seen)
A1 cao

[3]

60. 27.57 or 2757p 3

$367 \times 5.84 + 614$
2757.28
2757p or 27.57

M1 for 367 × 5.84 [= 2143.(28)]
M1 (dep) for "2143.(28)" + 614 or 21.43 + 6.14 (units must be consistent)
A1 for 27.57 or 2757p

[3]

61. (i) Edinburgh and Plymouth

B1 for Edinburgh or –7
B1 for Plymouth or 5

(ii) 12 3

B1 ft from (i) if one positive and one negative

[3]

62. 458.40 3

955	or	48
48		955
7640		240
38200		2400
45840		43200
		45840

M1 for complete correct method
*(condone one **computational** error)*
A2 for 458.40 cao
(A1 for 4584 or ft if M1 awarded)

[3]

63. 177.14 3

$2084 + 15630$

M1 for a complete correct method… allow one computational error
A1 for the digits 17714 or for showing correctly 30 lots of 521 and 4 lots of 521 oe
A1 cao

[3]

64. (a) 25 1

B1

(b) (i) $2 + 3 \times (4 + 5)$ 2

B1

(ii) $(2 + 3) \times (4 + 5)$

B1

[3]

65.

	44	
109		
137		67

3

B3 for all 4
(B2 for 2 or 3 correct)
(B1 for 1 correct)

[3]

66. 123.50 3

39 – 20 (= 19)
19 × 6.50

B1 for 19 seen
M1 for (18, 18.7, or 19) × 6.5
A1 cao
S.C. B2 for 121.55 or 123.5 seen with or without working
B1 for digits 12155 or 1235 seen

[3]

67. 41.37 4

02159 – 01962 = 197
"197"× 21 = 4137p

M1 for 2159 – 1962 or digits 197
A1 for 197
M1 for"197"× 21 or digits 4137
A1 cao
OR
M1 for 2159 × 21 ***and*** *1962 × 21*
A1 for 45339 ***and*** *41202 (or 453.39* ***and*** *412.02)*
M1 for"45339"–"41202"or digits 4137
A1 cao

[4]

68. –2 1

B1

[1]

69. 13.75 4

3 × 5.1 + 4.5 = 198
"19.8" ÷ 1.44

M1 for complete method leading to digits 198
A1 for 19.8 (0) or 1980 as appropriate cao
M1 for"19.8"÷ 1.44 (or ÷ 144 as appropriate)
A1 cao
OR
M1 for ÷ 1.44 or ÷ 144 as appropriate
A1 for 10.625 ***and*** *3.125 (can be rounded up or down)*
M1 for complete method leading to digits 1375 ± 1
A1 cao
(SC: digits 1375 ± 1 = M1 A1 M1 A0)

[4]

70. 14 4

990 ÷ 69 = 14.3…. or 14 rem 24

Method 1 – Everything excluding long division
M2 for a valid method with no errors… need to see 966 or 1035
(M1 for a valid method, including estimation, that reaches an answer between 901 and 1099 inclusive. Ignore errors.)
A2 for 14 with a fully correct method
(A1 (dep on 1st M1) for an answer between 14 and 15 inclusive. Ignore errors. Cannot have used estimation.)
Note: Estimation can only score a maximum of M1 unless accompanied by another method or 966 or 1035 see (award M2)
Method 2 – long division method
M2 for 990 ÷ 69 = integer answer between 12 and 19 inclusive and rem 30 seen
(M1 for 990 ÷ 69 with 1 in tens column.)
A2 for 14 with fully correct method
(A1 (dep on 1st M1) for an answer between 14 and 15 inclusive.)

[4]

71. 32 2

56 ÷ 7 × 4

M1 for 56 ÷ 7 × 4
A1 cao

[2]

72. (a) 1.22 3

£5.95 + £1.62 + 25p + 2 × 48p = £8.78

M1 for 3 of £5.95, £1.62, 25p, 48p oe seen with clear intention to add
A1 for £8.78
A1 ft from "8.78"

(b) 14 2

160 ÷ 12 = 13.(333…)

M1 for 160 ÷ 12, or 12 × 13 or 12 × 14 or 13 or better
A1 for 14 cao

[5]

73. Either
35.50 ÷ 1.42 = 25; 26.99 – 25 = £1.99
Cheaper in the USA
Or
26.99 × 1.42= 38.33;
38.33 – 35.50 = $2.83
Cheaper in the USA 3

M1 35.50 ÷ 1.42
A1 25 seen
B1ft (dep on M1) for £1.9 9 with conclusion; units needed
OR:
M1 26.99 × 1.42
A1 38.33 or 38.32... seen
B1 ft (dep on M1) for $2.83 or $2.82 with conclusion; units needed

[3]

74. 7 3

48 – 4×5 (= 28)
"28" ÷ 4

M1 for 48 – 4 × 5 oe
M1 for "28" ÷ 4
A1 cao

[3]

75. 2.77 1

B1

[1]

76. £6.62 3

4 × 56 + 114 (= 224 + 114)
10.00 – "3.38"

M1 for 4 × 56 + 114 or 4 × 0.56 + 1.14
M1 for 10.00 – "3.38" or 1000 – "338"
A1 cao

[3]

77. (a) (i) – 8 2

B1 cao

(ii) 15

B1 cao

(b) 5/8 oe 2

7/8 – 2/8

M1 for correctly writing both fractions to a common denominator
A1 for 5/8 oe

[4]

78. (a) 1230 3

B1

(b) 36

B1

(c) 1223

B1

[3]

79. (a) 27 1

B1 accept – 27

(b) 10 1

B1

[2]

80. 1.32 2

$4 \times 0.92 = 3.68$
$5 - 3.68$

M1 for valid method to reach £1.32 (or digits 132 seen)
A1 cao
sc M1 for digits 368 seen and an implied subtraction from £5 oe

[2]

81. (a) – 4 1

B1

(b) 300 2

330 – 30

M1 for "330" – "30" (condone one arithmetic error)
A1 cao
[SC B1 for 360]

[3]

82. 25 or 24.99 3

25 + 14 (= 39)
"39" ÷ 1.56

M1 for 25 + 14 or 39 seen
M1 for "39" ÷ 1.56
A1 for 25 cao
[M2 A0 with or without working, for digits 25 seen as answer]
[or M1 for 25 ÷ 1.56 or 14 ÷ 1.56
M1 for adding these two answers
A1 for 25 or 24.99]
S.C. M1 for 25 × 1.56 + 14 × 1.56 or 39 + 21.84 or 60.84 seen

[3]

83. (a) 72.96 4

2658 – 2430 = 228
"228" × 32

M1 2658 – 2430
A1 228
M1 "228" × 32 or "228" × 0.32 or digits 7296 seen
A1 cao
Or
M1 for 2430 × 32 (or digits 77760 seen) or 2658 × 32 (or digits 85056 seen)
A1 if 1 correct
M1 for "85056" – "77760" or 7296 seen
A1 cao

(b) (i) 80 2

B1 for 80 (± 1)

(ii) 125

B1 for 125 (± 3)

[6]

84. (a) 21 2

$60 \div 28 = 21.42857$

M1 for 60 ÷ 2.8 oe (or 21.4 … or 22 seen)
A1 cao

(b) 32 3

$\frac{20}{100} \times 40 = 8$

$40 - 8$

M1 for 20 ÷ 100 × 40 oe
A1 cao for 8 cao
A1 ft (dep on M1) for 40 – "8" evaluated correctly

[5]

85. $25 \times 6 = 150$
$89 \times 2 = 178$
$109 \times 1 = 109$
$1000 - (\text{"150"} + \text{"178"} + 109)$
5.63 3

M1 for 6 × 25 (= 150) or 2 × 89 (= 178) or 437 seen
M1 (indep) for 10 – ("1.50" + "1.78" + "1.09")
or 10 – "4.37" in pounds or pence
A1 cao

S.C. digits 563 scores B1 M1 A0 with or without working 7.77 scores B0 M1 A0 with or without working

[3]

86. 2.46 + 3.08 + 2× 5.95 (= 17.44)
20 – "17.44"
2.56 3

M1 for 2.46 + 3.08 + 2 × 5.95 or digits 1744
M1 (indep) for 20 – "17.44"
A1 cao
[SC M2A0 for digits 256
M1A0 for 8.51]

[3]

87. 33 – 19 = 14
14 + 15
29 2

M1 for 33 – 19 or 33 + 15 or 19 – 15 or 14 seen or 48 seen or 4 seen
A1 cao

[2]

88. (i) 10 2

B1 cao

(ii) 2

B1 cao

[2]

89. (a) 75p + £1.70
2.45 1

B1 cao

(b) £5 – (85p + £1.70)
£5 – £2.55
2.45 2

M1 for £5 – (85p + £1.70) or digits 245 seen (ignore units)
A1 cao (SC B1 for £5– "total" correctly calculated)

[3]

90. $4.50 + 1.35 + 2 \times 0.55$ (= 6.95) 3
$10.00 - \text{“}6.95\text{”}$
= £3.05

M1 for 4.50 + 1.35 + 2×0.55 (= 6.95)
M1 for 10.00 – “6.95”
A1 cao
(SC B2 for 3.60)

[3]

91. 362 3
× 54
1448
1810(0)
19548

	3	6	2	
1	1 / 5	3 / 0	1 / 0	5
2	1 / 2	2 / 4	/ 8	4
1 9	5	4	8	

300	60	2	×
15 000	3 000	100	50
1 200	240	8	4

For traditional method
M1 for digits 1448 or 1810(0) seen, condone one error in multiplication
M1 for multiplying by 50 or 18100 seen
A1 cao for 19 548

For Napier's Bones
M1 for correct structure
M1 for cell contents correct, condone 1 error in mult.
A1 cao for 19 548

For partitioning method
M1 for correct partitioning of 300, 60, 2 or 50, 4
M1 for cell contents correct, condone 1 error in mult.
A1 cao for 19 548

[3]

92. 16.24 1

B1 cao

[1]

93. (a) 25 1

B1 cao

(b) 7 1

B1 for 7 or 7 and –7 or ±7 or –7 alone

(c) 13 1

B1 cao

[3]

94. $\frac{30 \times 4}{0.2}$
= 600 3

M1 for 2 values rounded correctly to 1 sig fig
M1 (indep) for a correct method to divide by a decimal
(eg $\frac{30 \times 4 \times 10}{0.2 \times 10}$*)*
A1 cao

Sight of $\frac{120}{"0.21"}$*, with no working, would imply that 29.8 and 4.1 have been correctly rounded to 1 sig. fig. for the award of the first M1.*
Sight of 150 × "4.1" (or "29.8" × 20) would imply that two of the three numbers have been correctly rounded to 1 sig. fig. ***and*** *correct division by a decimal and so M2 could be awarded.*

[3]

95. E

[1]

96. D

[1]

97. D

[1]

98. E

[1]

99. 10 – (2.45 × 3
10 – 7.35

Alternative:
10 – 2.45 = 7.55
7.55 – 2.45 = 5.10
5.10 – 2.45

2.65 3

M1 for 2.45 × 3 oe
(for example 2.45 + 2.45 + 2.45) or 7.35 seen
M1 (dep) for 10 – "2.45 × 3" oe
A1 cao (accept 2,65)
Alternative:
M1 for 10 – 2.45 or sight of 7.55
M1 (dep) for "7.55" – 2.45 – 2.45
A1 cao

[3]

100. D

[1]

101. B

[1]

102. D

[1]

103. $3.95 + 1.80 + 2 \times 0.40 = 6.55$

$10 - \text{“}6.55\text{”}$

3.45 3

M1 for 3.95 + 1.80 + 2 × 0.40 or 6.55 seen
M1 (dep on use of two prices from list for “6.55”) for 10 – “6.55”
A1 cao

Alternative method
M2 for 10 – 3.95 – 1.80 – 0.40 – 0.40
(M1 for 10 – any two prices from original list)
A1 cao
(SC: (Only 1 pen) award B2 for answer of 3.85
or 345 seen award M2)

[3]

104.

745	23
×23	×745
2235	115
14900+	920
17135	16100+
	17135

	7	4	5	
1	1 / 4	0 / 8	1 / 0	2
7	2 / 1	1 / 2	1 / 5	3
	1	3	5	

	700	40	5	X
	14000	800	100	20
	2100	120	15	3

14000 + 800 + 100 + 2100 + 120 +15 = 17135 3

M1 for a complete method with relative place value correct, condone 1 multiplication error, addition not necessary.

M1 intent to add. (dep on 1st M1)

A1 cao

OR

M1 for a completed grid condone multiplication error, addition not necessary.

M1 intent to add. (dep on 1st M1)

A1 cao

OR

M1 for sight of a complete partitioning method, condone 1 multiplication error, final addition not necessary.

M1 intent to add. (dep on 1st M1)

A1 cao

[SC: M1 only for a list of 23 lots of 745]

[3]

105. 29.00 3

B1 (accept 29)

6.00

B1 (accept 6)

68 (.00)

B1 ft for 39 + "29"

[3]

106. (a) 3 1

B1 for 3 or + 3

(b) –8 1

B1 for –8 cao

(c) –8 1

B1 for –8 cao

[3]

107. (a) 9

B1 (accept Cape Town)

(b) 8

B1 (accept –8)

(c) –1

B1 cao

[3]

108. 33.20 ÷ 40 = 0.83

$$40\overline{)3320}\quad 83,\ 320,\ 120$$

83p or £0.83 3

M1 for 33.20 ÷ 40 or 3320 ÷ 40 or a valid partitioning method
A1 for sight of the digits 83
B1 ft for "cost of 1 litre" correctly written as money
SC B1 for sight of £1.20

[3]

109. 8.57 – 8.11 = 46
46 × 12 = 552
5.52 4

M1 for 8:57 – 8:11 or 57 – 11 or 46 seen or evidence of counting on from 8:11 to 8:57 accept 8:11 – 8:57
M1 for "46" × 12
A1 cao for digits 552
B1 ft for "5.52"

[4]

110. 1.99 + 1.99 = 3.98
5 – 3.98 =
1.02 2

M1 for 2 × 1.99 or for 5 – 2 – 2
A1 for 102(p) or for £1.02
SC B1 for £1.2 or £1.2p

[2]

111. (a) –5, –1, 0, 3, 8 1

B1 for –5, –1, 0, 3, 8 cao

(b) 7 + 15
22 1

B1 for 22 cao

[2]

112. 28.80 ÷ 30 = 0.96 3
96p or £0.96

M1 for 28.80÷30 or valid partitioning method, allow one arithmetic error
A1 for sight of 0.96 or 96
B1 ft for their cost of one litre correctly written as money

[3]

113. C

[1]

114. C

[1]

115. A

[1]

116. explanation 1

B1 for explanation with Bidmas
e.g. Brackets needed (15 – 3) or Answer should be 9
Note:- brackets needed is insufficient

[1]

117. A

[1]

118. B

[1]

119. A

[1]

120. 34 – 15 + 17
36 2

M1 34 – 15 + 17 or 34 + 2 or 34 + 17 – 15 oe or sight of 19 or 51
A1 cao (accept if 36p seen)
B1 SC for 2 seen as their answer

[2]

121. C

[1]

122. D

[1]

123. A

[1]

124. (a) 207 2

M1 for a valid method (condone one error) or sight of 7 (as units) in working or answer OR '193 + 7' + 200 or '193 + 200' + 7
A1 cao

(b) –5 1

B1 cao

(c) –15 1

B1 cao

(d) 6 1

B1 cao

[5]

125. (a) Edinburgh 1

B1 for Edinburgh or –7

(b) 5 1

B1 cao

(c) Leeds 1

B1 for Leeds or –6 to 3 or 9 or –9

[3]

126. (i) $\frac{10}{100} \times 7200 = 720$ 2

M1 for $\frac{10}{100} \times 7200$ *oe*
A1 (accept 720.00 or 720.0)

(ii) 7200 – 720 = 6480 1

B1 ft from (i) for 7200 – '720'

[3]

01. Full marks were awarded quite regularly and much more credit could have been given if candidates had shown their working. Even if the final answer were wrong, 3 of the 4 marks could be scored for the costs of the separate items; if one of these were incorrect, the problem was usually with finding $\frac{1}{2}$ of 72.

A substantial number of candidates simply added 72p, 24p and 25p and then found the change from £5.

02. This was very well answered, full marks often being gained. It was noticeable that, after answering part (a)(i) correctly, some candidates gave 13 as the answer to part (ii), even when they had drawn a number line. Presumably, they had counted the numbers instead of the steps. The difference between two numbers is regarded as a strictly positive number and so an answer of – 12 received no credit.

03. Overall, only a minority of candidates were able to make a meaningful attempt at either part. Those who could, attempted a wide variety of methods in the first part but many made too many computational errors to earn any marks. Methods for evaluating 48 × 9.95 instead of 48 × 9.55 appeared regularly, as did the answer £696, transferred from part (b). In the second part, a small minority completed formal long division accurately but trial and improvement methods were more common. As always, these received credit only if they led to a correct answer. Some misinterpreted the information in the question, thinking the price had remained unchanged at £9.55.

04. As usual time questions are often misunderstood by Foundation Tier candidates. About 75% of candidates were able to give correct answers to parts (a) and (c).
In part (b), candidates often found the time taken to travel from Coventry to London, rather than Crewe to London. Many candidates did not appreciate that a length of time should be written in hours and minutes rather than using the same notation as that used in stating a time – i. e. '2 hours, 45 minutes' rather than '2:45' or '2.45'.

05. Mathematics A

Paper 2

Many candidates found this multi-step question difficult. Lack of working limited the marks that most candidates scored. In part (a) 5 was often seen which scored 1 mark. In part (b) relatively few candidates scored any marks. Most found it difficult to find 5% of 269.30, of those candidates who did obtain the correct answer a significant number did not round the answer correctly and lost the final accuracy mark.

Paper 4

This was a well-answered question. In part (a) most candidates subtracted £56.80 and then divided the result by £42.50 to get 5 extra hours. A significant minority forgot to add on the first hour and so lost the second mark. Repeated addition was a common approach used by candidates who scored low marks overall on the paper. Part (b) was a good discriminator and the better candidates gained full marks. Those finding 95% of the total were usually successful although some gave the answer as £255.835 and lost the accuracy mark. Some took a more complicated route by first finding 5% of each hourly rate and often failed to gain the accuracy mark due to premature rounding or truncation of values. A number of non-calculator methods were seen (e. g. finding 5% by halving 10%) but this solution process was inappropriate on a calculator paper and candidates using such an approach usually made errors of approximation in their working.

Mathematics B

Paper 15

In Part (a) the value '6' frequently appeared with no evidence of working as did the value '5' where candidates had failed to add in the first hour's work. Others offered considerable working as they struggled to cope with the subtraction and then the multiplication (or repeated addition) of 42.5. The most common incorrect answers resulted from 269.3 ÷ 56.8 or 269.3 ÷ 42.5
In part (b) it was rare to see a fully correct amount. Quite a few candidates could get to 13.465 but left that as the answer. There was a large amount of incorrect attempts made to try to calculate 5% of £269.30

Paper 17

This question was very well done with many candidates gaining maximum marks. In part (a) the method shown in the mark scheme was the most common method employed, although many used repeated addition or subtraction, working out the cost hour by hour. Both methods were successful however an answer of 5 hours was often seen where candidates had failed to include the 1st hour. A minority used £56.80 as the hourly rate.
In part (b) the majority of candidates were able to work out 5% of a sum of money. The usual mistake occurring here was of premature approximation, which led to inaccurate answers. Quite a few candidates left their answer as £255.835 and lost the final accuracy mark.

06. There were surprisingly few totally or partially correct responses to this question. The vast majority of candidates doubled rather than squared 4·1 and went on to give the incorrect answer '8.774'. It seemed that few candidates were using the 'brackets' and 'squaring' features often available on calculators. Most candidates did write down all the figures from their calculator display as requested.

07. This question was well answered, but some candidates lost marks when they rounded the result on their calculators (unnecessarily).

08. Candidates at the foundation tier find the processes of long multiplication and long division difficult to master. It was interesting to see a much wider range of methods being adopted to answer this question.

(a) Students coped far better with this question than compared with previous years. A range of methods was seen, long multiplication and Napier's bones being the most common. About 10% of students achieved full marks and 30% achieved partial marks for fully viable methods.

(b) This part was less successful. Again a large range of methods were seen, the most common being compensation and chunking. Compared to the previous year students were much more successful and about 14% of responses were fully successful.

09. Mathematics A Paper 1

This question was well understood by candidates and nearly 70% of candidates obtained full marks.

Mathematics B Paper 14

Identifying the highest temperature produced an almost unanimous correct verdict with only a few hiccups in identifying the lowest temperature in (b)(i). The difference in the temperature was generally correct (85% of candidates) but in (ii) some found the difference in time giving 4 as their answer. Only 64% got (b)(ii) correct. For part (c) a significant number came up with the correct answer of −7 (65%) although the alternative responses were somewhat difficult to relate to the question being asked.

10. In part (a), many candidates included only one pen in their calculation with the result that an incorrect answer of £1.70, which was awarded 2 marks out of 3, appeared more often than the correct answer of £1.22.
Similarly, in part (b), an incorrect answer of 13, obtained by rounding 13.3 (160 ÷ 12) down instead of up, probably appeared almost as often as the correct answer.
In part (c), incorrect money notation e.g. £170.8 was penalised and answers such as £170.08 could receive no credit, unless accompanied by working.

11. **Mathematics A**

Paper 2

The success rates on each of the first four parts varied considerably within centres. The first two parts were quite well answered, although 13 38 appeared frequently in part (b). 83 (1519 – 1436) was a common wrong answer to part (c) and it was possible to obtain the correct answer (24) in part (d) using this incorrect approach (107 – 83). In such cases, no marks were awarded. Errors were rare in parts (e) and (f).

Paper 4

This was a good question to start the paper, as many candidates had little difficulty in attempting the question. Use of the protractor caused inevitably problems for some. There were more errors in drawing the angle inaccurately in part (a), though reading off using the wrong scale was an obvious error in part (b) with answers of 115° to 117°.

Mathematics B Paper 15

Parts (a) and (b) were answered well by nearly all candidates. In (b) the most popular incorrect response was 13 38. Here candidates did not read the question correctly and gave the time of the last train to leave Stockport before 2 pm.
There were not many correct responses to parts (c) and (d). Many candidates failed to show any working, whilst others tried to find the difference between the two times by doing a subtraction sum of 107 – 83, assuming that the times were in base 10. Similarly, the incorrect response of 83 in part (c) was frequently seen.
Parts (e) and (f) proved to be good confidence building questions with many fully correct responses.

12. The first part was well answered but, in the second part, many candidates calculated the cost of filling the tank from empty while a smaller number calculated the cost of 7 litres of petrol ($\frac{1}{4}$ of a tank). Such attempts scored 1 mark out of 3.
In part (c), both scales were often read correctly, although the decimal point was sometimes omitted in part (ii).

13. Mathematics A Paper 2

The first part was very well answered, although the evaluation of $4 \times \frac{1}{2}$ caused some problems, resulting in answers such as 28.5.
In part (b), many candidates gained either 2 marks for the correct answer or 1 mark for 42.25 (15 + 27.25). Popular wrong answers were
31.122 ($\sqrt{15}$ + 27.25) and 5.22 ($\sqrt{27.25}$). There was occasional confusion between finding the square root and halving.

Mathematics B Paper 15

In part (a) there was generally little or no working. As a result the method mark was seldom awarded when the answer was incorrect. $28\frac{1}{2}$ was a common incorrect response with candidates multiplying 7 by 4 and then adding on the extra $\frac{1}{2}$. Candidates are to be encouraged to write down the numbers they press on their calculators as writing $7\frac{1}{2} \times 4$ would have earned them one method mark.
There were some good responses to (b) although many candidates just added the two numbers and then failed to find the square root, resulting in an answer of 42.25. Others found the square root of 15 and added 27.25 to this, giving an answer of 31.12.

14. Mathematics A Paper 3

There were some very good answers by candidates using a variety of methods and it was pleasing that many of responses were easy to follow. More than half of the candidates gained at least two of the three marks. The traditional method of long multiplication was very popular and was often used successfully although simple arithmetic and place value errors were quite common and some candidates had difficulty inserting the decimal point correctly. Those who partitioned 26, often into 10+10+6, or 32.9 into 32+0.9 tended to make mistakes in their calculations, as did those who attempted to use a grid. Candidates using these methods were often unable to multiply by 0.9 correctly.

Mathematics B Paper 16

Nearly one half of the candidature demonstrated an ability to offer a complete method for solving this question. Unfortunately poor arithmetic (usually 9 × 6) often lost marks. The most common methods employed were the traditional long multiplication method and the Gelosian method; however errors in place value were often seen. The build-up method was often incomplete and a significant number of candidates worked out 33 × 26 and then failed to correctly subtract 0.1 × 26 (858 – 0.26 was the usual mistake). One arithmetic error was condoned, if the method was correct, and this enabled some to gain one accuracy mark in dealing with place value correctly.

15. Part (a) was answered well with many candidates gaining 2 or 3 marks. The most successful candidates were those who used the conventional method of long multiplication. Candidates using build-up methods often made mistakes with place value or forgot to deal with part of the calculation. The working of these candidates was sometimes difficult to follow. In part (b), the majority of candidates realised that they needed to divide 2730 by 65 but less than half carried out this division successfully. Correct use of the long division algorithm was rare and some of those who obtained the correct answer showed little working. Many candidates used build-up methods. These frequently contained addition errors and even where they reached 2730 the number of 65s was often lost.

16. Many candidates were unable to work out what calculations were required and only a quarter found the correct total charge. Having calculated 2% of 60000 some candidates then went on to find 1% of 80000 and others subtracted the result from 60000 and found 1% of the remainder. Some tried to find 3% of 80000. A significant number of candidates showed little understanding of place value and it was not uncommon for 1% of 60000 to be given as 6 or 60 or 6000.

17. There was evidence of a better understanding of multiplication than in previous years with fewer conceptual errors, although errors with multiplication tables were quite common. The most successful methods were the traditional one and Napier's Bones. The grid method, although popular, had a lower success rate, as candidates multiplied by 2, 8 and 6 instead of 200, 80 and 6. The success rates on less popular methods, such as partitioning, were even lower. The most common wrong answer was 2002 ($3 \times 286 + 4 \times 286$).

18. The quality of answers to the first part varied widely, some, such as 15 90, exposing a lack of understanding of time notation in general and the 24 hour clock in particular. For candidates switching to the 12 hour clock, 4 30 pm was accepted but 4 30 was not. In the second part, many candidates made little headway in working out $\frac{1}{4}$ of £33.56 and did not even score the one mark available for showing that they appreciated that this was equivalent to £33.56 ÷ 4. Clear attempts to halve £33.56 twice also received this method mark. Trial methods were common and were usually doomed. The mark for (b)(ii) could still be gained if the candidate correctly rounded up their, perhaps wrong, answer to part (i) but most rounded to the nearest pound.

19. (a) 75% of candidates gained full marks for this question, mostly without showing any working. Candidates not using the correct prices caused the most common errors. If no working was shown it was a pity that part marks could not be awarded.
(b) 53% of the answers to this part of the question were correct. A good proportion of candidates used a trial and improvement method rather than division. Some candidates multiplied the two numbers 20 and 2.60 whilst others did not give a whole number answer.
(c) 56% of candidates answered this part correctly. £95 was a common incorrect response – presumably some candidates had taken £25 off £120. Allowance was made for candidates who took £30 from £120 and wrote down £90 as their answer.

20. Candidates found this question difficult. Part (a) was answered correctly by 87% but parts (b), (c) and (d) were only answered correctly by about 33% of candidates.

21. (a) About 34% candidates were able to find the number of miles travelled during the day and go on to calculated expenses paid, though a significant proportion added rather than subtracted the distance readings. To candidates' credit, some working was often shown and so part marks could be awarded if the final answer was incorrect. Only 36% of candidates scored no marks.
(b) This part of the question was answered less successfully than the previous part, with some candidates making no attempt. Only 15%gained all three marks and a further 10% gaining one or two marks. A significant proportion of the answers seen were 58 indicating that the candidate may not have read the question carefully enough. Those candidates gaining full marks usually calculated 2/5 of the distance and subtracted their answer from 145 rather than using the fraction 3/5.
(c) This part was well understood with 96% obtaining the correct answer to (i) and 74% reading the graph in reverse.

22. **Specification A**

Candidates continue to offer a wide range of methods for long multiplication. Tradition methods are in the majority, but the "napiers bones" grid method remains popular (and in most cases successful). Less successful are the various partitioning methods that are becoming more popular; in most cases candidates fail to organise their work sufficiently well to provide any clear evidence of a complete method. It was very encouraging to see candidates attempting a method such as £6.80 × 28 or £6.79 × 30, but frequently they were then confused by what subsequent calculation was needed to form a subtraction. Whatever method was used, most candidates at this level did demonstrate understanding of the need to treat multiplication by tens and units separately. Sadly many then went on to make mistakes in multiplying digits: 7 × 8 causing the most problems.

Specification B

There were many different methods demonstrated in answering this problem testing long multiplication. In all of them arithmetic mistakes, rather than conceptual misunderstanding, was the major cause for loss of marks. Errors tended to be in the multiplications; 6 × 8, 7 × 8 and 9 × 8 although addition errors were not uncommon.
The most successful method remains the traditional long multiplication approach, although multiplication by 20 was often inaccurate with the omission of the zero. Partitioning often led to mistakes. Some candidates continue to employ repeated addition methods which usually result in arithmetic error. It was common to see addition of 4 lots 6.79 followed by multiplication by 7. The use of Napier's bones is still common but often attempts were undone by slanting the diagonals the wrong way resulting in completely incorrect answers

23. The majority of candidates understood the meaning of consecutive numbers. Many scored full marks, but a significant number misunderstood what was required, and aimed for a square number by a different method eg 2 + 7 = 9.

24. Many candidates found this unstructured question a difficult one to work through but, even so, about one quarter managed a completely correct solution. Many candidates worked out either the area or the perimeter and multiplied this by both £11.44 and £4.81, but a significant number calculated both the area and the perimeter and multiplied these by the correct amount. Unfortunately some divided by the cost. Some candidates calculated the cost of the hedge for each side rather than using the perimeter of the field but sometimes used only two sides. Most candidates made a correct comparison between their total and £23000. Often, good candidates rounded values within their working and lost the necessary accuracy.

25. It was pleasing to see that most candidates were showing working and many scored method marks for 33 – 19 shown, with over 85% of the candidates scoring at least one mark. However, a common incorrect response was 41 achieved by 33 + 19 = 26 and 26 + 15 = 41.Others had problems with the arithmetic involved, often getting 24 as the difference between 33 and 19. Around 70% of the candidates went on to get the correct answer of 29.

26. It was evident that candidates worked from left to right in the first two parts. Where this coincided with 'BIDMAS', as in part (i), nearly all candidates obtained the correct answer. However, where this was not the case, as in part (ii), only 10% obtained the correct answer! In the third part, over 60% realised that the brackets should be calculated first and reached the correct answer of 2.

27. **Specification A**

A variety of methods were used to calculate the product of 27 and 55. Candidates were able to access the first mark by employing any valid method with one arithmetic error allowed. Despite this, nearly two thirds of the candidates were unable to score any marks on this question, although most realised that a multiplication sum was needed. Those that tried the 'traditional' method of long multiplication often missed out the zero when multiplying by 50. Others obtained 1350 and 135, but then failed to align them correctly and ended up with 2700. Many tried to partition either the 55 or the 27 but then failed to partition correctly. Those that used the Napier's Bones method generally scored at least 1 mark.

Specification B

Only one quarter of candidates earned the 2 marks available for the multiplication of the 2 digit numbers. A partitioning method proved to be by far the most popular method used by unsuccessful candidates, but few organized their work sufficiently clearly to provide evidence of a complete method and so they failed to gain any credit for their work. Very few attempts to use the "napiers bones" grid method or the "box method" were seen. In the past these methods have been more popular and have had a higher rate of success. The traditional method for long multiplication was sometimes attempted but was very rarely successful. The answer £1035 obtained from (50 ×20)+(5 × 7) was often seen.

28. The context of this question was well understood by all candidates and more than 85% of candidates were successful in all of the three parts. Those candidates who lost marks mostly failed to mark the decimal point and working was very rarely seen. Marks were often lost in part (c) where candidates were unable to subtract correctly from £5.00. The attempts were often made without using a calculator.

29. In this question, many candidates attempted to find an accurate answer rather than an estimate. The candidates who were most successful gave the answer 500. Some attempted to find 5 lots of 98 by addition but not always successfully. Some found 500 and then tried to adjust a bit. Those who tried to calculate 5.1 × 100 made more errors because of dealing with the decimal and often reached answers in the thousands.

30. Candidates achieved good success with part (a) but more limited success with reading the table in reverse to identify the cities that are the shortest distance apart. Part (c) was only correctly attempted by about a third of candidates. Candidates often used only two correct distances, for which they received some credit and sometimes 4 distances were used. There were frequent addition errors, which made this a question that candidates found very hard.

31. This question was well understood and well answered by all candidates. Part (a) was almost always correct but they were slightly less successful in part (b) where the negative sign was omitted or candidates added 8° rather than subtracting it.

32. In part (a) Beth was the most common response given by candidates with left to right working showing why. Only about 1⁄4 of responses were correct with correct working. It was good to see a significant number of candidates justifying the answer by explaining that multiplication had to be done first. Part (b) was almost always correct.

33. Almost 90% of candidates were able to use the timetable to find the arrival time of the train in part (a)(i) but under 50% were able to work out the time to travel between stations in part (a)(ii).

Just over a half of candidates successfully worked out the correct time taken for the 07:05 train from Manchester to reach London in part (c). 2 hours 16 minutes was often seen suggesting that candidates had added the 5 and 11 in the two times rather than subtracting one from the other.

Part (d) of the question proved to be a good discriminator between candidates. A significant number of candidates worked out the time taken between stations by the 06:45 train and left this as their answer. Only about one quarter completed this part successfully. There was evidence of a fair number of candidates treating the times as decimal numbers and carrying out calculations for the difference in times accordingly.

34. The first part of this question, which demanded candidates to work out the difference between two negative integers, attracted a high proportion of correct answers. However, the second part which required the candidate to work out the difference between a negative integer and a positive integer was less well answered. Some candidates clearly found the larger “gap” between the numbers more difficult to deal with.

35 Many candidates lost marks in this question because they failed to show any working before recording their (incorrect) answer on the answer line. Some candidates worked out the cost of tickets but did not go on to find the change received. They could only score 1 mark for this. £19.05 and £19.95 were common incorrect answers, often without working. These answers suggested that the candidates understood the correct sequence of calculations needed in this question but were unable to carry them out with accuracy. Candidates who wrote down their method clearly could score two out of the three marks available here. However, a good proportion of candidates’ working consisted of a jumble of numbers with no clear intended method. A surprising number of candidates based their calculations on 1 adult and 1 child or 2 adults and 2 children. Some credit was allowed if the working was clearly shown.

36. This question was well attempted but fewer candidates than expected gained full marks. Many candidates calculated one third of £24.90 as £8.30 and then either made an error when subtracting this amount from £24.90 or did not subtract it at all. Some could not divide £24.90 by 3 correctly. Disappointingly, a large number of candidates thought that one third is the same as 30% or that one third of a quantity is found by halving twice.

37. Candidates understood what they had to do but often made silly mistakes in carrying from 500 to deal with subtracting the 107. 407 was a very common wrong answer. In part (b) candidates gained a few more marks often from adding 327 four times.

38. Candidates understood the concept of timetables and frequently this question was fully correct. They sometimes fell down when finding the difference between two times.

39. This question was poorly answered with about half the candidature gaining some success in part (a) though there were very few correct answers to part (b).

40. Answered well by most of the candidates – they often gained all six marks. Many candidates showed little or no working. Those candidates who didn't score full marks and showed their working often picked up marks for correct method. For example, many answers of "£2.10" were seen in response to part (c). With working candidates could still earn 2 of the 3 marks available. Without working no credit could be given. A significant number of candidates misread parts of this question, choosing incorrect items from the list. These candidates could sometimes be awarded partial credit.

41. This was a well answered question leading to more than a half of candidates gaining all 3 marks. A small proportion of candidates gave Cardiff as the city with the lowest temperature in part (a) and "4" was commonly seen as the difference in temperatures in part (b). In the last part of the question "11" was the most commonly seen incorrect answer.

42. About four fifths of candidates could correctly identify "90" as the reading on the scale and also work out the number of litres added. Most of the incorrect responses seen in part (a) were "85". In part (c) under 1% of candidates were able to state the number of litres in a gallon, but to their credit many candidates gained a follow through mark for using their answer to (c)(i) correctly in part (c)(ii).

43 Most candidates scored well on this question, with the first four parts being answered successfully by a majority of candidates. Some candidates gave the answer "10" to part (b), maybe because in the diagram, the line segment between Corting and Deetown is about the same length as the line segment between Alston and Beeham. Part (e) on use of scale and accurate measurement proved to be more of a challenge to most candidates. Only a small proportion were able to place both Beeham and Corting accurately on the diagram.

44. The correct answer "24" was given by a significant number of candidates, with a similar number giving their answer as "23". Evidence seen suggested that the latter was usually obtained by truncating their answer to "800 ÷ 34". Examiners were able to award one mark here.

45. It was not surprising that part (i) was answered with the most success. In part (ii) about three quarters of candidates were successful. The two most common incorrect answers were 0.5, from 10 ÷ 20, and 10, from 20 – 10. Part (iii) was answered less well with only one third of candidates carrying out the two operations in the correct order. Most incorrect answers resulted from candidates doing the addition first and then attempting to divide 15 by 4.

46. The purpose of this question was to assess the candidate's ability to interpret a calculator answer (8.5) in the context of money notation. Most earned the mark, with 8.5 and 8.05 being given as the most common incorrect answers.

47. This question differentiated well between candidates with the great majority achieving the marks in parts (a) and (b). Some candidates put their own brackets in part (b) and gave the answer 27. Only a third of candidates were able to give the correct answer to part (c). 45 was a more commonly seen answer here.

48. This was generally well done with around two thirds of the candidates scoring all 4 marks, although all the working around the edges of the table did suggest that many candidates did not have access to a calculator. A common incorrect response for the cost of one brake pedal was £22.49 Quite a few candidates were confused by the labour charge, either leaving it out altogether or not adding it into their total. Fortunately, the final total was a follow through mark so most candidates scored here.

49. Although the correct answer of 10 was often seen (in 54% of the cases), there were many who just wrote 10.96 (the sum of 2.56 and 8.4) or 3.31 (the square root of 10.96). Others wrote 14.9536 ($= 2.56^2 + 8.4$).

50. **Specification A**

Most candidates were able to score full marks on this question, many without showing any working. Failure to achieve full marks was usually a result of arithmetic error.

16 + 9 = 24 and 30 – 25 = 15 and also 30 – 25 = 4 were common errors.
Some candidates failed to subtract, giving their sum of A and B as the answer and some gave the answer 3.2 from actually measuring part C of the diagram.

Specification B

This question was done well by most candidates. Common errors include: incorrectly adding the 16 and the 9 to get 24 and subtracting this correctly from 30 to get 6; incorrectly subtracting 25 from 30 to get 15; measuring the length of part C; subtracting 9 from 16 (only) to get 7.

51. Answers to part (a) were usually correct. In part (b), many ignored the order of operations (BODMAS) and simply worked from left to right to give an incorrect answer of 60. In part (c), many candidates were unable to correctly compute 7 × 7; answers of 42 and 56 were common.

52. **Specification A**

This long multiplication question was pleasingly well done with very many candidates gaining some marks; often 2 or 3. Those candidates using 'traditional' long multiplication methods were usually successful although simple arithmetic error or place value error was not uncommon. Many candidates chose a 'multiplication table' method, often getting just one cell incorrect, for example 20 × 30 = 60 or 6000 or 500. The 'Napier bones' method was also seen and was often successful when the structure of the table was correct.

A common incorrect answer seen, gaining no marks, was 624 (20 × 30 + 6 × 4).

There were significantly fewer candidates attempting repeated addition this year.

Specification B

This question was not done well. About half the candidates were unable to show sufficient understanding of place value in the multiplication of two numbers to score any of the marks. A very common incorrect answer here was 36 × 24 = 30 × 20 + 6 × 4 = 624.

Many of those candidates using a tabular method (which was perhaps the most successful of the methods used) made errors in their calculations, such as 30 × 20 = 500 and 6 × 3 = 16.

53. **Specification A**

Most candidates gained full marks on this question. Where they did not it was usually due to misunderstanding or misreading of the question or simple mathematical errors. In (b) it was not uncommon to see the answers embedded in working, or shown as seven £8.65s added up in working without the answers "7" on the answer line.

Examples of errors in (c) include calculations for 1 adult and 1 child, or incorrect/missing subtraction of £18.45 from £20 in part (c).

Specification B

Adding £4.90 and £5.85 together by first selecting the information from the table gave little cause for concern, especially on this calculator paper with over 90% getting this correct. The most common error was to add together all three amounts with some going wrong by adding together the incorrect two amounts.

Some struggled to formulate a method in part (b) to determine how many adult tickets were bought. On a calculator paper evaluating 60.55 ÷ 8.65 should have been a relatively easy task. In part (c) writing down the method is good practice, as this allows for the award of method marks, although, in some instances, it was not that clear as to how the answer had been achieved. Many did not write £20 – their total and so often could not be awarded the second method mark when their answer was incorrect. Candidates need to be aware that even though we may suspect the method is correct, we cannot guess what they have done. Eg seeing £18.45 and then having an answer of £2.55 would not score the second method mark even though we suspect the candidate has done £20 – £18.45 It was pleasing to note that over ¾ of the candidates scored all 5 marks in the last two parts.

54. This proved to be a good starter question for the paper with most candidates scoring some marks. The most common error was the inability to subtract from 300 without a calculator.

55. Most candidates showed some working, obtaining at least one mark, with many obtaining the full 3 marks. A significant number did not recognise that there were multiple purchases of items, adding 84p, £1.35 and £1.49 and subtracting this from £10.

56. Most candidates scored at least 2 marks on this question.
In part (a) – 14 and Moscow were common incorrect responses.
In Part (c) many omitted the negative sign.

57. This was very poorly answered on the whole. The common error in (a) and (b) was putting the decimal point in the incorrect place.
Part (c) displayed a poor knowledge of the rules of subtraction particularly in borrowing or carrying from one column to another.

58. Quite a few candidates scored 4 marks on this question. A substantial number of candidates did not show any working. Candidates are strongly advised to show working particularly in questions worth so many marks. Where working was shown, many candidates scored a mark for *1303* but then did nothing with this answer.

59. There were many correct answers of 32 with no method shown.

60. Nearly all candidates gained the first mark for $5.84 \times 367 = 2143.28$, however only a few continued to work accurately, using correct units. The most popular answer, by far, was £2149.42 , with no-one questioning the rather high monthly cost. No credit was given for this answer if it appeared without working, as it often did.

61. This was generally well answered. Most picked up a mark for identifying Edinburgh as the coldest city. A significant number of candidates looked at the numerical values and ignored the signs giving London and Edinburgh as the two extremes of temperature.

62. This question was poorly answered by most candidates with many scoring no marks. A variety of methods were used to try to carry out the multiplication. Of those that tried the traditional long multiplication method many missed the zero when multiplying by the 4. Napier's method was often seen but too many errors led to the incorrect answer. Most tried to break down the multiplication into smaller parts by multiplying 9.55 by 10 then 4 or 5 etc.

63. There were many different methods used to multiply £5.21 by 34 with varying degrees of success. Many made a conceptual error in their method by either omitting the zero when multiplying by 30 or mixing the units when multiplying 34 by £5 and then 34 by 21p. Repeated addition was often seen but this mostly led to an inaccurate answer. Most candidates showed working but it was generally presented as a mass of calculations all over the working space provided. Candidates are to be encouraged to set out their working in a logical way, whatever method they choose. In general, those candidates who used the traditional long multiplication method or Napier's method tended to be the most successful.

64. **Paper 8**

There were many correct responses to (a) although 45 was a common incorrect response with candidates assuming brackets around the 4 and the 5. 29 was also a common incorrect answer. In (b) there were a variety of responses, mostly incorrect.

Paper 9

Part (a) usually gained full marks and the majority of candidates were comfortable evaluating brackets first, however less success was achieved when brackets had to be inserted, particularly in (bi) where $2 + (3 \times 4) + 5$ and $(2 + 3) \times 4 + 5$ were often seen. (bii) was more successful, however a number of candidates felt that just one pair of brackets were required.

65. There was a mixed response to this question. Most candidates got at least one entry correct with many getting two or three entries correct. However there were a few candidates who were unfamiliar with this type of table.

66. Many realised that the first part of the calculation involved $38.7 – 20$ giving 18.7 but the rounding up to 19 was frequently ignored. There were very few answers of £123.50 with the answer to $18.7 \times$ £16.50 being the most common answer. Although reward was given to this calculation, careful reading of the question would have helped to avoid the error and gain all three marks. Most candidates seemed to have access to a calculator with repeated addition methods being very much in the minority.

67. Many students did not realise they had to subtract 1962 from 2159 in order to find the number of units of gas used. Many started by adding the two numbers before multiplying this by 21. However it was pleasing to note that more than 15% of the candidates were able to reach the digits 4137 scoring at least 3 out of the 4 available marks for this question.
The alternate method of tackling this question was to multiply the given readings by 21 before subtracting. There was evidence that many did not use a calculator to do this multiplication. Others multiplied each of the digits of the readings by 21 separately disregarding their place value. This generally led to an answer of 735 obtained by $(1 \times 21 + 9 \times 21 + 6 \times 21 + 2 \times 21) + (2 \times 21 + 1 \times 21 + 5 \times 21 + 9 \times 21)$!

68. It was rare to see the correct answer of –2. A few candidates remembered to use their BIDMAS rules reaching $6 – 8$ but then gave the answer of 2. The majority of candidates realised that the bracket was equivalent to 4 but then worked out $6 – 2$ to get 4 and multiplied these two part answers together reaching a final answer of 16. There was little evidence to suggest candidates had used their calculators to access this question.

69. This was a multi-step question with the first stage being the calculation of the total cost of the items in dollars ($) and the second stage being the conversion into pounds (£). Ideally selecting a hot dog at $5.10, multiplying this by 3 and then adding in the chicken salad at $4.50 should have given a total of $19.80. However, the correct items or the correct number of items were not always featured in the calculations such that marks were lost in the first stage of the problem. Many gave 19.8 as their final answer. Most recognised the need to divide by 1.44 to obtain pounds (£) although some appeared to be handicapped by not having the use of a calculator in the examination.
The alternative route of converting the $5.10 to pounds, multiplying this by 3 and then adding $4.50 converted to pounds, although a lengthier method, did lead to some correct answers.

70. There were many varied methods with the majority realizing that a division was required. However only about 10% of candidates scored all 4 marks. There were very few attempts at traditional long division. Those using this method often got the 1 in the correct position and then floundered. Others got the 1 but then ended with a number over 100. Most candidates attempted to build a total around 990 with much inaccuracy. There were also some innovative ideas, which came from a single digit multiplication such as first evaluating $69 \times 10 = 690$ and then $69 \times (3$ or 4 or 5) in order to get close to 990. The less productive became swamped in a sea of figures in which desperation overcame logic. Multiple addition calculations were much in evidence which tended to fill up the answer space very quickly.

71. **Paper 14**

By disregarding the 56 many presented $7 \times 4 = 28$ as their answer. Others, using the 56 indicated that $56 \div 7$ was needed but did not always come up with the answer of 8. Those that showed a valid method (around 38% of candidates), generally went on to give the correct answer.

Paper 16

80% gained full marks here with again, arithmetic errors losing marks. $\frac{56}{7} = 7$ and $8 \times 4 = 24$ or 28 being the usual mistakes.

72. In (a) most candidates went down the route of adding up the 4 given amounts and giving a final incorrect answer of £1.70, with or without working. Lack of working for this question meant that many candidates lost valuable marks.
There were some correct responses in (b), but by far the most popular response was 13. Here candidates understood the need to divide 160 by 12, but did not appreciate that an answer of 13.3 recurring meant that 14 boxes needed to be purchased.

73. **Paper 15**

Most candidates attempted this question with varying degrees of success. Many did not appreciate that they had to provide the difference in cost as well as the country. But the main problem here was a lack of clear working which made it difficult to award part marks. The most common incorrect response was U.S.A. with 8.51, obtained by subtracting 26.99 from 35.50. Here candidates did not understand that the question required a conversion from one currency to the other, either multiplying or dividing by 1.42. The favoured method was to convert dollars to pounds but confusion arose as to whether to multiply or divide 35.50 by 1.42. Others rounded £26.99 to £27 which hindered accuracy. A few candidates lost out on the final accuracy mark because they did not put £ or $ with their difference.

Paper 17

This question was answered well with the majority of candidates earning at least 2 marks. Failure to work out the difference in price or the omission of units accounted for the loss of the third mark on many occasions. A number of candidates rounded £26.99 to £27 and lost many marks.

74. 85% gained full marks on this question and very many of the remainder gained 2 marks, arithmetic errors losing marks more than conceptual errors. It was not uncommon to see 6 or 8 being given to the quotient of 28 and 4.

75. Many candidates showed their working, many even writing 7.60 first, but still were unable to deal with subtracting '3' from '0'. 3.23 was the most common incorrect response. 13% of the candidates scored the available mark.

76. Many candidates did offer some working in this question. Over 78% of the candidates were able to score at least one mark. It was encouraging to find that nearly 60% of the candidates scored all 3 available marks. Many of the correct answers showed no working, but some wrote 3.38 somewhere in the body of the answer space. Quite a few candidates lost out because of poor arithmetic despite this question being on the calculator paper. Evidence of this was shown by candidates lining up four lots of 56 with 114 and then getting the wrong answer. Many others wrote £3.38 and then gave the final answer of £7.62.

77. In part (a)(i) over 70% of candidates scored the mark for an answer of –8. The most common incorrect answer was *positive* 8 but –7, –9 and 9 were also answers seen.
In part (ii) 15 was the answer given by over 50% of candidates with –15, 8 and –8 being the most popular errors. The subtraction of fractions in part (b) was poorly done with the majority of candidates simply finding the difference in the numerators and the difference in the denominators, giving $\frac{6}{4}$. Only 38% of candidates successfully gained full marks in this part.

78. Reading data from a railway timetable required an understanding of exactly what the question was asking. Over 70% of the candidates gave the correct time in part (a) but some times were given which did not relate to the arrival time in London.
Part (b) proved more challenging with only a third of the candidates giving the correct number of minutes. Where working was shown, it indicated an understanding of how to deal with the problem but errors in calculation let them down.
Part (c) was answered correctly in almost half of the responses, the most common incorrect response being 12 53 where the candidate only read the words of the final line rather than reading the stem of the question too.

79. Over 80% of the candidates were able to correctly provide the difference in temperature at the South Pole which was encouraging, but only just over half the candidates were able to work out the temperature outside Mr Snow's house, with $12 - (-2) = 14$ being a common error.

80. It was encouraging to note that most candidates showed some working and over 60% scored both available marks. However, although many showed how they arrived at £3.68, many did not then show that they had subtracted their answer from £5.00 and often lost the method mark as a result when their answer was incorrect. It was clear than many did not use a calculator to obtain their answer as £5 minus their answer to 92p × 4 often resulted in the incorrect answer. A common incorrect response was to multiply the two given values in the question (£5 × 92p)!

81. Only half of the candidature succeeded in gaining the mark for a correct answer of –4 in, part (a) and of these it is questionable whether the multiplication and division of directed numbers was fully understood. Many candidates whose working showed $-8 \times -3 = -24$ followed by an answer of – 4 were given the benefit of the doubt that they then went on to correct their error.
In part (b) it is pleasing to note that nearly 4 in every 5 candidates demonstrated their understanding of the ordering of operations with the great majority gaining full marks.
The most common incorrect answer was 1620 ($33 \times 10 = 330$, $330 - 6 = 324$, 324×5).

82. There were generally two camps in how this question was answered. The first group was those who knew about conversion (not necessarily successfully as there was multiplying as well as dividing) and those who added or subtracted the 1.56 thereby scoring no marks. Many candidates did show working which is encouraging. Candidates must take great care with their rounding as many needlessly lost the final mark by ignoring the pence obtained after dividing each of 25 and 14 by 1.56. A quarter of the candidates scored all 3 available marks and another 38% were able to score 1 or 2 marks by either indicating that they had added the two amounts before or after they had multiplied or divided by 1.56. It was clear that many candidates did not have access to a calculator. This made their attempts at the calculations very unwieldy.

83. In spite of the fact that this is a calculator paper there were considerable efforts made to avoid its use in this question. Copious calculations were seen, some of which were successful. The main stages of finding the difference in the mileage and multiplying this by the cost per mile provided a fairly straightforward way of dealing with the problem. Some candidates, however, were unable to deal confidently in handling 32p or £0.32 when it came to the multiplication by 228. Alternative methods abounded and 2430 × 32 then 2658 × 32 sometimes gave the right result where the handling of the larger numbers could be dealt with. Many candidates added the two given mileages and consequently gave an exceptionally high payment for travel expenses not thinking about "sensible" answers. Over 60% of the candidates scored 2 or more marks with a pleasing 31% scoring all 4 available marks.
Reading the values off the graph in part (b) didn't present too much difficulty although the scale was sometimes misinterpreted.

84. For part (a) dividing £60 by £2.80 was wanted and then interpreting the result. Just over half the candidates were able to come up with 21 books scoring the full two marks. Part (b) was considerably less successful. Finding 20% of £40 proved to be quite challenging and various methods at achieving the result were in evidence. For those who arrived at an amount they often omitted to complete the calculation by subtracting from £40.

85. It was evident that many candidates did not possess (or use) a calculator for this question as many showed their total bill but were unsuccessful in subtracting this from £10, or showed 6 lots of 25p or 2 lots of 89p but were then unable to add these numbers correctly. Where working was shown, candidates generally scored one or more marks by applying the correct processes. Quite a number earned the special case mark for 7.77 (£10 – the three given prices). Only just over half the candidates were able to reach the correct answer of £5.63. Quite a few candidates wrote 4.37 –10 = 4.27 to work out the change Rizwan should get.

86. This was the first challenging question on this section with less than half being able to score the full three marks. A common error was to ignore that there were two tins of paint which gave rise to an incorrect total of '£11.49'. One mark was awarded for a correct subtraction from £20. Considering that calculators were permitted on this paper there was considerable evidence of attempts to add and subtract which should have been dealt with by the use of the calculator. There were some less than competent subtraction methods which gave the idea of a '£21' pound note rather than the '£20' given in the question. Many candidates would have undoubtedly scored some method marks had they shown their working.

87. 71% of the candidates completed this question correctly. Of those candidates who did not earn both marks available about a half earned one mark for demonstrating a partially correct method. A surprising number of candidates who clearly showed the intention to subtract 19 from 33 were unable to carry out this operation successfully, recording "26" as their difference. Very few candidates used the "easier" method of calculating 33 – 4. This alternative method might have helped weaker candidates to complete the question successfully.

88. Part (a) was well answered with nearly all candidates giving the correct answer. Very few candidates carried out the operations in the wrong order. However, the success rate in (b) was lower at about 65% with the incorrect answers 32 and 0.5 commonly seen. Presumably this was reached by candidates who failed to appreciate the significance of the brackets or by those who worked out the bracket first but then worked out 8 ÷ 16 rather than 16 ÷ 8.

89. It was pleasing to find that nearly 90% of the candidates were able to accurately work out the total cost of a cola and a roll. However, the inability to read the question resulted in many incorrect responses to part (b). Having worked out the total cost as '£2.45' in part (a) there was evidence that this amount was then processed as '£5 – £2.45' to obtain '£2.55'. There was a failure to recognise that the question involved two different people purchasing their own items. Other money calculations seen suggested that the change from the £5 note was considerably more than the money handed over in payment. Only 70% of candidates scored both marks despite being allowed to use a calculator. Candidates should be advised to approach questions of this type as more of a practical consideration rather than a mathematical one in the hope that common sense would guide towards the correct answer.

90. Candidates understood what they had to with this question and about 50% gaining a fully correct solution. A further 25% were able to gain two marks for showing their working and making simple errors in calculation.

91. This question was poorly attempted with only about a third of candidates obtaining full marks, another third of candidates gained no marks and the other third gaining partial marks for either showing a structured attempt or being able to remember their multiplication facts. It was interesting to note that the majority of candidates used a grid approach by breaking the numbers down into 300, 60, 2 and 50, 4 and then multiplying. Many of these candidates were very successful.

92. Not very well answered with incorrect answers of 0.1624, 1.624, 162.4 and 1624 being seen as often as the correct answer. Some candidates ignored the given information and attempted long multiplication methods. These usually failed.

93. The most common error in part (a) was to give an answer of 10. In part (b) 7 × 7 was often seen. This gained no credit. In part (c) the understanding of the order of operations was poor resulting the incorrect answer of 28 being the most common offered.

94. Many candidates gained the first method mark, usually for rounding 29.8 to 30 and 4.1 to 4 although 0.2 was often seen. The vast majority of candidates were not able to go any further; the understanding in how to divide by a decimal was very weak. Many simply divided the product of 30 and 4 by 20 (or 2) to get 6 (or 60)

Some candidates tried to calculate the exact answer to the problem. These attempts nearly always failed.

95. No Report available for this question.

96. No Report available for this question.

97. No Report available for this question.

98. No Report available for this question.

99. This question was well answered by the majority of candidates. Many candidates, however accurately calculated the cost of 3 magazines, but then failed to subtract this amount from £10. Candidates should be encouraged to take more care when reading questions.

£3.35 was a common error when subtracting £7.35 from £10. Many just found the change (£7.55) from the purchase of just one magazine. This gained one mark only.

100. No Report available for this question.

101. No Report available for this question.

102. No Report available for this question.

103. It was disappointing to note how many candidates did not read the question properly. Many thought Grace only bought one pen, even though the drawing on the page clearly showed 2 pens. Many others found the total cost but then stopped at that and did not work out the change. Candidates should be encouraged to show all working clearly including 10 – their total. Where candidates added incorrectly and then subtracted from £10 incorrectly, they could not score any method marks unless they showed they had subtracted from 10 in their working. It was also of some concern that many candidates clearly had not used their calculators by all the arithmetic errors seen. 61% of the candidates got this fully correct with 14% scoring 2 marks for a fully correct method and 12% scoring one mark either for attempting to add all 4 items or for subtracting their sum (after having added at least 2 items) from £10.

104. The more traditional methods for long multiplication usually yielded a correct or near correct result, often one arithmetic slip only was made and thus just one mark lost; although, even here, confusion with place value lost all of the marks. The matrix (table) method was then the next most popular approach, however many mistakes were made in the multiplication of pairs of numbers in completing the table; 700 x 20 = 1400 was a common error. Addition errors, particularly using this latter method, often spoiled otherwise accurate work. Those candidates electing to use a Napier's bones approach often made errors in the setting up of their table.

105. Although there were many correct responses (73%) many candidates left out the cost of one roll of wallpaper. A common error was to halve the total cost of the tins of paint reaching £7.25 which then led to the grand total of £46.25 which scored the final mark for "total for the tins of paint" + £39. A common incorrect response for the total cost was £58 as some candidates lacked the skill in adding 29 + 15 + 24. This proved to be a good question to start to the paper with only 2% not scoring any marks.

106. Candidates at this level did struggle with the application of directed numbers but on the whole over 60% of the candidates scored all 3 available marks. Part (a) proved to have a higher success rate than the other two parts with a 76% success rate on part (a).

107. This question was also well understood with a success rate of 96% for part (a) with only a very small percentage of candidates writing –13 as the highest temperature. In part (b) the success rate was 88% and this showed a good understanding of temperature difference. Candidates that wrote –8 were also awarded the mark. In part (c) the success rate was only 81% with many candidates writing +1ºC rather than the –1ºC, which was the correct answer.

108. Candidates understood this question but fully correct answers were seen in only 56% of cases. The digits 83 needed to be seen for the award of 2 marks and £0.83 or 83p needed for the units mark on this paper. This occurred in 14% of cases. An answer of £0,83 or £0.83p was also awarded full credit. A significant number of candidates had the correct response of 0.83 but failed to write this correctly as money giving their answer as 0.83p

109. It was gratifying to see 68% of candidates obtaining full marks in this question. Almost all candidates realised they needed to find the elapsed time though a few tried to multiply the actual times by 12p and gained no marks. Many candidates were unable to find the time difference between the two times given in the question, often adding the 11 and the 57 together to obtain 68 minutes. Another significant number of candidates realised they had to multiply their elapsed time by 12p and they then scored 2 marks if went on to write their answer correctly as money. Obviously full marks were awarded for the correct answer of £5.52 but if candidates wrote the correct digits 552 they could obtain 3 of the 4 marks available. This occurred in 8% of cases.

110. Almost all candidates obtained full marks in this question. Very few candidates obtained no marks.

111. Part (a) was almost always correct but in part (b) the correct answer of 22 was rarely seen whilst the modal incorrect answer of 50 was seen frequently.

112. Many candidates made a good attempt at this question, and arrived at the digits 96 from calculation. There was then some confusion with money notation, with answers of £96 and 0.96p showing some misunderstanding.

113. No Report available for this question.

114. No Report available for this question.

115. No Report available for this question.

116. This question was not very well understood as many candidates were happy that the incorrect answer was, in fact, correct. Only 56% of candidates were able to correctly give a correct reason as to how 24 was in fact obtained or how to correctly calculate $15 – 3 \times 2$ as 9. Some candidates indicated that brackets were needed but gave no indication as to their placement to make a true statement.

117. No Report available for this question.

118. No Report available for this question.

119. No Report available for this question.

120. This question was well understood with 88% of candidates scoring full marks. A further 8% of candidates scored 1 mark either for showing a complete method or for sight of 19 or 51. Many candidates took away both 15 and 17 and got an answer of 2. They were awarded one mark for a misread of taking 15 and 17 away from 34.

121. No Report available for this question.

122. No Report available for this question.

123. No Report available for this question.

124. Many candidates were able to score at least one mark for part (a) of this question. This was usually for obtaining a 7 in the unit column of their answer. A significant number of candidates were unable to obtain the correct answer. Common incorrect answers here were 217, 117 and 393. In part (b), many candidates were able to take 9 from 4 to get –5. A very common incorrect answer here was 5. Part (c) was done well by most candidates. Common incorrect answers here were 15 and 2. Part (d) was done well by the majority of candidates It was rare to see this calculation set out as a long division- many just simply wrote down the answer. Common incorrect answers here were 60 and 250.

125. This question was done well by the vast majority of candidates.

Common errors in part (b) were –5 and –7. Common errors in part (c) were Edinburgh and London.

126. Working out 10% of £7200 in part (a) led to £720 in many cases.

However, it is important to stress the importance of reading the question carefully as it was not unusual to see the amount given as £6480 as the answer to part (a) … this being the answer to the second part of the question. £72 as the answer also appeared representing 1% of the sum rather than the required 10%. A follow through in part (b) allowed for an earlier error in the calculation not to be penalised twice. Just under 20% failed to score on this question and around 50% scored all 3 marks. Many candidates wrote the same answer in both parts, generally £720 or £6480