Q1.   Frankie says that $15 - 3 \times 2 = 24$.

Frankie is wrong.
Explain why.

....

(Total 1 mark)

Q2.   The cost of 30 litres of petrol is £28.80.
Work out the cost of 1 litre of this petrol.

....

(Total 3 marks)

Q3.   (a)   Write these numbers in order of size.
Start with the smallest number.

$$-5 \qquad 3 \qquad -1 \qquad 0 \qquad 8$$

....

(1)

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

(1)
(Total 2 marks)

Q4.   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)

Q5.   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)

Q6.   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)

Q7.   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)

Q8.   (a)   Work out 400 – 193.

....

(2)

(b)   Work out 4 – 9.

....

(1)

(c)   Work out –3 × 5.

....

(1)

(d)   Work out 300 ÷ 50.

....

(1)
(Total 5 marks)

Q9.   At midnight the temperature was –9°C.
By 10 am, the temperature had risen by 8°C.

(a)   Work out the temperature at 10 am.

.........................°C

(1)

At midday the temperature was 5°C.

(b)   Work out the difference between the temperature at midnight and the temperature at midday.

........................°C

(2)

On another day

      the temperature at midnight was –7°C,
      the temperature at 10 am was –1°C and
      the temperature at midday was 3°C.

Jenny says that, on this day, the temperature at 10 am is halfway between the temperatures at midnight and at midday.

(c)   Is Jenny correct?
     You must give a reason for your answer.

....

....

....

(2)
(Total 5 marks)

Q10.   Work out 342 × 24.

....

(Total 3 marks)

Q11.   Comp Parts and Z Parts both sell memory sticks.

Comp Parts	**Z Parts**
Memory sticks £4 each	Memory sticks
1 free stick for every 10 sticks bought	£35 for a box of 10 sticks

There are 150 students in Year 10 in a school.
A teacher needs to buy a memory stick for each student.

At which of the shops should he buy the memory sticks?
You must show all your working.

(Total 5 marks)

Q12.   Yusuf is planning a disco party at his Youth Club.
      Here are his costs.

          Mobile Disco   £230
          Hire of room   £150
          Other costs   £30
          Food   £12 per person

      Yusuf charges £16 per ticket.
      He sells 100 tickets.

      Is there enough money from the ticket sales for Yusuf to pay all his costs?
      You must show your working.

(Total 4 marks)

Q13.   This is the meter reading card for Mr Hassan's use of electricity.

**Electricity Meter
Reading**   **Lightning Electric Co**

Date of meter reading	Reading in units				
3 April 2012	0	8	9	6	3
30 June 2012	1	0	6	2	5

Here is part of Mr Hassan's bill.

Electricity Bill   **Lightning Electric Co**

2 July 2012

Current rates

Standing charge   15.07p for each day

Cost per unit   11.85p

Find the total cost of Mr Hassan's electricity bill.

£ ....

(Total 6 marks)

Q14.   Jemilla goes swimming.

She swims 64 lengths of a swimming pool.

Each length is 25 m long.

(a)   Work out how far Jemilla swims.

Give your answer in kilometres.

.... kilometres

(3)

The swimming pool is 25 m long by 10 m wide by 2.5 m deep.

(b)   How many litres of water does it contain?

.... *l*

(3)
(Total 6 marks)

Q15.   Ben buys 10 trays of bottled water for £5.99 a tray.

Each tray holds 12 bottles of water.
Ben goes to a car boot sale to sell his water.

In the morning he sells 80 bottles at 99p each.

In the afternoon he reduces the price and
he sells all the bottles he has left for 75p each.

How much profit or loss does he make?

£ ....

(Total 5 marks)

##

Jan bought 3 boxes of Salt 'n' Vinegar crisps and 2 boxes of Ready Salted crisps to sell at the Year 11 disco.

There are 48 bags of crisps in each box.

At the end of the disco there were 25 bags of crisps left.

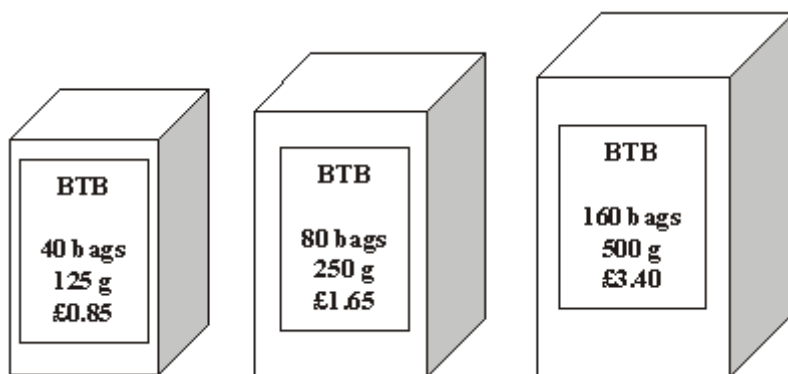How many bags of crisps were sold at the disco?

Crisps
48 bags
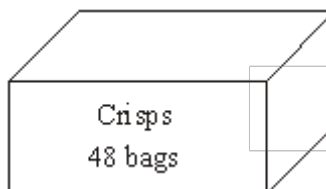
.... Bags

(Total 3 marks)

Q17.   The diagrams show three different size packets of Brew Tea Bags (BTB).

Diagram **NOT**
accurately drawn

Tommy buys 200 bags of Brew Tea Bags (BTB).
Tommy pays with a £10 note.

(a)   Which packets should Tommy buy to leave him with the most change from £10?

You must show your working.

(4)

A supermarket shelf has room for just 72 small packets of Brew Tea Bags (BTB).
On Tuesday morning, when the supermarket opens, there are 57 packets on the shelf.
During the day,
     125 packets are sold and
     2 cartons, each containing 48 packets, are used to keep the shelf stocked up.

(b)   Is there any space on the shelf to unpack another carton of 48 packets?

You must show your working.

(3)
(Total 7 marks)

Q18.   The table gives information about the temperatures at midnight on New Year's Eve
          in 5 capital cities.

City	Temperature
London	–3°C
Madrid	7°C
Oslo	–11°C
Washington DC	1°C
Wellington	14°C

In Oslo, the temperature dropped by 8 degrees from midday to midnight.

(a)   What was the temperature in Oslo at midday?

....

(1)

At midnight on New Year's Eve in Paris, the temperature was halfway between the

temperature in London and the temperature in Madrid.

(b)   What was the temperature in Paris?

You must show your working.

....

(2)
(Total 3 marks)

Q19.   This is part of a list of TV programmes for one evening.


```
18 00  Tikkabilla
18 30  Teletubbies
19 00  Lunar Jim
19 10  Kerwhizz
19 35  Lazy Town
20 00  ChuckleVision
20 15  Arthur
20 30  Richard Hammond's Blast Lab
```

(a)   Which TV programme lasts for 10 minutes?

....

(1)

Brian turned on his TV set at 19 40

(b)   How many minutes did Brian have to wait for the start of Arthur?

.... minutes

(1)

Richard Hammond's Blast Lab lasts for 45 minutes.

(c)   At what time did Richard Hammond's Blast Lab end?

....

(1)
(Total 3 marks)

Q20.   Mandy lives in Weymouth.
She is planning a shopping trip to Bournemouth.
She will travel by train.

Here is part of the train timetable from Weymouth to Southampton and from Southampton to Weymouth.

Weymouth to Southampton					
Weymouth	0903	1003	1103	1203	1303
Dorchester	0913	1013	1113	1213	1313
Poole	0940	1040	1140	1240	1340
Bournemouth	0953	1053	1153	1253	1353
Brockenhurst	1020	1120	1220	1320	1420
Southampton	1026	1126	1226	1326	1426

Southampton to Weymouth					
Southampton	1224	1324	1424	1524	1624
Brockenhurst	1237	1337	1437	1537	1637

Bournemouth	1300	1400	1500	1600	1700
Poole	1335	1435	1535	1635	1735
Dorchester	1344	1444	1544	1644	1744
Weymouth	1355	1455	1555	1655	1755

It takes Mandy 25 minutes to walk from home to the train station at Weymouth.
She wants to be in Bournemouth for 3 hours.

Plan a schedule for Mandy's shopping trip.

	Time
Mandy leaves home	
Train departs Weymouth	
Train arrives Bournemouth	
Train leaves Bournemouth (Mandy comes home)	
Train arrives Weymouth	
Mandy arrives home	

(Total 5 marks)

Q21. Work out £1.70 × 5

£ ....

(Total 1 mark)

Q22.   Work out

(i)   3 × 3 – 5

....

(ii)   20 ÷ (12 – 2)

....

(iii)   7 + 8 ÷ 4

....

(Total 3 marks)

Q23.   Use a calculator to work out

$\sqrt{2.56}$ + 8.4

....

(Total 2 marks)

Q24.   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)

Q25.   (a)   Work out   2 × (11 + 9)

....

(1)

(b)   Work out   3 × 5 + 4

....
(1)

(c)   Work out   20 – 5 × 3

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

Q26.

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)

Q27.   Work out   36 × 24

....

(Total 3 marks)

Q28.   (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)

Q29.
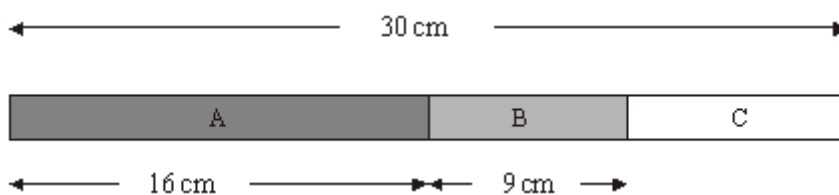
Diagram **NOT** accurately drawn

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)

Q30.

Item	Costs (£)
Motor oil 1l	2.50
Wiper blades 1	8.75
Brake Pads 1	14.85
Antifreeze 1l	3.99
Hydraulic Fluid 1l	5.99
Spark Plugs	1.75

Mr Smith had his car serviced.
He had to pay for a 15 000 mile service, 3 litres of oil and 4 spark plugs.

Complete his bill, and work out the total amount to pay.

Gary's Garage

Item	Number of items	Cost of one item	Total
15 000 mile Service (labour charge) Motor oil 1l Spark plugs	1	£75.50	£75.50
		Total	£ ....
		VAT at $17\frac{1}{2}$% of Total	£ ....
		Total amount to pay	£ ....

(Total 6 marks)

Q31.

Susie has one pound and sixty pence.

Her friend, Katie, has two pounds and five pence.

They want to buy a pizza between them.
The pizza costs £3.50
How much money will they have left?

Show your working here.

(Total 2 marks)

Q32.   Simon is a salesman.
He gets paid expenses of 40p for every mile that he drives during work.
He also gets £12 expenses as a meal allowance for any day that he drives during work.
The table gives information about the number of miles Simon drove on 5 days in one week.

Day	Number of miles
Monday	48
Tuesday	37

Wednesday	0
Thursday	78
Friday	21

(a)   Work out Simon's total expenses.

£ ....

(4)

Sasha works for the same company.
She gets paid expenses of 40p for each mile she drives during work.

Last year she worked for 48 weeks.

Her total **expenses** for driving for the year were £2116.80

(b)   Work out an estimate for the average number of miles Sasha drove during work each week last year.

....

(3)
(Total 7 marks)

Q33.   Parul has £1.70

She wants to buy a drink and something to eat.

(a)   What are the different combinations she can buy?

Ben's Burger Bar
Burgers

Single burger   £0.85

Single burger with cheese   £0.95

Double burger   £1.55
Double burger with cheese   £1.70

Fries   **Cola**

Regular   £0.65   Regular   £0.85
Large   £0.99   Large   £1.10

Meal Deals

Regular

Single burger with   £2.09
regular fries and regular cola

Large
Double burger with cheese   £3.49
large fries and large cola

....
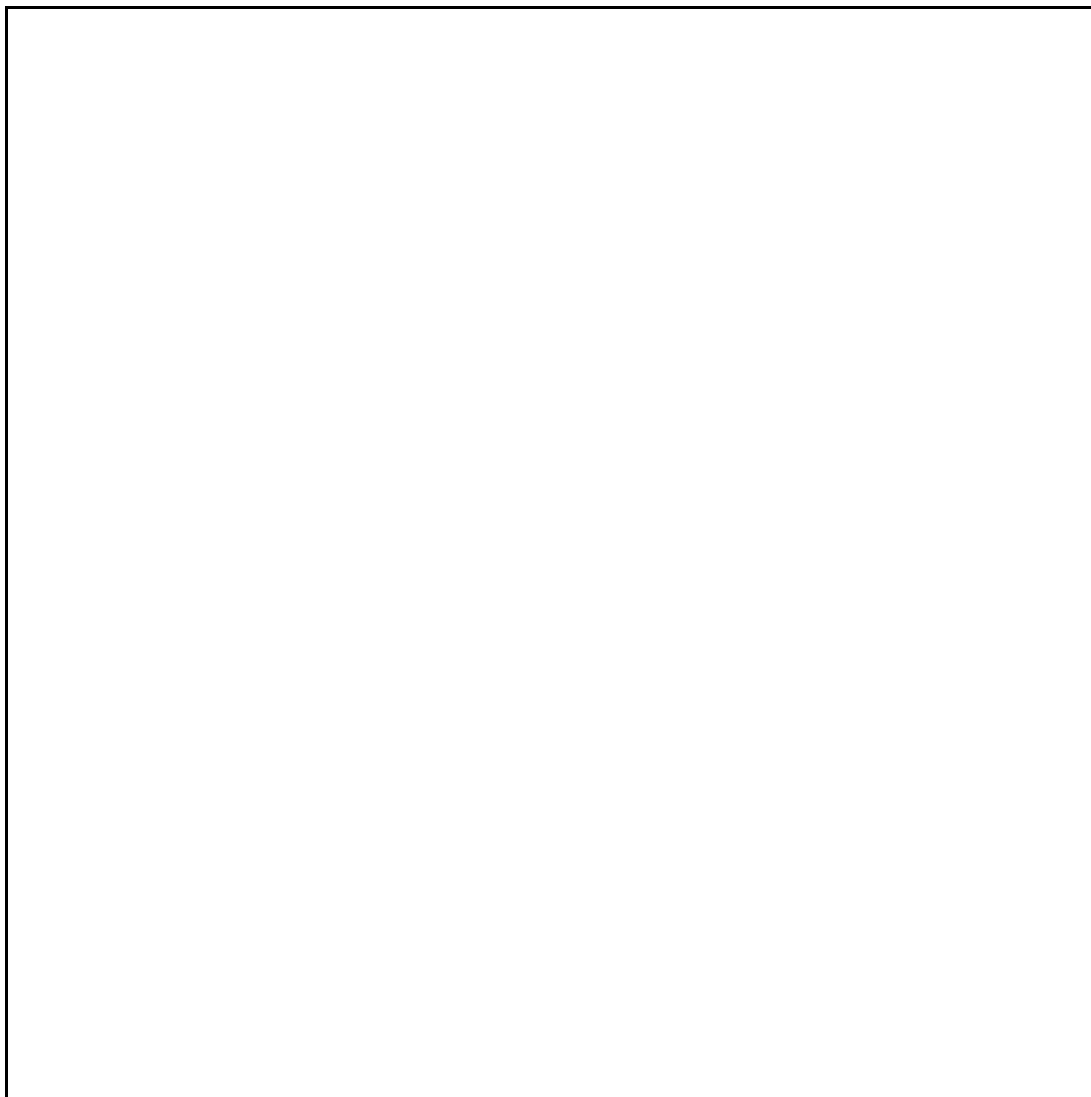
(2)

Ken buys

2 double burgers with cheese,
1 large fries
and 1 large cola.

He pays with a £10 note.

(b)   He gets the best price.
        What change should he get?

£ ....
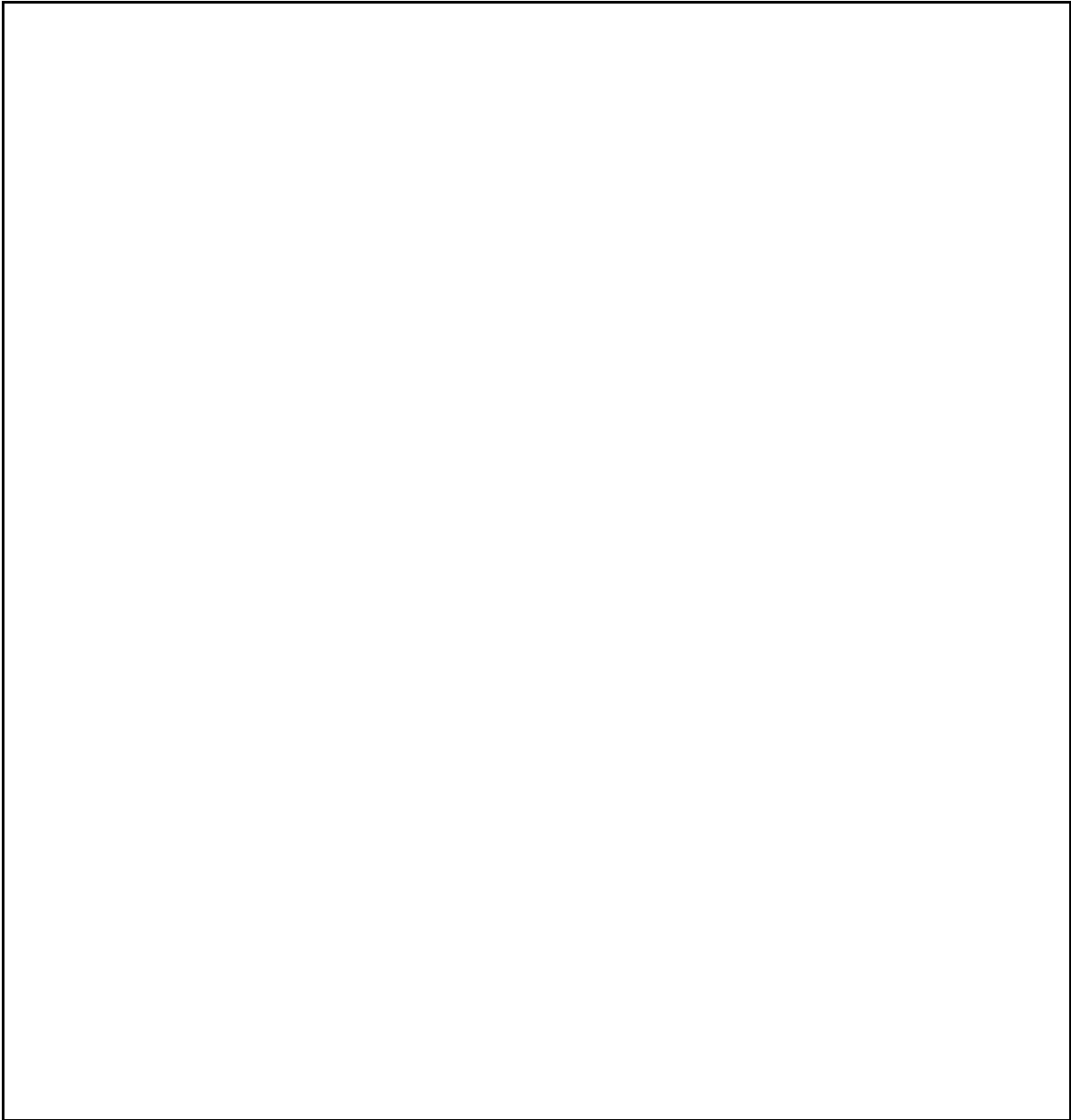
(3)
(Total 5 marks)

Q34.   Chris owns a clothes shop.
He bought 50 shirts at £12 for each shirt.
He chose the selling price of each shirt so that he would make a profit of 30% on each shirt.
He sold 20 shirts at this price.

Chris then reduced the selling price of each shirt by 15%.
He then sold the remaining shirts at this reduced selling price.

Has Chris made a profit or loss?
You must explain your answer clearly.

(Total 8 marks)

M1.

Answer	Mark	Additional Guidance
explanation	1	**B1** for explanation with Bidmas e.g. Brackets needed (15 – 3) or Answer should be 9 Note: brackets needed is insufficient
		Total for Question: 1 mark

M2.

Working	Answer	Mark	Additional Guidance
28.80 ÷ 30 = 0.96	96p or £0.96	3	**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
			Total for Question: 3 marks

M3.

	Working	Answer	Mark	Additional Guidance
(a)		–5, –1, 0, 3, 8	1	**B1** for –5, –1, 0, 3, 8 cao

| (b) | 7 + 15 | 22 | 1 | **B1** for 22 cao |

| | | | | **Total for Question: 2 marks** |

M4.

Working	Answer	Mark	Additional Guidance
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
			Total for Question: 2 marks

M5.

Working	Answer	Mark	Additional Guidance
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
			Total for Question: 2 marks

M6.

	Working	Answer	Mark	Additional Guidance
(i)	$\frac{10}{100}$ × 7200	720	2	**M1** for $\frac{10}{100}$ × 7200 oe **A1** (accept 720.00 or 720.0)
(ii)	7200 – 720	6480	1	**B1** ft from (i) for 7200 – '720'
				Total for Question: 3 marks

M7.

	Answer	Mark	Additional Guidance
(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
			Total for Question: 3 marks

M8.

	Answer	Mark	Additional Guidance
(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
			Total for Question: 5 marks

M9.

	Answer	Mark	Additional Guidance
(a)	−1	1	**B1** cao
(b)	14	2	**M1** for 5 – −9 or – 9 – 5 **A1** for 14 or −14
(c)	No + reason	2	**M1** for attempt to find middle of −7 and 3 eg, may see −7 and 3 on number line **or** (−7 −3) ÷ 2 **or** (−3 −7) ÷ 2 **A1** for 'No' and correct reason
			Total for Question: 5 marks

M10.

Working	Answer	Mark	Additional Guidance

	8208	3	**M1** for a complete method with relative place value correct. Condone 1 multiplication error, addition not necessary.
			M1 (dep) for addition of all the appropriate elements of the calculation.
			A1 cao
			M1 for a complete grid with not more than 1 multiplication error, addition not necessary (inside numbers)
			M1 (dep) for addition of all the appropriate elements of the calculation (eg outside numbers)
			A1 cao
			M1 for sight of a complete partitioning method, condone 1 multiplication error, addition not necessary.
			M1 (dep) for addition of all the appropriate elements of the calculation.
			A1 cao

Total for Question: 3 marks

M11.

Working	Answer	Mark	Additional Guidance
Zparts: 150 is 15 boxes; 15 × £35 = £525 CompParts: 150 ÷ 11 is 13.6 so 13 offers (150 – 13) × £4 = 137 × 4 = £548 OR 13 × 11 = 143; 150 – 143 = 7 extra (13 × 10 + 7) = 137; 137 × 4 = £548 OR 150 × 4 = £600 13 offers so 13 free: 13 × 4 = 52; 600 – 52 = £548	Zparts £525 CompParts £548 so Zparts cheaper	5	**M1** for 15 × £35 (= £525) **M1** for attempt to account for 1 free (eg ÷ 11 or listing with 10 charged and one not) **M1** for ×4 (may be shown as ×40) **A1** for totals of £548 and £525 OR unit costs of £3.64/£3.63 and £3.50 (oe)

			C1 (dep on at least M1) for making comparison figures clear and giving correct deduction.
			Total for Question: 5 marks

M12.

Working	Answer	Mark	Additional Guidance
Ticket sales: 16 × 100 = £1600 Meals: 12 × 100 = 1200 Fixed costs: 230 + 150 + 30 = 410; 410 + 1200 = 1610 or 1600 – 230 – 150 – 30 = 1190; 1190 – 1200 = –10 Total 410 + 1200 = £1610 (< £1600) OR £1610 ÷ 100 = £16.10 ticket price (> £16) OR £1600 – 410 – 1200 = – £10 (or £10 needed) OR £1600 – 1200 = £400 (< £410 costs)	No. £1610 >£1600 £410 >£400	4	M1 for addition of 230, 150, 30 (or + 410) (= 422 or 800) M1 for 12 × 100 (= 1200) A1 for £1610 total costs or £16.10 ticket price needed. C1 (dep on at least M1) for correct comparison and statement that "£1610" > "£1600" and that costs will not be covered. OR M1 for subtraction of 230, 150, 30 (or – 410) M1 for 12 × 100 (= 1200) A1 for £400 left or – £10 C1 (dep on at least M1) for correct comparison and statement that "£410" > "£400" and that costs will not be covered.
			Total for Question: 4 marks

M13.

	Working	Answer	Mark	Additional Guidance
FE	Days 3ʳᵈ Apr to 30ᵗʰ Jun is 28 + 31 + 30 = 89 days Cost of days ="89" × 15.07p = £13.41 Units used 10625 – 8963 = 1662 Cost of units = 1662 × 11.85 = £196.95 196.95 + 13.41	£210.36	6	**M1** for attempt to find the number of days **M1** for standing charge = "89" × 15.07p **M1** for attempt to find the number of units used **M1** for attempt to find cost of units "1662" × 11.85p **A1** for standing charge = "13.41" or unit cost = £196.95 **A1** for £210.36 cao
				Total for Question: 6 marks

M14.

	Working	Answer	Mark	Additional Guidance
(a)	64 × 75m = 4800m 4800 ÷ 1000	4.8 km	3	**M1** for 64 × 75 **M1** for "64 × 75" ÷ 1000 **A1** cao
(b)	Vol = 25 × 10 × 2.5= 625m³ 625 × 1000	625 000	3	**M1** for attempt at finding the volume **M1** for attempt to find the number of *l* in 1m³ or 1m³ = 1000*l* **A1** cao
				Total for Question: 6 marks

M15.

	Working	Answer	Mark	Additional Guidance
QWC (i, ii, iii) **FE**	10 × £5.99 = £59.90 10 × 120 – 80 = 40 80 × £0.99 = £79.20 40 × £0.75 = £30 £79.20 + £30 – £59.90 **OR** 5.99 ÷ 12 = 50p (approx) 10 × 12 – 80 = 40 80 × ("99 – 50")= £39.20 40 × ("75 – 50") = £10	£49.30 profit	5	**M1** for attempt to find original cost of water **M1** for attempt to find cost of sale of first 80 bottles **M1** for attempt to find number of remaining bottles 10 × 12 – 80 oe **M1** for attempt to find cost of cost of sale of remaining bottles **A1** cao **QWC: Decision must be stated with clear working attributed correctly** **OR** **M1** for 5.99 ÷ 12 = approx 50p **M1** for attempt to find profit on sale of first 80 bottles **M1** for attempt to find number of remaining bottles **M1** for attempt to find profit on sale of remaining bottles **A1** cao **QWC: Decision must be stated with clear working attributed correctly**
				Total for Question: 5 marks

M16.

Working	Answer	Mark	Additional Guidance
(3 + 2) × 48 = 240 240 – 35	215	3	**M1** for attempt to find total number of bags of crisps **M1** for attempt to subtract 25 **A1** cao 3
			Total for Question: 3 marks

M17.

		Working	Answer	Mark	Additional Guidance
FE	(a)	200 bags = 40 × 5, cost = £0.85 × 5 = £4.25 or 80 × 2 + 40 × 1, cost = £1.65 × 2 + £0.85 = £3.30 + £0.85 = £4.15 or 160 × 1 + 40 × 1, cost = £3.40 + £0.85 = £4.25 **OR** Using the 80 bag packet is least expensive since: £1.65 < £0.85 × 2 (£1.70) and £1.65× 2 = £3.30 < £3.40 Therefore 2 80 bag packets + 1 40 bag packet will be needed to get the least expensive total cost.	80 × 2 + 40 × 1 is the least expensive	4	**B1** for at least 2 alternative ways of getting 200 bags **M1** for a correct process to work out the cost of 1 way **A1** for the 3 correct total costs **C1** for justification that 80 × 2 + 40 × 1 is the least expensive, therefore giving Tommy the greatest change **OR** **M1** for comparing the cost of 2 40 bag packets with 1 80 bag packet or 2 80 bag packets with 1 1600 bag packet **A1** for correct arithmetic giving accurate costs **C1** for justification that using 80 bag packets gives thy least expensive way **B1** for 80 bags × 2 + 40 bag × 1

		Working	Answer	Mark	Additional Guidance
(b)		57 + 48 × 2 – 125 = 153 – 125 = 28 pkts on shelf 72 – 28 = 44 pkts on shelf at end of day **OR** 57 + 48 + 48 = 105 + 48 = 153 153 – 125 = 28 pkts on shelf 72 – 28 = 44 pkts on shelf at end of day **OR** When there are 72 – 48 = 24 pkts on shelf, a carton can opened. After selling 57 – 24 = 33, 1st carton of 48 is opened to fill the shelf to 72. After selling a further 48, 2nd carton of 48 added. 33 + 48 = 81 pkts sold. 125 – 81 = 44 pkts on shelf at end of day	Not room for the full carton	3	**M1** for 57 + 48 × 2 – 125 oe **M1** for 72 – "57 + 48 × 2 – 125 " = 44 **C1** for justification for opening another carton or not **OR** **M1** for a correct process that includes the removing of 125 pkts **M1** for calculation leading to the number of spaces remaining at the end of the day **C1** for justification for opening another carton or not

Total for Question: 7 marks

M18.

		Working	Answer	Mark	Additional Guidance
(a)		–11 + 8 OR use a number line and count back Eg: –11 –10 –9 –8 –7 –6 –4	–3°C	1	**B1** cao

−3 −2 −1 0 1			
Count 8 places			

(b)

2°C

2

Total for Question: 3 marks

M19.

	Working	Answer	Mark	Additional Guidance
(a)		Lunar Jim	1	**B1** cao
(b)	20 15 – 19 40 = 20 + 15	35	1	**B1** cao
(c)	20 30 + 45 = 21 00 + 15	21 15	1	**B1** cao
				Total for Question: 3 marks

M20.

	Working	Answer	Mark	Additional Guidance
FE	e.g. 0903 – 25 minutes = 0838 0903 0953 0953 + 3 hours = 1253 1300 1355 1355 + 25 minutes = 1420	e.g. 0838 0903 0953 1300 1355 1420	5	**B1** for a correct time 25 minutes (or more) before the train departs e.g. 0838, 0938 ... or earlier **B1** for a correct departure time, e.g. 0903, 1003... with the associated correct arrival time 0953, 1053... **B1** for a correct departure time (3 hours after arrival) e.g. 1300, 1400... **B1** for a correct arrival time corresponding to the departure time, e.g. 1355, 1455... **B1** for a correct arrival time at home, e.g. 1420, 1520...

Total for Question: 5 marks

M21.

Working	Answer	Mark	Additional Guidance
£1.70 × 5	8.50	1	**B1** for 8.50 or £8.50p, but NOT for 8.5 or 8.05
			Total for Question: 1 mark

M22.

	Working	Answer	Mark	Additional Guidance
(i)	9 – 5	4	3	**B1** for 4 cao
(ii)	20 ÷ 10	2		**B1** for 2 cao
(iii)	7 + 2	9		**B1** for 9 cao
				Total for Question: 3 marks

M23.

Working	Answer	Mark	Additional Guidance
1.6 + 8.4	10	2	**B2** for 10 (**B1** for sight of 1.6)
			Total for Question: 2 marks

M24.

Answer	Mark	Additional Guidance
11.36 22.99 18.00 91.82	4	**B1** cao **B1** cao **B1** cao (allow 18) **B1** for 91.82 or f.t. from adding at least 3 item totals (62.46 + "11.36" + " 18.00")
		Total for Question: 4 marks

M25.

	Answer	Mark	Additional Guidance
(a)	40	1	**B1** cao
(b)	19	1	**B1** cao
(c)	5	1	**B1** cao
			Total for Question: 3 marks

M26.

	Working	Answer	Mark	Additional Guidance
(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
				Total for Question: 6 marks

M27.

Working				Answer	Mark	Additional Guidance
20 × 36 = 720 4 × 36 = 144				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.
	30	6				
20	600	120	720			
4	120	24	144			
	720	144				

				[Note: Repeated addition of 24 lots of 36 (36 lots of 24) gets **M1** only] **A1** cao

Total for Question: 3 marks

M28.

	Answer	**Mark**	**Additional Guidance**
(a)	12	1	**B1** cao
(b)	24	1	**B1** cao
(c)	49	1	**B1** cao
			Total for Question: 3 marks

M29.

Working	**Answer**	**Mark**	**Additional Guidance**
30 – (16 + 9)	5	2	**M1** 30 – "(16 + 9)" or "30 – 16" – 9 or "30 – 9" – 16 **A1** cao
			Total for Question: 2 marks

M30.

	Working	Answer	Mark	Additional Guidance
FE	3 × 2.5 = 7.50 4 × 1.75 = 7 75.50 + 7.50 + 7 = 90 9 + 4.5 + 2.25 = 15.75	105.75	6	**B1** 3 and 7.50 **B1** 4 and 7 **B1** 90 ft **M1** 9 + 4.5 + 2.25 seen **A1** 15.75 **A1** cao
				Total for Question: 6 marks

M31.

Working	Answer	Mark	Additional Guidance
1.60 + 2.05 = 3.65	15p	2	**B1** £3.65 oe **B1** 15p
			Total for Question: 2 marks

M32.

			Working	Answer	Mark	Additional Guidance
FE	(a)		48 + 37 + 78 + 21 = 184 184 × 40 = 7360 4 × 12 = 48 73.60 + 48	£121.60	4	**M1** find the total miles **M1** total miles × 40 or × 0.4(0) **M1** mileage expenses + 4 × 12 or + 5 × 12 **A1** cao
	(b)		2000 ÷ 50 = 40 4000 ÷ 40 = 100 **OR** 2000 ÷ 0.4 = 50000 50000 − 50 = 100 **OR** 0.4 × 50 = 20 2000 ÷ 20 = 100	100	3	**M1** for sight of 2000 , or 50, or 20000 **M1** dep for an attempt to find cost per week or mileage per year **A1** 100 **OR** **M1** sight of 2000, or 50 **M1** dep 0.4 × 50 and 2000 ÷ '20' **A1** 100
						Total for Question: 7 marks

M33.

			Working	Answer	Mark	Additional Guidance
FE	(a)			2 correct combinations	2	**B1** Single burger and regular cola oe **B1** Regular fries and regular cola oe −1 for each extra incorrect

				Mark	Additional Guidance
(b)	Best is Cost 3.49 + 1.70 = 5.19 Change = 10.00 − 5.19		£4.81	3	**M1** 2 correct individual costs found **M1** sum and subtract from £10 **A1** cao SC B2 5.24 (B1 2 × 1.70 + 0.99 + 0.85 = (5.24))
					Total for Question: 5 marks

M34.

	Working	**Answer**	**Mark**	**Additional Guidance**
QWC **i, ii,** **iii**	50 shirts at £12 each = £600 Selling Price for profit of 30% = £12 × 1.3 = £15.60 20 shirts at £15.60 = £312 Reduced selling price = £15.60 × 0.85 = £13.26 30 shirts at £13.26 = £397.80 £397.80 + £312 > £600	Yes, together with appropriately set out working which supports answer	8	**B1** for price of 50 shirts **M1** for £12 × 1.3 **A1** for £15.60 **A1** for 20 shirts = £312 **M1** for £15.60 × 0.85 **A1** for £13.26 **A1** for 30 shirts = £397.80 **C1** Yes stated together with a statement which supports the correct answer **QWC: With clear working attributed correctly**
				Total for Question: 8 marks

E1. 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.

E2. 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.

E3. 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.

E4. Almost all candidates obtained full marks in this question. Very few candidates obtained no marks.

E5. 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.

E6.   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

E7.   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.

E8.   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.

##

It is always surprising how few candidates draw a number line to assist them in completing questions on temperature. Those who do are more successful at answering the questions. There were many correct answers in (a), but errors included those who did 8-9, those who miscounted (presumably in their head) and those who counted the wrong way. In part (b) some did the difference with the 10 am temperature, and as in the first part errors of miscounting and counting the wrong way. Most gave an explanation in part (c), and the marks were awarded on the basis of how detailed their explanation was. Many wrong answers were as a result of incorrect calculation. But many who gained the 2 marks did so by a surprising variety of answers. These included correct calculation (-2°C), use of a number line to demonstrate (in)correct numbers, and comparison of differencing (-7 to -1 is 6° but -1 to 3 is 4° so not halved). Candidates seemed to thrive on the possibility of choosing their own explanation from the data.

##

It was encouraging to see many successful attempts at this question, even from those whose arithmetic throughout the rest of the paper was poor. Partitioning methods were popular, but often contained errors caused by extra zeros. Other typical errors were 20 × 30 = 5000 instead of 6000, and 40 × 4 = 120 or 80. Grid methods were also popular, but here it was usually poor totalling that let candidates down. Repeated addition was usually unsuccessful.

##

Working in this question was frequently disorganised. A significant number started badly because they multiplied 35 by 150 rather than 15. The greatest problem was that candidates seemed to have no idea how to allow for the free stick for every ten bought; most candidates ignored this and found the cost of 150 at £4. Others decided that if buying 150 sticks then 15 of these would be free, so they found the cost of 135. To gain the final mark for the comparison examiners had to be sure which two numbers were being compared by the candidate; in many cases this was not clear.

##

It was encouraging to see many attempts at this question, which usually started with the addition of three of the costs. Misreading of the question resulted in many adding in the food cost as a single item, without multiplying out to give 1200 first. As a result 1600 was usually compared with 422 rather than 1600 with 1612. This final mark was a QWC mark for written communication: candidates had to compare their two figures and come to a stated conclusion. Those who did so with clarity gained the mark, even if the two figures they were comparing were wrong, though the two figures needed to be clearly stated.

Figures merely given without a comparative statement failed to gain the mark. The most significant weakness in this question was the inability of many candidates to multiply by 100 efficiently. Many times were grid methods seen, or long lists of repeated addition, both of these usually with errors.

E21. 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.

E22. 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 $10 \div 20$, 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.

E23. 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).

E24. 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.

E25. 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.

E26. **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.

E27. **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.

E28. 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.

E29.   **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.