Questions

Q1.

(a) Work out 17.2 + 25.8

....

(1)

(b) Work out $\frac{1}{4}$ × 60

....

(1)

(c) Write down the value of the 3 in 18.35

....

(1) **(Total for question = 3 marks)**

Q2.

*   The diagram shows the floor plan of Mary's conservatory.

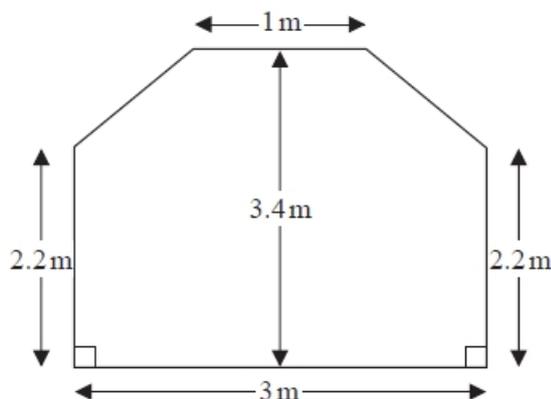

Diagram **NOT** accurately drawn

Mary is going to cover the floor with tiles.

The tiles are sold in packs.   One pack of tiles will cover 2m²   A pack of tiles normally costs £24.80
Mary gets a discount of 25% off the cost of the tiles.

Mary has £100

Does Mary have enough money to buy all the tiles she needs?
You must show all your working.

(Total for question = 5 marks)

Q3.

(a) Write down the value of 7^2

....

(1)

(b) Write down the value of $\sqrt{25}$

....

(1)

(c) Write down the value of 2^3

....

(1) **(Total for Question is 3 marks)**

Q4.

(a) Work out $2\frac{1}{7} + 1\frac{1}{4}$

....

(2)

(b) Work out $1\frac{1}{5} \div \frac{3}{4}$

Give your answer as a mixed number in its simplest form.

....

(2) **(Total for question = 4 marks)**

Q5.

There are 210 counters in a bag.   30% of these counters are red.

Work out the number of red counters in the bag.

....

(Total for question = 2 marks)

Q6.

Work out $\dfrac{(2.6 \times 10^7) - (5 \times 10^6)}{2.8 \times 10^{-3}}$

Give your answer in standard form.

....

(Total for question = 2 marks)

Q7.

Here is a bill for a dishwasher repair.
Complete the bill.

Dishwasher Repair

Description	Number	Cost of each item	Total
Filter	1	£28.95	£28.95
Basket wheel	8	£1.50	£ ....
Spray arm	2	£	£20.90
	Labour charge 1½ hours at £18.00 an hour		£ ....
	Total cost		£ ....

(Total for Question is 4 marks)

Q8.

(a) Write $\frac{1}{4}$ as a decimal.

....

(1)

(b) Write 0.15 as a fraction.

....

(1)

(c) Write 17 out of 40 as a fraction.

....

(1) **(Total for question = 3 marks)**

Q9.

Sameena has 10 m of ribbon on a reel.   She cuts 3 pieces of ribbon from the ribbon on the reel.

The lengths of the pieces are

  41 cm
  3.7 m
and 112 cm.

Work out how much ribbon Sameena will have left on the reel.

....

(Total for question = 4 marks)

Q10.

Write $\frac{4}{50}$ as a percentage.

.... % **(Total for question = 1 mark)**

Q11.

Write down an example to show that each of the following two statements is **not** correct.

(a) The factors of an even number are always even.

....

(1)

(b) All the digits in odd numbers are odd.

....

(1) **(Total for question = 2 marks)**

Q12.

(a) Write ¼ as a decimal.

....

(1)

(b) Write 0.8 as a percentage.

. . . . %

(1)

(c) Write the ratio 2 : 6 in its simplest form.

....

(1) **(Total for Question is 3 marks)**

Q13.

Balena has a garden in the shape of a circle of radius 10 m.
He is going to cover the garden with grass seed to make a lawn.
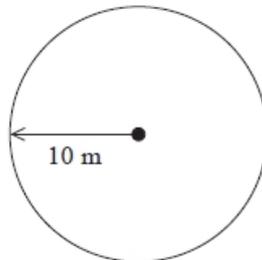
Grass seed is sold in boxes.   Each box of grass seed will cover 46 m² of garden.

Balena wants to cover all the garden with grass seed.

(a)   Work out an estimate for the number of boxes of grass seed Balena needs.

You must show your working.

....

(4)

(b)   Is your estimate for part (a) an underestimate or an overestimate?

Give a reason for your answer.

....

....

(1) **(Total for question = 5 marks)**

Q14.
What is 10% of £50?

£ . . . .

(Total for Question is 1 marks)

Q15.
Azmol is paid £1500 per month.   He is going to get a 3% increase in the amount of money he is paid.

Work out how much money Azmol will be paid per month after the increase.

£ ....

(Total for question = 2 marks)

Q16.
Here is a list of four fractions.

$$\frac{4}{16} \qquad \frac{2}{8} \qquad \frac{15}{60} \qquad \frac{3}{9}$$

One of these fractions is **not** equivalent to $\frac{1}{4}$

Write down this fraction.

....

(Total for question = 1 mark)

Q17.
Write down the first even multiple of 7

....

(Total for question = 1 mark)

Q18.
Harley's house has a value of £160 000 correct to 2 significant figures.

(a)   (i)   Write down the least possible value of the house.

£ ....

(1)

   (ii) Write down the greatest possible value of the house.

£ ....

(1)

The value of Rita's house increased by 5%.   Her house then had a value of £210 000

(b)   Work out the value of Rita's house before the increase.

£ ....

Q19.

(a) Find the lowest common multiple (LCM) of 40 and 56

....

(2)

$A = 2^3 \times 3 \times 5$ $B = 2^2 \times 3 \times 5^2$

(b) Write down the highest common factor (HCF) of A and B.

....

(1) **(Total for question = 3 marks)**

Q20.

Steve went on holiday.   He recorded the number of photos he took each day.

Here are his results.

   20   14   21   19   27   31   19   19   24   21

(a) Find the mode.

....

(1)

(b) Work out the mean.

....

(2)

Steve saves his photos on a memory card.   The memory card has 1000 megabytes of memory space.
Each photo uses 2.4 megabytes of memory space.   Steve has saved 320 photos on the memory card.

(c) Work out how many more photos Steve can save on the memory card.

....

£ ....

(3) **(Total for question = 6 marks)**

Q21.

There are 105 cars in a college car park.   Teachers own 68 of the cars.   Students own 15 of the cars.

One of the cars in the car park is chosen at random.

(a) Write down the probability that this car is owned by a teacher.

....

(1)

(b) Work out how many of the cars are **not** owned by either a teacher or by a student.

....

(2)

(c) Work out what percentage of the cars in the car park are owned by students.
Give your answer correct to 1 decimal place.

....%

(2) **(Total for question = 5 marks)**

Q22.

(a) Write down the value of $\sqrt{81}$

. . . .

(1)

(b) Work out the value of $5^2 + 2^3$

. . . .

(2)

(Total for Question is 3 marks)

Q23.

The diagram shows the distances between 4 villages *C*, *H*, *S* and *Y* on a postman's round.
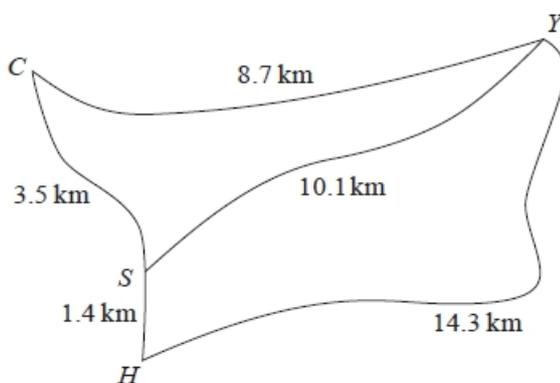

Diagram **NOT** accurately drawn

Gordon delivers letters to these 4 villages.   He starts and finishes at *C*.

Gordon wants to drive the shortest distance to deliver all his letters.

(i) Work out this shortest distance.

You must show all your working.

.... km

(ii) Write down Gordon's route.

....

(Total for question = 4 marks)

Q24.

(a) Find the value of $\sqrt{1.44 \times 3.61}$

....

(1)

(b) Find the value of $(3.54 - 0.96)^2 - 4.096$

....

(2)

(Total for question = 3 marks)

Q25.

Work out the value of $\dfrac{2.645 \times 10^9}{1.15 \times 10^3}$

Give your answer in standard form.

....

(Total for question = 2 marks)

Q26.

Here is a list of numbers.

2   3   4   12   13   14   15   22   24

(a)   From this list, write down

(i) a factor of 6

....

(ii) a multiple of 6

....

(2)

Demelza says,

"All prime numbers are odd numbers".

(b) Demelza is wrong.
Explain why.

....

....

(1)

(Total for Question is 3 marks)

Q27.
Work out the number that is halfway between 2.9 and 3.6

....

(Total for Question is 1 mark)

Q28.
Write these numbers in order of size.   Start with the smallest number.

$$\frac{3}{7} \qquad 41\% \qquad 0.45 \qquad \frac{2}{5} \qquad 0.405$$

....

(Total for question = 2 marks)

Q29.
(a) Work out   ⅖ × ⅜
   Give your answer in its simplest form.

....

(2)

(b) Work out   ⅜ + ¼

....

(2)

(Total for Question is 4 marks)

Q30.

(a) Work out 30% of 60

....

(2)

(b) Work out −15 ÷ −3

....

(1)

(c) Work out the value of 4 + 3 × (9 − 2)

....

(1)

(Total for question = 4 marks)

Q31.

Here is a list of numbers.

        1   2   4   5   8   9   12   15   16

(a) From the list, write down a prime number.

....

(1)

(b) From the list, write down **three** square numbers that add to make 21

.... , ... , ...

(2)

(Total for question = 3 marks)

Q32.

Write 56.78 correct to one significant figure.

....

(Total for question = 1 mark)

Q33.

Write 7.264 51 correct to 3 decimal places.

....

(Total for question = 1 mark)

Q34.
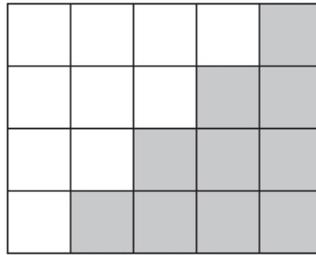
(a) What fraction of this shape is shaded?
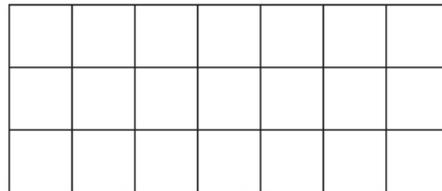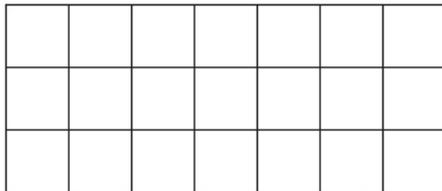
....

* (b) Here are two fractions $\dfrac{2}{3}$ and $\dfrac{5}{7}$

Which is the larger fraction?
Explain your answer.
You may use the grids below to help explain your answer.

(3)

(Total for question = 4 marks)

Q35.

* Debbie, Salma and Wendy did a Maths test.   The total for the test was 40 marks.

Debbie got 16 out of 40.   Salma got 35% of the 40 marks.   Wendy got ⅜ of the 40 marks.

Who got the highest mark?
You must show all your working.

(Total for Question is 4 marks)

Q36.

Shelley sells books.   On Saturday she is going to give a free book mark and a free dust cover with each book she sells.   All the books are the same size.

Shelley needs to buy the book marks and the dust covers.

Book marks come in boxes.   Each box contains 24 book marks.

Dust covers come in packs.   Each pack contains 36 dust covers.

Shelley wants to have enough book marks and dust covers for 250 books.   She buys exactly the same number of book marks and dust covers.

Work out the number of boxes of book marks and the number of packs of dust covers she buys.
You must show all your working.

.... boxes of book marks

.... packs of dust covers

(Total for question = 4 marks)

Q37.

Petra booked a family holiday.
The total cost of the holiday was £3500 **plus** VAT at 20%.   Petra paid £900 of the total cost when she booked the holiday.   She paid the rest of the total cost in 6 equal monthly payments.

Work out the amount of each monthly payment.

....
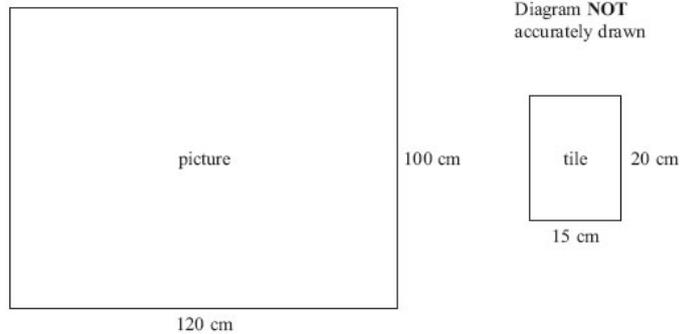
(Total for Question is 5 marks)

Q38.

A picture is made from tiles.

The diagram shows the picture in the shape of a rectangle, 120 cm by 100 cm.
It also shows a tile in the shape of a rectangle, 15 cm by 20 cm.

Diagram **NOT** accurately drawn

picture   100 cm   tile   20 cm

120 cm   15 cm

(a) Work out the number of these tiles needed to make the picture.

....

(3)

The total cost of the tiles is £52 plus VAT.
The rate of VAT is 20%.

(b) Work out 20% of £52

....

(2)

(Total for Question is 5 marks)

Q39.

$\frac{4}{5}$ of a number is 32

Find the number.

....

(Total for question = 2 marks)

Q40.

Mr Mason asks 240 Year 11 students what they want to do next year.   15% of the students want to go to college.   ¾ of the students want to stay at school.   The rest of the students do not know.

Work out the number of students who do not know.

. . . .

(Total for Question is 4 marks)

Q41.
Daniel bakes 420 cakes.   He bakes only vanilla cakes, banana cakes, lemon cakes and chocolate cakes.

$\frac{2}{7}$ of the cakes are vanilla cakes.   35% of the cakes are banana cakes.
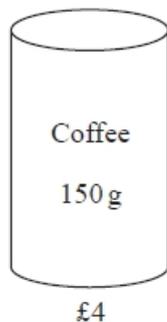
The ratio of the number of lemon cakes to the number of chocolate cakes is 4:5

Work out the number of lemon cakes Daniel bakes.

....

(Total for question = 5 marks)

Q42.
Adam owns a cafe.

Coffee 150 g   £4

Tea Bags 160 bags   £4.50

There are 150 grams of coffee in each jar of coffee, costing £4.   There are 160 tea bags in each box of tea bags, costing £4.50

Adam uses

    3 grams of coffee to make each cup of coffee   and 1 tea bag to make each mug of tea.

Adam buys enough jars of coffee to make 300 cups of coffee.
He also buys enough boxes of tea bags to make 500 mugs of tea.

(a) Work out the total cost.

£ ....

(5)

Adam also sells cakes in his cafe.

On Friday afternoon, Adam had **no** cakes to sell.   On Saturday morning, 6 trays of cakes were delivered to the cafe.   There were 30 cakes in each tray.

When the cafe closed on Saturday, 12 of these cakes had **not** been sold.

(b) Work out how many cakes were sold on Saturday.

....

(3)

(Total for question = 8 marks)

Q43.
 * Seeta is organising a concert to raise money for a school and for a hospital.

A total of $\frac{1}{20}$ of the money received from selling tickets will be spent on hiring a hall.

The rest of the money received from selling tickets will be given to the school and to the hospital in the ratio 2:3

Seeta expects to sell 1000 tickets at £23.50 each.

Work out the amount of money that Seeta expects to give to the school and to the hospital.

You must show all your working.

(Total for question = 5 marks)

Q44.
The table gives some information about Charlie's spending last month.

Item	Percentage of total spending
rent	
food	15%
transport	12%
other	43%

(a) Work out what percentage of his total spending was on rent.

.... %

(1)

Charlie's total spending last month was £800

(b) How much did Charlie spend on food last month?

£ ....

(2)   **(Total for question = 3 marks)**

Q45.
Work out   ⅗ − ⅓

....

(Total for Question is 2 marks)

Q46.
(a) Write the number 4726 in words.

....

(1)

(b) Write the number **five million** in figures.

....

(1)

(c) Write the number 3648 correct to the nearest hundred.

....

(1)

(d) Write these numbers in order of size.

Start with the smallest number.

7.47   7.6   7.04   7.58   7.69

....

(1)
(Total for question = 4 marks)

Q47.

Sarah and Greta were in a diving competition.   Here are the scores for each girl's three dives.

Sarah   8.8   9.0   9.3

Greta   9.0   9.0   9.0

Who got the higher total score, Sarah or Greta?
You must show your working.

....

(Total for Question is 2 marks)

Q48.

Kimona is going to cook some meat.   She uses this rule to work out the cooking time in minutes.

cooking time in minutes = weight of meat in kg × 40 and then add 15

Kimona wants to finish cooking the meat at 1 pm.

The weight of the meat is 1.5 kg.

Work out the latest time Kimona can start to cook the meat.

....

(Total for Question is 3 marks)

Q49.

Rani has 250 DVDs.   42% of her DVDs are thrillers.   ⅖ of her DVDs are comedies.
The rest of her DVDs are science fiction.

How many science fiction DVDs does Rani have?

....

(Total for Question is 4 marks)

Q50.

 There are 120 bricks in a box.   The bricks are red or blue or green.

⅓ of the bricks are red.   ¼ of the bricks are blue.

Work out the number of green bricks in the box.

....

(Total for Question is 4 marks)

Q51.
* Here is information about the maximum size of a small parcel.

Small parcel

Diagram **NOT**
accurately drawn

less than 2 kg

80 mm

450 mm

350 mm
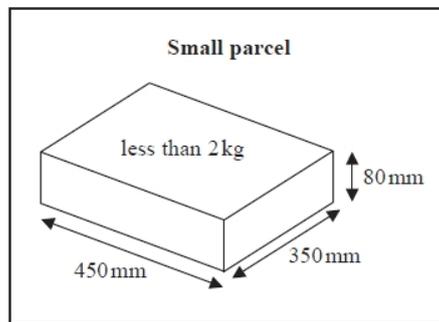
A small parcel must have

   a weight less than 2kg   and maximum dimensions 450mm by 350mm by 80mm

Kamil has three boxes.   Each box weighs 600g.   Each box is 40cm by 21cm by 2.5cm.
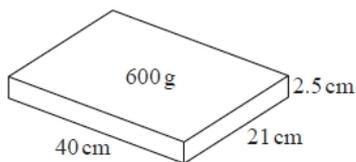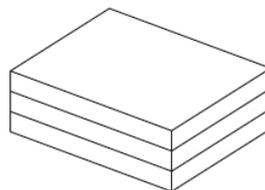

Diagram **NOT**
accurately drawn

600 g

2.5 cm

40 cm

21 cm

Kamil puts the three boxes together to make one parcel.

Kamil says that this parcel is a small parcel.   Is Kamil correct?
You must give reasons for your answer.

(Total for question = 4 marks)

Q52.

A school shop sells fruit bars for 50p each.   On Monday the shop sold 20 fruit bars.
On Tuesday the shop sold fruit bars with a total value of £13.50.

The shop sold more fruit bars on Tuesday than on Monday.

(a) How many more?

....

(3)

The table shows all the things sold in the shop.

Snacks		Drinks	
Fruit bar	50p	Lemon drink	50p
Cereal bar	65p	Water	75p
Chocolate bar	£1.20	Fruit carton	95p

Katie has two £1 coins and three 20p coins.   She has no other money.
She buys 3 cereal bars and a lemon drink.

*(b) Does Katie have enough money left to buy a fruit bar?

You must show all your working.

(4)

(Total for Question is 7 marks)

Q53.

Glen buys four tickets for a concert.   Each ticket costs £54.   Glen also has to pay a booking fee.
The booking fee is 5% of the total price of the tickets.

Work out the total amount Glen has to pay.

£..

(Total for Question is 3 marks)

Q54.

£500 is invested at a simple interest rate of 3% per year.   After how many years is the total interest
£60?

. . . . years

(Total for Question is 3 marks)

Q55.

Write these numbers in order of size.   Start with the smallest number.

　　　2.5 × 10^2　　　　　0.0025　　　　　2.5 × 10^{-2}　　　　　2500

....

(Total for question = 2 marks)

Q56.

Work out the value of 3^5

....

(Total for question = 1 mark)

Q57.

This is part of a bus timetable between Bury and Manchester.

Bury	08 25	08 55	09 15	09 30	09 45	10 05
Whitefield	08 34	09 04	09 24	09 39	09 54	10 14
Heaton Park	08 46	09 16	09 36	09 51	10 06	10 27
Cheetham	08 56	09 26	09 46	10 01	10 16	10 37
Manchester	09 05	09 35	09 55	10 10	10 25	10 48

(a) How many minutes should the 08 25 bus take to go from Bury to Manchester?

.... minutes

(1)

Daniel goes from Whitefield to Manchester by bus.

Daniel takes 17 minutes to get from his house to the bus stop in Whitefield.
He takes 15 minutes to get from the bus stop in Manchester to work.

Daniel has to get to work by 10 am.   He leaves his house at 8.45 am.

(b) Does Daniel get to work by 10 am?

　　You must show all your working.

(3)

(Total for question = 4 marks)

Q58.
Write down all the factors of 30

....

(Total for question = 2 marks)

Q59.
(a) Write down all the prime numbers between 20 and 30

....

(2)

Catherine says,

"2 is the only even prime number."

(b) Is Catherine right?

You must give a reason for your answer.

....

....

(1)

(Total for question = 3 marks)

Q60.
(a) Write the number 20 400 in words.

....

(1)

(b) Work out   3 × −7

....

(1)

(c) Work out   3 × (2 + 7)

....

(1)

(d) Find the value of 2^4

....

(1)

Here is a list of numbers.

4   5   8   9   12

(e) From the list, write down the prime number.

....

(1)

(f) Write the ratio 2 : 6 in its simplest form.

....

(1)

(Total for Question is 6 marks)