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EDEXCEL GCSE (9-1) MATHS: QUESTIONS BY TOPIC

Fractions, Decimals & Percentages (N2)

GCSE (9-1) Mathematics (1MA1) · Foundation tier

166 questions · 399 marks · Mark schemes included

Past papers June 2017 - June 2025 · 3 sub-topics

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HOW TO USE THIS BOOKLET

Questions are grouped by sub-topic and run from the lowest to the highest mark tariff, then oldest paper first.
Click any row below to jump straight to that sub-topic or question.
On every question page, click ANSWER in the top-right corner to jump to its mark scheme; < QUESTION brings you back.
A gold bar in the left margin marks exactly where the question sits on the original page.
Diagrams, graphs, grids and tables are printed exactly as they appear in the original papers.
Each question is filed under its main topic; longer questions may also test skills from other topics.

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QUESTIONS

166 questions · 399 marks · 3 sub-topics

SUB-TOPIC N2a

FRACTIONS

Sub-topic N2a · 57 questions · 137 marks · lowest tariff first

4 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 4 is 1 mark)

5 Write down the first even multiple of 7

.....

(Total for Question 5 is 1 mark)

6 (a) Simplify $3 \times 4t$

.....

(1)

(b) Simplify $8a - 3a + 2a$

.....

(1)

(Total for Question 6 is 2 marks)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write a number in each box to make the calculation correct.

(i) $56.3 + \square = 100$

(1)

(ii) $\frac{2}{7} + \square = 1$

(1)

(Total for Question 1 is 2 marks)

2 Write 3% as a fraction.

.....

(Total for Question 2 is 1 mark)

3 Find $\sqrt{1.44}$

.....

(Total for Question 3 is 1 mark)

4 Work out $\frac{1}{8}$ of 720

.....

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write down the value of the 7 in the number 1074

.....

(Total for Question 1 is 1 mark)

2 Write 4.58 correct to 1 decimal place.

.....

(Total for Question 2 is 1 mark)

3 Work out 31.7×100

.....

(Total for Question 3 is 1 mark)

4 Write the fraction $\frac{28}{70}$ in its simplest form.

.....

(Total for Question 4 is 1 mark)

5 Write 15% as a decimal.

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write down two factors of 12

..... , ...

(Total for Question 1 is 1 mark)

2 Find $\frac{1}{3}$ of 30

.....

(Total for Question 2 is 1 mark)

3 Write 0.7 as a fraction.

.....

(Total for Question 3 is 1 mark)

4 Here is a list of numbers.

7 8 15 16 18 22

Write down the number from the list that is a multiple of 6

.....

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Change 300 centimetres into metres.

..... metres

(Total for Question 1 is 1 mark)

2 Work out $\frac{1}{3}$ of 24

.....

(Total for Question 2 is 1 mark)

3 Write 40% as a fraction.

.....

(Total for Question 3 is 1 mark)

4 Work out 2.5^2

.....

(Total for Question 4 is 1 mark)

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

1 −4 0 7 −6 −3 2

.....

(Total for Question 5 is 1 mark)

9 Alec needs to work out the value of $2 + 3 \times 4$

He writes

$$2 + 3 = 5 \text{ and } 5 \times 4 = 20, \text{ so } 2 + 3 \times 4 = 20$$

Alec is wrong.
Explain why.

.....

.....

.....

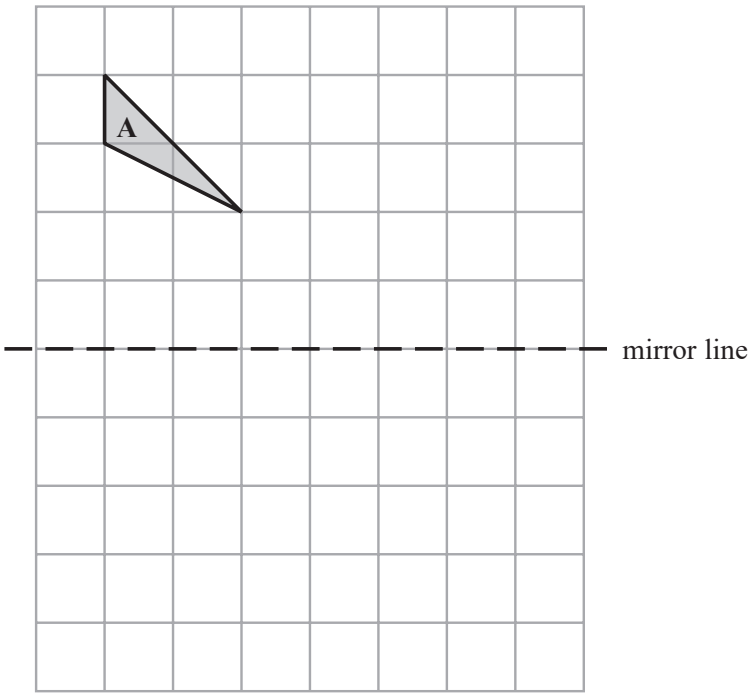
(Total for Question 9 is 1 mark)

10 Write 17 as a fraction of 30

.....

(Total for Question 10 is 1 mark)

11 Reflect shape **A** in the mirror line.



(Total for Question 11 is 2 marks)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 45% as a decimal.

.....

(Total for Question 1 is 1 mark)

2 Write down two factors of 35

.....

(Total for Question 2 is 1 mark)

3 What is the time 2 hours 40 minutes after 8.05 am?

..... am

(Total for Question 3 is 1 mark)

4 Work out $\frac{1}{6}$ of 66

.....

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 1476 to the nearest 10

.....

(Total for Question 1 is 1 mark)

2 Write a fraction in the box to make the calculation correct.

$1 - \frac{3}{10} = \square$

(Total for Question 2 is 1 mark)

3 Here is a list of numbers.

3 3 3 3 4 4 5 7 8

Write down the mode of the numbers.

.....

(Total for Question 3 is 1 mark)

4 Write down a 3 digit number that is a multiple of 5

.....

(Total for Question 4 is 1 mark)

5 Write 0.4 as a percentage.

.....%

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 35% as a fraction.

.....

(Total for Question 1 is 1 mark)

2 Work out $\frac{1}{4}$ of 28

.....

(Total for Question 2 is 1 mark)

3 Write down two factors of 12

....

(Total for Question 3 is 1 mark)

4 Simplify $2m \times 3$

.....

(Total for Question 4 is 1 mark)

5 Find $\sqrt{1.69}$

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

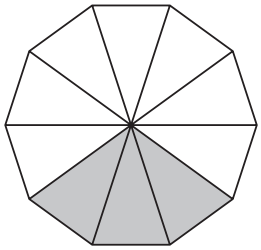
You must write down all the stages in your working.

1 Write 38% as a decimal.

.....

(Total for Question 1 is 1 mark)

2 What fraction of this shape is shaded?



.....

(Total for Question 2 is 1 mark)

3 Here is a list of numbers.

1.6 1.4 2.1 0.5 1.3

From the list, write down the smallest number.

.....

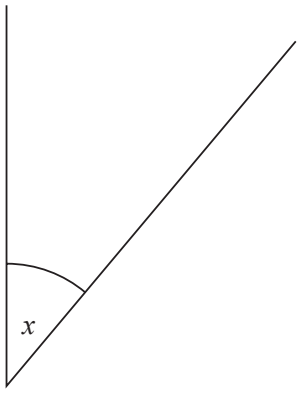
(Total for Question 3 is 1 mark)

4 Work out $-9 + 5$

.....

(Total for Question 4 is 1 mark)

4 Measure the size of the angle marked x.



.....°

(Total for Question 4 is 1 mark)

5 Work out $\frac{1}{5}$ of 300

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 35% as a decimal.

.....

(Total for Question 1 is 1 mark)

2 Write 8061 correct to the nearest hundred.

.....

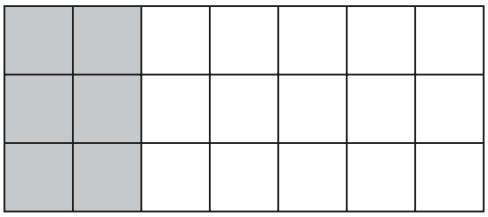
(Total for Question 2 is 1 mark)

3 Write down a number that is less than –5

.....

(Total for Question 3 is 1 mark)

4 Here is a grid of squares.



What fraction of the grid is shaded?

.....

(Total for Question 4 is 1 mark)

5 Write down the value of the 9 in the number 27.963

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 23% as a fraction.

.....

(Total for Question 1 is 1 mark)

2 Change 800 centimetres to metres.

..... metres

(Total for Question 2 is 1 mark)

3 Write down the value of the 3 in the number 62 837

.....

(Total for Question 3 is 1 mark)

4 Simplify $7a + a - 5a$

.....

(Total for Question 4 is 1 mark)

5 Write the following fractions in order of size.
Start with the smallest fraction.

$$\frac{1}{2} \qquad \frac{2}{3} \qquad \frac{1}{4}$$

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write down the value of the 7 in the number 3721

.....

(Total for Question 1 is 1 mark)

2 Work out $\frac{1}{6}$ of 96

.....

(Total for Question 2 is 1 mark)

3 Write down **two** factors of 16

.....

(Total for Question 3 is 1 mark)

4 Write the following numbers in order.
Start with the lowest number.

-3 4 -7 6 0

.....

(Total for Question 4 is 1 mark)

5 Find the value of $\sqrt{2.25}$

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write down the value of the 7 in the number 49.715

.....

(Total for Question 1 is 1 mark)

2 Find $\sqrt{5.76}$

.....

(Total for Question 2 is 1 mark)

3 Write 19% as a fraction.

.....

(Total for Question 3 is 1 mark)

4 Here are some fractions.

$$\frac{3}{9} \quad \frac{6}{18} \quad \frac{2}{6} \quad \frac{4}{10} \quad \frac{5}{15}$$

Which one of these fractions is **not** equivalent to $\frac{1}{3}$?

.....

(Total for Question 4 is 1 mark)

4 Here are four fractions.

$$\frac{2}{5} \qquad \frac{11}{30} \qquad \frac{1}{2} \qquad \frac{7}{15}$$

Write these fractions in order of size.
Start with the smallest fraction.

.....

(Total for Question 4 is 2 marks)

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

Find the number.

.....

(Total for Question 4 is 2 marks)

5 A path is made of white tiles and grey tiles.

$\frac{1}{4}$ of the tiles are white.

(a) Write down the ratio of white tiles to grey tiles.

.....

(1)

There is a total of 56 tiles.

(b) Work out the number of grey tiles.

.....

(2)

(Total for Question 5 is 3 marks)

9 Nidah writes down two different prime numbers.

She adds together her two numbers.
Her answer is a square number less than 30

Find two prime numbers that Nidah could have written down.

..... , ...

(Total for Question 9 is 2 marks)

10 Jim thinks of a number.

$\frac{2}{3}$ of Jim's number is 48

Work out $\frac{5}{6}$ of Jim's number.

.....

(Total for Question 10 is 2 marks)

11 Last year the cost of a season ticket for a football club was £560
This year the cost of a season ticket for the club has been increased to £600

Write down the increase in the cost of a season ticket as a fraction of last year's cost.

.....

(Total for Question 11 is 2 marks)

6 Here are four fractions.

$$\frac{3}{4} \qquad \frac{5}{7} \qquad \frac{19}{25} \qquad \frac{11}{15}$$

Write the fractions in order of size.
Start with the smallest fraction.

.....

(Total for Question 6 is 2 marks)

7 (a) Simplify $3m - m - m + 3m$

.....

(1)

(b) Simplify $2 \times n \times p \times 4$

.....

(1)

(Total for Question 7 is 2 marks)

8 A map has a scale of 1 cm to 14 km.

On the map, the distance between Manchester and London is 18.8 cm.

What is the real distance, in km, between Manchester and London?

..... km

(Total for Question 8 is 2 marks)

8 Write the following fractions in order of size.
Start with the smallest fraction.

$\frac{1}{3}$ $\frac{3}{4}$ $\frac{1}{4}$ $\frac{7}{12}$ $\frac{1}{2}$

.....

(Total for Question 8 is 2 marks)

9 Ruth left her home at 9 am and walked to the library.
She got to the library at 10 30 am.
Ruth walked at a speed of 4 mph.

(a) Work out the distance Ruth walked.

..... miles
(2)

Ruth got to the library at 10 30 am.
She stayed at the library for 50 minutes.
Then she walked home.
Ruth took $1\frac{1}{4}$ hours to walk home.

(b) At what time did Ruth get home?

.....
(2)

(Total for Question 9 is 4 marks)

13 The length of a line is x centimetres.

Write down an expression, in terms of x, for the length of the line in millimetres.

.....

(Total for Question 13 is 1 mark)

14 (a) Work out $\frac{1}{5}$ of 70

.....

(1)

Fiona has to work out the exact value of $48 \div \frac{1}{2}$

She writes

$$48 \div \frac{1}{2} = 24$$

Fiona's reason is,

"There are 2 halves in 1, so there will be 24 halves in 48"

(b) Explain what is wrong with Fiona's reason.

.....

.....

.....

(1)

(Total for Question 14 is 2 marks)

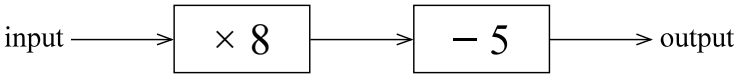
7 Harry has 20 sweets.
He gives 7 of the sweets to Nadia.

What fraction of the 20 sweets does Harry have now?

.....

(Total for Question 7 is 2 marks)

8 Here is a number machine.

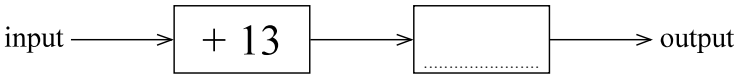


(a) Work out the output when the input is 6

.....

(1)

Here is a different number machine.



When the input is 17, the output is 10

(b) Complete the number machine.

(1)

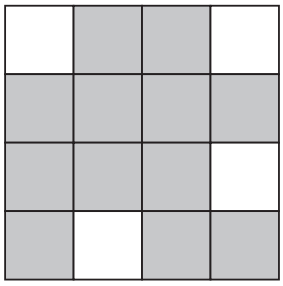
(Total for Question 8 is 2 marks)

12 Find the number that is exactly halfway between $\frac{1}{10}$ and $\frac{3}{5}$

.....

(Total for Question 12 is 2 marks)

7



What fraction of the shape is shaded?
Give your answer in its simplest form.

.....

(Total for Question 7 is 2 marks)

8 Karim buys 200 tiles.

The tiles are sold in boxes.
There are 25 tiles in each box.
Each box of tiles costs £9.75

Work out the total cost of the boxes of tiles Karim buys.

£ .....

(Total for Question 8 is 3 marks)

15 Write the following fractions in order of size.
Start with the smallest fraction.

$\frac{5}{8}$ $\frac{2}{3}$ $\frac{4}{9}$ $\frac{3}{5}$

.....

(Total for Question 15 is 2 marks)

11 Sinita wants to make 35 picture frames.
She needs 4 nails for each frame.

Sinita has 3 boxes of nails.
There are 48 nails in each box.

Has Sinita got enough nails to make all 35 frames?
Show how you get your answer.

(Total for Question 11 is 3 marks)

12 Write 60 metres as a fraction of 1000 metres.
Give your answer in its simplest form.

.....

(Total for Question 12 is 2 marks)

15 Work out $\frac{6}{7} \times \frac{5}{12}$

Give your answer as a fraction in its simplest form.

.....

(Total for Question 15 is 2 marks)

16 Here is the list of ingredients for making 20 biscuits.

Ingredients for 20 biscuits
150 g butter 100 g sugar 250 g flour

Harry wants to make 60 biscuits.

How much flour does Harry need?

..... g

(Total for Question 16 is 2 marks)

13 There are 50 teachers in a school.

This is $\frac{1}{16}$ of the total number of people in the school.

Work out the total number of people in the school.

.....

(Total for Question 13 is 2 marks)

7 Fahima buys

2 packets of bread rolls costing £1.50 for each packet
1 bottle of ketchup costing £1.60
3 packets of sausages

Fahima pays with a £10 note.
She gets 30p change.

Fahima works out that one packet of sausages costs £2.30

Is Fahima right?
You must show how you get your answer.

(Total for Question 7 is 3 marks)

8 (a) Work out $\frac{5}{8} \times \frac{3}{4}$

.....

(1)

(b) Work out $\frac{2}{3} - \frac{1}{4}$

.....

(2)

(Total for Question 8 is 3 marks)

13 The total surface area of a cube is 294 cm^2.

Work out the volume of the cube.

..... cm^3

(Total for Question 13 is 4 marks)

14 Here are two fractions.

$$\frac{7}{5} \qquad \frac{5}{7}$$

Work out which of the fractions is closer to 1
You must show all your working.

(Total for Question 14 is 3 marks)

22 (a) Work out $\frac{2}{5} + \frac{1}{4}$

.....

(2)

(b) Write down the value of 2^{-3}

.....

(1)

(Total for Question 22 is 3 marks)

23 Write 36 as a product of its prime factors.

.....

(Total for Question 23 is 2 marks)

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

.....

(1)

(b) Work out 2^3

.....

(1)

(c) Write brackets ( ) in this statement to make it correct.

$$7 \times 2 + 3 = 35$$

(1)

(Total for Question 5 is 3 marks)

6 Sue has 2 cats.

Each cat eats $\frac{1}{4}$ of a tin of cat food each day.

Sue buys 8 tins of cat food.

Has Sue bought enough cat food to feed her 2 cats for 14 days?
You must show how you get your answer.

(Total for Question 6 is 3 marks)

11 Here are some fractions.

$$\frac{9}{12} \qquad \frac{6}{8} \qquad \frac{18}{24} \qquad \frac{10}{16} \qquad \frac{15}{20}$$

One of these fractions is **not** equivalent to $\frac{3}{4}$

(a) Which fraction?

.....

(1)

(b) Work out $\frac{1}{12} + \frac{5}{6}$

.....

(2)

(Total for Question 11 is 3 marks)

6 Work out 20% of 80

.....

(Total for Question 6 is 2 marks)

7 There are four types of counter in a bag.

The table shows the number of each type of counter in the bag.

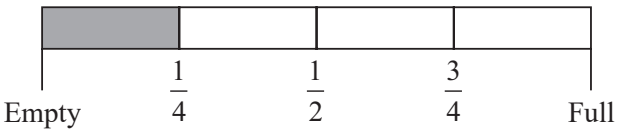
Type of counter	red circle	green circle	red square	green square
Number of counters	16	26	11	7

There are more green counters than red counters.
How many more?

.....

(Total for Question 7 is 2 marks)

8 Here is the gauge for the fuel tank of a car.



The fuel tank holds 52 litres of fuel when the tank is full.

The tank is $\frac{1}{4}$ full of fuel.

Work out how many more litres of fuel are needed to fill the tank.

..... litres

(Total for Question 8 is 3 marks)

9 Simplify $4e + 6f + 7e - f$

.....

(Total for Question 9 is 2 marks)

10 Bill has 400 counters in a bag.

He gives
35 of the counters to Sameena
50 of the counters to Henry
75 of the counters to Lucas

What fraction of the 400 counters is left in Bill's bag?
Give your fraction in its simplest form.

.....

(Total for Question 10 is 3 marks)

21 There are 60 people in a choir.
Half of the people in the choir are women.

The number of women in the choir is 3 times the number of men in the choir.
The rest of the people in the choir are children.

the number of children in the choir : the number of men in the choir = n : 1

Work out the value of n.
You must show how you get your answer.

n = ...

(Total for Question 21 is 4 marks)

22 Work out $1\frac{3}{4} \times 1\frac{1}{3}$

Give your answer as a mixed number.

.....

(Total for Question 22 is 3 marks)

20 The first five terms of an arithmetic sequence are

1 4 7 10 13

Write down an expression, in terms of n, for the nth term of this sequence.

.....

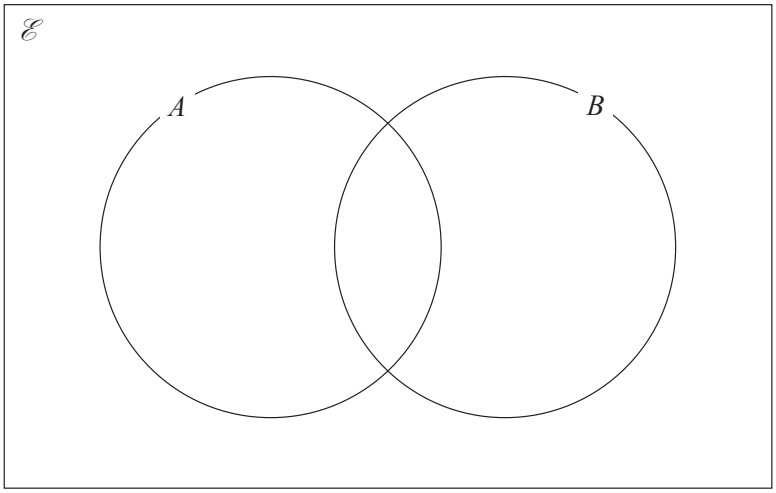
(Total for Question 20 is 2 marks)

21 Show that $2\frac{1}{3} \times 3\frac{3}{4} = 8\frac{3}{4}$

(Total for Question 21 is 3 marks)

21 $\mathscr{E}$ = {even numbers less than 19}
A = {6, 12, 18}
B = {2, 6, 14, 18}

Complete the Venn diagram for this information.



(Total for Question 21 is 3 marks)

22 Work out $4\frac{1}{5} - 2\frac{2}{3}$

Give your answer as a mixed number.

.....

(Total for Question 22 is 3 marks)

14 A stadium cost £600 million.

$\frac{13}{15}$ of this cost was for the building.

The rest of the cost was for the land.

Work out the cost of the land.

£..... million

(Total for Question 14 is 3 marks)

15 Jenna measures all the angles around a point.

Her results are 23°, 145°, 23° and 69°

Explain why these results cannot be true.

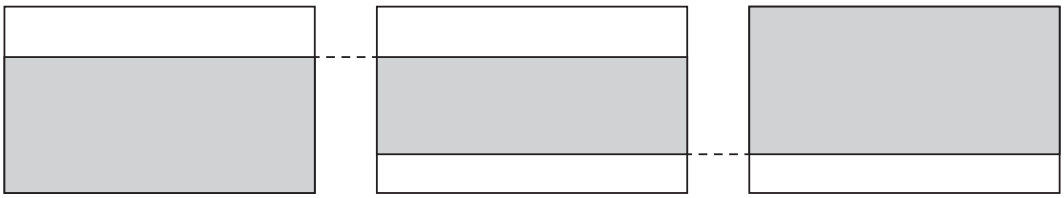
.....

.....

.....

(Total for Question 15 is 1 mark)

20 The diagram shows three identical rectangles **A**, **B** and **C**.



Rectangle **A** Rectangle **B** Rectangle **C**

$\frac{5}{8}$ of rectangle **A** is shaded.

$\frac{9}{11}$ of rectangle **C** is shaded.

Work out the fraction of rectangle **B** that is shaded.

.....

(Total for Question 20 is 3 marks)

7 208 bars of chocolate were sold from a shop.

$\frac{1}{4}$ of these bars of chocolate were large bars.
The rest of the bars of chocolate were small bars.

All the large bars of chocolate were sold for £1 each.
All the small bars of chocolate were sold for 60p each.

Work out the total amount of money for which the 208 bars of chocolate were sold.
Give your answer in pounds.

£.....

(Total for Question 7 is 3 marks)

21 Work out $7\frac{3}{8} - 2\frac{1}{2}$

Give your answer as a mixed number.

.....

(Total for Question 21 is 3 marks)

22 A cube has a total surface area of $150\,cm^2$

Work out the volume of the cube.

..... cm^3

(Total for Question 22 is 4 marks)

17 Work out $\frac{3}{5} \div \frac{1}{6}$

Give your answer as a mixed number.

.....

(Total for Question 17 is 3 marks)

18 Work out 6.3×2.4

.....

(Total for Question 18 is 3 marks)

21 (a) Work out $3\frac{4}{5} - 1\frac{2}{3}$

.....

(2)

Kevin was asked to work out $2\frac{1}{3} \times \frac{5}{8}$

Here is his working and his answer.

$$2\frac{1}{3} \times \frac{5}{8} = \frac{7}{3} \times \frac{5}{8}$$

$$= \frac{35}{24}$$

$$= 1\frac{9}{24}$$

Kevin's answer is wrong.

(b) What mistake has Kevin made?

.....

.....

.....

(1)

(Total for Question 21 is 3 marks)

12 Saira buys 24 bars of chocolate.

$\frac{2}{3}$ of the 24 bars are white chocolate.

The rest of the 24 bars are milk chocolate.

Each milk chocolate bar has a weight of 35 grams.

Work out the total weight of the milk chocolate bars that Saira buys.

..... grams

(Total for Question 12 is 3 marks)

13 (a) Simplify $2c \times 3d$

.....

(1)

$T = x + 2y$

$x = 3$ and $y = -4$

(b) Work out the value of T.

$T =$ .....

(2)

(Total for Question 13 is 3 marks)

24 This year the total weight of potatoes grown on a farm is $\frac{1}{5}$ less than last year.

This year the total weight of potatoes grown is 8000 tonnes.

Work out the total weight of potatoes grown last year.

..... tonnes

(Total for Question 24 is 3 marks)

15 There are 200 counters in a bag.

87 of the counters are green.
24 of the counters are yellow.

(a) What fraction of the counters are green?

.....

(1)

(b) What percentage of the counters are yellow?

..... %

(1)

(Total for Question 15 is 2 marks)

16 A team plays 48 games.

The team wins $\frac{3}{8}$ of the 48 games.

The number of games the team loses is the same as the number of games the team draws.

Work out the number of games the team loses.

.....

(Total for Question 16 is 3 marks)

6 There are 495 coins in a bottle.

$\frac{1}{3}$ of the coins are £1 coins.

124 of the coins are 50p coins.

The rest of the coins are 20p coins.

Work out the total value of the 495 coins.

£.....

(Total for Question 6 is 4 marks)

19 (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 19 is 4 marks)

19 (a) Work out $\frac{2}{3} - \frac{1}{5}$

.....

(2)

(b) Work out $\frac{2}{3} \times \frac{3}{4}$

Give your answer as a fraction in its simplest form.

.....

(2)

(Total for Question 19 is 4 marks)

9 (a) A bag contains red counters and blue counters only.

number of red counters : number of blue counters = 3 : 4

Write down the fraction of the counters that are red.

.....

(1)

(b) Write the ratio 12 : 30 in the form 1 : n

.....

(2)

(Total for Question 9 is 3 marks)

10 Jenny has 12 marbles.

$\frac{1}{4}$ of these 12 marbles are large.

The rest of these 12 marbles are small.

Each large marble has a weight of 70 grams.
Each small marble has a weight of 50 grams.

Work out the total weight of the 12 marbles.

..... grams

(Total for Question 10 is 4 marks)

12 (a) Work out $\frac{5}{12} + \frac{1}{6}$

.....

(2)

(b) Work out $\frac{3}{10} \times \frac{5}{8}$

Give your answer as a fraction in its simplest form.

.....

(2)

(Total for Question 12 is 4 marks)

20 (a) Work out $1\frac{3}{5} + 2\frac{1}{4}$

Give your answer as a mixed number.

.....

(2)

(b) Show that $2\frac{2}{3} \div 6 = \frac{4}{9}$

(2)

(Total for Question 20 is 4 marks)

12 (a) Work out $\frac{5}{8}$ of 132

.....

(2)

(b) Write the following fractions in order of size.
Start with the smallest fraction.

$\frac{3}{8}$ $\frac{9}{32}$ $\frac{1}{4}$ $\frac{21}{64}$

.....

(2)

(Total for Question 12 is 4 marks)

10 (a) Write 23 619 to the nearest 1000

.....

(1)

(b) Work out an estimate for the value of 5.9×98.1

.....

(2)

(Total for Question 10 is 3 marks)

11 (a) Work out $\frac{5}{8} - \frac{1}{4}$

.....

(2)

(b) Work out $\frac{2}{5}$ of 40

.....

(2)

(Total for Question 11 is 4 marks)

20 (a) Work out $3\frac{1}{2} - 1\frac{1}{6}$

Give your answer as a mixed number.

.....

(2)

(b) Show that $5\frac{1}{4} \div 2\frac{1}{3} = 2\frac{1}{4}$

(3)

(Total for Question 20 is 5 marks)

SUB-TOPIC N2b

DECIMALS & CONVERSIONS

Sub-topic N2b · 23 questions · 39 marks · lowest tariff first

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write $\frac{7}{100}$ as a decimal.

.....

(Total for Question 1 is 1 mark)

2 Write down a multiple of 6 that is between 40 and 50

.....

(Total for Question 2 is 1 mark)

3 (a) Simplify $3f \times 5g$

.....

(1)

(b) Simplify $t \times t$

.....

(1)

(c) Simplify $\frac{2n + 6n}{2}$

.....

(1)

(Total for Question 3 is 3 marks)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write $\frac{9}{10}$ as a decimal.

.....

(Total for Question 1 is 1 mark)

2 Write 0.3 as a percentage.

..... %

(Total for Question 2 is 1 mark)

3 Write the number 2538 correct to the nearest hundred.

.....

(Total for Question 3 is 1 mark)

4 Here are the first 4 terms of a sequence.

2 9 16 23

(a) (i) Write down the next term in the sequence.

.....

(1)

(ii) Explain how you got your answer.

.....

(1)

(b) Work out the 10th term of the sequence.

.....

(1)

(Total for Question 4 is 3 marks)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write down the value of the 4 in the number 542.3

.....

(Total for Question 1 is 1 mark)

2 Write down a square number that is also an odd number.

.....

(Total for Question 2 is 1 mark)

3 (a) Change 4560 g into kg.

..... kg

(1)

(b) Change 7.3 m into mm.

..... mm

(1)

(Total for Question 3 is 2 marks)

4 Work out the cube root of 64

.....

(Total for Question 4 is 1 mark)

5 Write 0.31 as a fraction.

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write a number in each box to make the calculation correct.

(i) $56.3 + \square = 100$

(1)

(ii) $\frac{2}{7} + \square = 1$

(1)

(Total for Question 1 is 2 marks)

2 Write 3% as a fraction.

.....

(Total for Question 2 is 1 mark)

3 Find $\sqrt{1.44}$

.....

(Total for Question 3 is 1 mark)

4 Work out $\frac{1}{8}$ of 720

.....

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 0.75 as a fraction.

.....

(Total for Question 1 is 1 mark)

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

–3 4 0 –1 2

.....

(Total for Question 2 is 1 mark)

3 Write down two factors of 15

.....

(Total for Question 3 is 1 mark)

4 Change 1756 grams to kilograms.

..... kg

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write down two factors of 12

..... , ...

(Total for Question 1 is 1 mark)

2 Find $\frac{1}{3}$ of 30

.....

(Total for Question 2 is 1 mark)

3 Write 0.7 as a fraction.

.....

(Total for Question 3 is 1 mark)

4 Here is a list of numbers.

7 8 15 16 18 22

Write down the number from the list that is a multiple of 6

.....

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

0.32 0.4 0.35 0.309

.....

(Total for Question 1 is 1 mark)

2 Here is a list of numbers.

5 11 18 22 29

From the list, write down a multiple of 3

.....

(Total for Question 2 is 1 mark)

3 Write 4.666 correct to the nearest whole number.

.....

(Total for Question 3 is 1 mark)

4 Write $\frac{3}{4}$ as a decimal.

.....

(Total for Question 4 is 1 mark)

5 Write down the value of the 7 in the number 8765

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 0.37 as a fraction.

.....

(Total for Question 1 is 1 mark)

2 Write 29 381 correct to the nearest 1000

.....

(Total for Question 2 is 1 mark)

3 Simplify $3e - e + 4e$

.....

(Total for Question 3 is 1 mark)

4 Write $\frac{1}{4}$ as a percentage.

..... %

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write $\frac{3}{10}$ as a percentage.

.....%

(Total for Question 1 is 1 mark)

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

8 –7 –10 1 0 –2

.....

(Total for Question 2 is 1 mark)

3 Write $\frac{9}{100}$ as a decimal.

.....

(Total for Question 3 is 1 mark)

4 Write 327 correct to the nearest ten.

.....

(Total for Question 4 is 1 mark)

5 Write down the value of 7^2

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 0.3 as a fraction.

.....

(Total for Question 1 is 1 mark)

2 Work out 3^2

.....

(Total for Question 2 is 1 mark)

3 Work out $20 \div (3 + 2)$

.....

(Total for Question 3 is 1 mark)

4 Write down a factor of 60 that is between 8 and 14

.....

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

0.41 0.5 0.46 0.408

.....

(Total for Question 1 is 1 mark)

2 Write down the value of the 2 in the number 12 345

.....

(Total for Question 2 is 1 mark)

3 Write $\frac{4}{5}$ as a decimal.

.....

(Total for Question 3 is 1 mark)

4 Write 19.4949 correct to the nearest whole number.

.....

(Total for Question 4 is 1 mark)

5 Here is a list of numbers.

5 11 18 22 29

From the list, write down a multiple of 3

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 6184 correct to the nearest hundred.

.....

(Total for Question 1 is 1 mark)

2 Write 0.7 as a fraction.

.....

(Total for Question 2 is 1 mark)

3 Change 9 metres into centimetres.

..... centimetres

(Total for Question 3 is 1 mark)

4 Simplify $3 \times 4t$

.....

(Total for Question 4 is 1 mark)

5 Here is a list of numbers.

20 40 60 80 100

One of these numbers is a multiple of 25

Which number?

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write down two factors of 18

..... , ...

(Total for Question 1 is 1 mark)

2 Write 0.9 as a fraction.

.....

(Total for Question 2 is 1 mark)

3 Change 7 metres to centimetres.

..... centimetres

(Total for Question 3 is 1 mark)

4 Write down a square number that is between 10 and 50

.....

(Total for Question 4 is 1 mark)

5 Work out 50% of 240

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write the following numbers in order.
Start with the lowest number.

4 –3 7 2 –1

.....

(Total for Question 1 is 1 mark)

2 Change 5000 millilitres to litres.

..... litres

(Total for Question 2 is 1 mark)

3 Write $\frac{31}{100}$ as a decimal.

.....

(Total for Question 3 is 1 mark)

4 Write down the multiple of 7 that is between 30 and 40

.....

(Total for Question 4 is 1 mark)

5 Complete the statement below to make it correct.

..... $\times m = 2m$

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Simplify $e + e + e + e + e$

.....

(Total for Question 1 is 1 mark)

2 Write $\frac{3}{4}$ as a decimal.

.....

(Total for Question 2 is 1 mark)

3 Change 60 millimetres into centimetres.

..... centimetres

(Total for Question 3 is 1 mark)

4 Write down a multiple of 8 that is between 25 and 35

.....

(Total for Question 4 is 1 mark)

5 Angle A is 53°

What type of angle is angle A?

.....

(Total for Question 5 is 1 mark)

14 Find the value of $\dfrac{5.27 + 3.5}{7.9 - 4.36}$

Give your answer as a decimal.
Write down all the figures on your calculator display.

.....

(Total for Question 14 is 2 marks)

15 You can use this rule to work out the total hire charge, in pounds (£), for hiring a 3D printer for a number of weeks.

Total hire charge (£) = number of weeks × 70 + 50

Mia wants to hire a 3D printer for 4 weeks.

(a) Work out the total hire charge.

£.....

(2)

Zahir hires a 3D printer.
The total hire charge is £680

(b) For how many weeks does Zahir hire the 3D printer?

..... weeks

(2)

(Total for Question 15 is 4 marks)

21 Simplify $(2^{-5} \times 2^{8})^{2}$

Give your answer as a power of 2

.....

(Total for Question 21 is 2 marks)

22 Work out 0.004×0.32

.....

(Total for Question 22 is 2 marks)

12 A chess match lasted $3\frac{1}{4}$ hours.

The match finished at 14 10

At what time did the chess match start?

.....

(Total for Question 12 is 2 marks)

13 (a) Simplify $8h^3 + 14h^3 - 2h^3$

.....

(1)

(b) Simplify $(9y + 12y) \div 3$

.....

(1)

(Total for Question 13 is 2 marks)

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

$\frac{7}{12}$ 0.56 57% $\frac{6}{11}$ 0.558

.....

(Total for Question 14 is 2 marks)

19 Here are the first five terms of an arithmetic sequence.

–5 3 11 19 27

Find an expression, in terms of n, for the nth term of this sequence.

.....

(Total for Question 19 is 2 marks)

20 Work out $8.46 \div 0.15$

.....

(Total for Question 20 is 3 marks)

17 Work out $\frac{3}{5} \div \frac{1}{6}$

Give your answer as a mixed number.

.....

(Total for Question 17 is 3 marks)

18 Work out 6.3×2.4

.....

(Total for Question 18 is 3 marks)

18 Work out $818.4 \div 1.2$

.....

(Total for Question 18 is 3 marks)

14 A road has a length of 1.6 kilometres.

The road is shown on a map with a scale of 1 : 20 000

Work out the length, in centimetres, of this road on the map.

..... centimetres

(Total for Question 14 is 3 marks)

15 Work out 1.35×48

.....

(Total for Question 15 is 3 marks)

20 (a) Work out 3.67×4.2

.....

(3)

(b) Work out $59.84 \div 1.6$

.....

(3)

(Total for Question 20 is 6 marks)

SUB-TOPIC N2c

PERCENTAGES

Sub-topic N2c · 86 questions · 223 marks · lowest tariff first

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Work out the value of 2^4

.....

(Total for Question 1 is 1 mark)

2 Write 7.264 51 correct to 3 decimal places.

.....

(Total for Question 2 is 1 mark)

3 (a) Simplify $7 \times e \times f \times 8$

.....

(1)

(b) Solve $\frac{x}{5} = 2\frac{1}{2}$

$x =$ .....

(1)

(Total for Question 3 is 2 marks)

4 Write $\frac{4}{5}$ as a percentage.

.....%

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 6324 correct to the nearest thousand.

.....

(Total for Question 1 is 1 mark)

2 (a) Write the following numbers in order of size.
Start with the smallest number.

−6 6 −5 0 12

.....

(1)

(b) Write the following numbers in order of size.
Start with the smallest number.

0.078 0.78 0.87 0.708

.....

(1)

(Total for Question 2 is 2 marks)

3 Write 20% as a fraction.

.....

(Total for Question 3 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

.....%

(Total for Question 1 is 1 mark)

2 Write 1.59 correct to 1 decimal place.

.....

(Total for Question 2 is 1 mark)

3 Work out the value of 3^5

.....

(Total for Question 3 is 1 mark)

4 Write down a 6 digit number that has 4 as its thousands digit.
You can only use the digit 4 once.

.....

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write $\frac{9}{10}$ as a decimal.

.....

(Total for Question 1 is 1 mark)

2 Write 0.3 as a percentage.

..... %

(Total for Question 2 is 1 mark)

3 Write the number 2538 correct to the nearest hundred.

.....

(Total for Question 3 is 1 mark)

4 Here are the first 4 terms of a sequence.

2 9 16 23

(a) (i) Write down the next term in the sequence.

.....

(1)

(ii) Explain how you got your answer.

.....

(1)

(b) Work out the 10th term of the sequence.

.....

(1)

(Total for Question 4 is 3 marks)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

0.4 0.02 0.37 0.152 0.2

.....

(Total for Question 1 is 1 mark)

2 Write 0.6 as a percentage.

..... %

(Total for Question 2 is 1 mark)

3 Here is a list of numbers.

3 5 7 12 15 18 20

From the list, write down a factor of 10

.....

(Total for Question 3 is 1 mark)

4 Write 7829 to the nearest 1000

.....

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 180 minutes in hours.

..... hours

(Total for Question 1 is 1 mark)

2 Write 0.73 as a percentage.

..... %

(Total for Question 2 is 1 mark)

3 Work out $10 \times (3 + 5)$

.....

(Total for Question 3 is 1 mark)

4 Write down a prime number that is between 20 and 30

.....

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 478 to the nearest hundred.

.....

(Total for Question 1 is 1 mark)

2 Write down a multiple of 8 that is between 41 and 60

.....

(Total for Question 2 is 1 mark)

3 Change 1.5 kilometres to metres.

..... metres

(Total for Question 3 is 1 mark)

4 Here is a list of numbers.

4 6 9 10 15 27 30 40

From the list, write down all the numbers that are powers of 3

.....

(Total for Question 4 is 1 mark)

5 Write 19% as a fraction.

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write down the value of the 7 in the number 1074

.....

(Total for Question 1 is 1 mark)

2 Write 4.58 correct to 1 decimal place.

.....

(Total for Question 2 is 1 mark)

3 Work out 31.7×100

.....

(Total for Question 3 is 1 mark)

4 Write the fraction $\frac{28}{70}$ in its simplest form.

.....

(Total for Question 4 is 1 mark)

5 Write 15% as a decimal.

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

8 −4 1 −7 −2

.....

(Total for Question 1 is 1 mark)

2 Write the number 8375 correct to the nearest thousand.

.....

(Total for Question 2 is 1 mark)

3 Write 0.23 as a percentage.

..... %

(Total for Question 3 is 1 mark)

4 Find the value of $\sqrt{17.64}$

.....

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 0.37 as a fraction.

.....

(Total for Question 1 is 1 mark)

2 Write 29 381 correct to the nearest 1000

.....

(Total for Question 2 is 1 mark)

3 Simplify $3e - e + 4e$

.....

(Total for Question 3 is 1 mark)

4 Write $\frac{1}{4}$ as a percentage.

..... %

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Change 300 centimetres into metres.

..... metres

(Total for Question 1 is 1 mark)

2 Work out $\frac{1}{3}$ of 24

.....

(Total for Question 2 is 1 mark)

3 Write 40% as a fraction.

.....

(Total for Question 3 is 1 mark)

4 Work out 2.5^2

.....

(Total for Question 4 is 1 mark)

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

1 −4 0 7 −6 −3 2

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write $\frac{3}{10}$ as a percentage.

.....%

(Total for Question 1 is 1 mark)

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

8 –7 –10 1 0 –2

.....

(Total for Question 2 is 1 mark)

3 Write $\frac{9}{100}$ as a decimal.

.....

(Total for Question 3 is 1 mark)

4 Write 327 correct to the nearest ten.

.....

(Total for Question 4 is 1 mark)

5 Write down the value of 7^2

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 31% as a fraction.

.....

(Total for Question 1 is 1 mark)

2 Change 3 metres into centimetres.

..... centimetres

(Total for Question 2 is 1 mark)

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

1.02 0.12 1.20 0.21

.....

(Total for Question 3 is 1 mark)

4 (a) Simplify $m + m + m + m$

.....

(1)

(b) Simplify $12p \div 4$

.....

(1)

(Total for Question 4 is 2 marks)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 45% as a decimal.

.....

(Total for Question 1 is 1 mark)

2 Write down two factors of 35

.....

(Total for Question 2 is 1 mark)

3 What is the time 2 hours 40 minutes after 8.05 am?

..... am

(Total for Question 3 is 1 mark)

4 Work out $\frac{1}{6}$ of 66

.....

(Total for Question 4 is 1 mark)

4 Write down the value of the 6 in the number 16 007

.....

(Total for Question 4 is 1 mark)

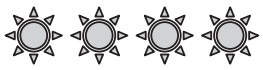
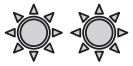
5 Write these numbers in order of size.
Start with the smallest number.

$\frac{1}{2}$ 0.55 45%

.....

(Total for Question 5 is 1 mark)

6 The pictogram gives information about the number of hours of sunshine on a Saturday and on a Sunday.

Saturday	
Sunday	

Key:  represents 2 hours of sunshine

Work out the number of hours of sunshine on Saturday.

..... hours

(Total for Question 6 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 1476 to the nearest 10

.....

(Total for Question 1 is 1 mark)

2 Write a fraction in the box to make the calculation correct.

$1 - \frac{3}{10} = \square$

(Total for Question 2 is 1 mark)

3 Here is a list of numbers.

3 3 3 3 4 4 5 7 8

Write down the mode of the numbers.

.....

(Total for Question 3 is 1 mark)

4 Write down a 3 digit number that is a multiple of 5

.....

(Total for Question 4 is 1 mark)

5 Write 0.4 as a percentage.

.....%

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 35% as a fraction.

.....

(Total for Question 1 is 1 mark)

2 Work out $\frac{1}{4}$ of 28

.....

(Total for Question 2 is 1 mark)

3 Write down two factors of 12

....

(Total for Question 3 is 1 mark)

4 Simplify $2m \times 3$

.....

(Total for Question 4 is 1 mark)

5 Find $\sqrt{1.69}$

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

−7 7 0 −2 −1

.....

(Total for Question 1 is 1 mark)

2 Write 37% as a fraction.

.....

(Total for Question 2 is 1 mark)

3 Write down the 7th odd number.

.....

(Total for Question 3 is 1 mark)

4 Change 53 centimetres to millimetres.

..... millimetres

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

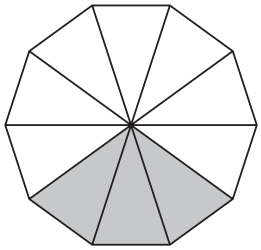
You must write down all the stages in your working.

1 Write 38% as a decimal.

.....

(Total for Question 1 is 1 mark)

2 What fraction of this shape is shaded?



.....

(Total for Question 2 is 1 mark)

3 Here is a list of numbers.

1.6 1.4 2.1 0.5 1.3

From the list, write down the smallest number.

.....

(Total for Question 3 is 1 mark)

4 Work out $-9 + 5$

.....

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write the number three thousand one hundred and seven in figures.

.....

(Total for Question 1 is 1 mark)

2 Write $\frac{3}{10}$ as a percentage.

.....%

(Total for Question 2 is 1 mark)

3 Simplify $m + m + m + m$

.....

(Total for Question 3 is 1 mark)

4 Change 4000 grams into kilograms.

..... kilograms

(Total for Question 4 is 1 mark)

5 7 –5 3 9 –2

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

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write down two factors of 18

..... , ...

(Total for Question 1 is 1 mark)

2 Write 0.9 as a fraction.

.....

(Total for Question 2 is 1 mark)

3 Change 7 metres to centimetres.

..... centimetres

(Total for Question 3 is 1 mark)

4 Write down a square number that is between 10 and 50

.....

(Total for Question 4 is 1 mark)

5 Work out 50% of 240

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 35% as a decimal.

.....

(Total for Question 1 is 1 mark)

2 Write 8061 correct to the nearest hundred.

.....

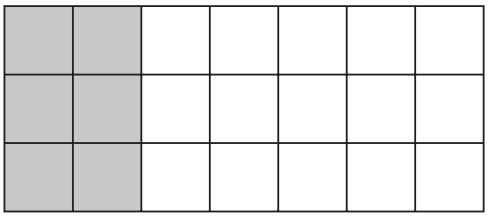
(Total for Question 2 is 1 mark)

3 Write down a number that is less than –5

.....

(Total for Question 3 is 1 mark)

4 Here is a grid of squares.



What fraction of the grid is shaded?

.....

(Total for Question 4 is 1 mark)

5 Write down the value of the 9 in the number 27.963

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write the number 18 475 correct to the nearest thousand.

.....

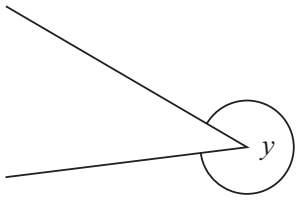
(Total for Question 1 is 1 mark)

2 Write 0.3 as a percentage.

.....%

(Total for Question 2 is 1 mark)

3 Write down the mathematical name for the type of angle marked y.



.....

(Total for Question 3 is 1 mark)

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

0.21 0.2 0.03 0.1 0.16

.....

(Total for Question 4 is 1 mark)

5 Find the square root of 64

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 23% as a fraction.

.....

(Total for Question 1 is 1 mark)

2 Change 800 centimetres to metres.

..... metres

(Total for Question 2 is 1 mark)

3 Write down the value of the 3 in the number 62 837

.....

(Total for Question 3 is 1 mark)

4 Simplify $7a + a - 5a$

.....

(Total for Question 4 is 1 mark)

5 Write the following fractions in order of size.
Start with the smallest fraction.

$$\frac{1}{2} \qquad \frac{2}{3} \qquad \frac{1}{4}$$

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 25% as a decimal.

.....

(Total for Question 1 is 1 mark)

2 Here are the first four even numbers.

2 4 6 8

Find the 10th even number.

.....

(Total for Question 2 is 1 mark)

3 Change 15 centimetres into millimetres.

..... millimetres

(Total for Question 3 is 1 mark)

4 Write down the multiple of 9 that is between 20 and 30

.....

(Total for Question 4 is 1 mark)

5 Work out 500 + 145

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 17% as a fraction.

.....

(Total for Question 1 is 1 mark)

2 Write 140 minutes in hours and minutes.

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

(Total for Question 2 is 1 mark)

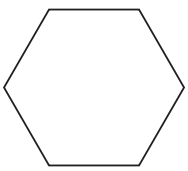
3 Write these numbers in order of size.
Start with the smallest number.

0.57 0.507 0.5 0.05

.....

(Total for Question 3 is 1 mark)

4 Write down the mathematical name of this polygon.



.....

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Change 3 weeks into days.

..... days

(Total for Question 1 is 1 mark)

2 Simplify $2 \times 3n$

.....

(Total for Question 2 is 1 mark)

3 Write 0.7 as a percentage.

.....%

(Total for Question 3 is 1 mark)

4 Here are some temperatures in °C.

–3 5 –6 7 2

Write the temperatures in order.
Start with the lowest temperature.

.....

(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write down the value of the 7 in the number 49.715

.....

(Total for Question 1 is 1 mark)

2 Find $\sqrt{5.76}$

.....

(Total for Question 2 is 1 mark)

3 Write 19% as a fraction.

.....

(Total for Question 3 is 1 mark)

4 Here are some fractions.

$$\frac{3}{9} \quad \frac{6}{18} \quad \frac{2}{6} \quad \frac{4}{10} \quad \frac{5}{15}$$

Which one of these fractions is **not** equivalent to $\frac{1}{3}$?

.....

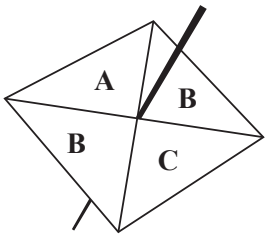
(Total for Question 4 is 1 mark)

5 Work out 60% of 70

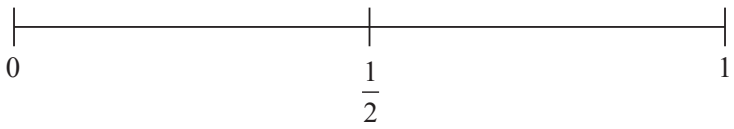
.....

(Total for Question 5 is 2 marks)

6 Sammy spins a fair 4-sided spinner.

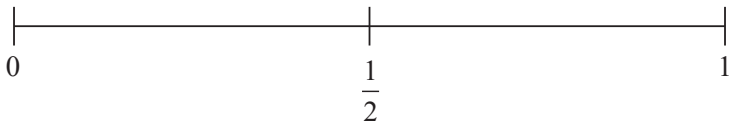


(i) On the probability scale, mark with a cross (×) the probability that the spinner will land on **B**.



(1)

(ii) On the probability scale, mark with a cross (×) the probability that the spinner will land on **F**.



(1)

(Total for Question 6 is 2 marks)

19 (a) Solve $4(x - 5) = 18$

$x =$ .....

(2)

$-3 < t \leqslant 2$
t is an integer.

(b) Write down all the possible values of t.

.....

(2)

(Total for Question 19 is 4 marks)

20 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 20 is 2 marks)

30 In a sale, the normal price of a book is reduced by 30%.
The sale price of the book is £2.80

Work out the normal price of the book.

£.....

(Total for Question 30 is 2 marks)

TOTAL FOR PAPER IS 80 MARKS

14 Gavin, Harry and Isabel each earn the same monthly salary.

Each month,

Gavin **saves** 28% of his salary and spends the rest of his salary

Harry spends $\frac{3}{4}$ of his salary and **saves** the rest of his salary

the amount of salary Isabel saves : the amount of salary she spends = 3 : 7

Work out who saves the most of their salary each month.
You must show how you get your answer.

(Total for Question 14 is 4 marks)

15 Work out 15% of 160 grams.

..... grams

(Total for Question 15 is 2 marks)

18 Bill wants to increase 150 by 3%
He writes down

$$150 \times 1.3 = 195$$

Bill's method is wrong.

(a) Explain why.

.....

.....

(1)

Sally wants to decrease 150 by 3%

(b) Complete this statement to show how Sally can decrease 150 by 3%

150 × ..... = ...

(1)

(Total for Question 18 is 2 marks)

19 (a) Solve $3(x - 4) = 12$

$x =$ .....

(2)

(b) Factorise fully $9b - 3b^2$

.....

(2)

(Total for Question 19 is 4 marks)

6 Work out 20% of 80

.....

(Total for Question 6 is 2 marks)

7 There are four types of counter in a bag.

The table shows the number of each type of counter in the bag.

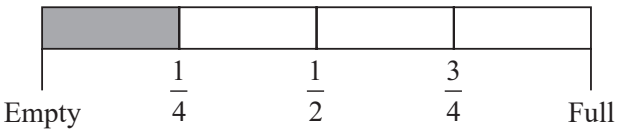
Type of counter	red circle	green circle	red square	green square
Number of counters	16	26	11	7

There are more green counters than red counters.
How many more?

.....

(Total for Question 7 is 2 marks)

8 Here is the gauge for the fuel tank of a car.



The fuel tank holds 52 litres of fuel when the tank is full.

The tank is $\frac{1}{4}$ full of fuel.

Work out how many more litres of fuel are needed to fill the tank.

..... litres

(Total for Question 8 is 3 marks)

15 The length of a plane is 19.2 metres.

Lukas buys a scale model of the plane.
The scale of the model is 1 : 24

Work out the length of the scale model of the plane.
Give your answer in centimetres.

..... centimetres

(Total for Question 15 is 3 marks)

16 Maria invests £4500 in a savings account for 3 years.
The account pays simple interest at a rate of 1.8% per year.

Work out the total amount of interest Maria gets by the end of the 3 years.

£.....

(Total for Question 16 is 2 marks)

27 Solve $x^2 - 7x - 18 = 0$

.....

(Total for Question 27 is 3 marks)

28 In a sale, the normal price of a boat is reduced by 15%
The sale price of the boat is £272 000

Work out the normal price of the boat.

£.....

(Total for Question 28 is 2 marks)

TOTAL FOR PAPER IS 80 MARKS

29 Change 30 metres per second to kilometres per hour.

..... kilometres per hour

(Total for Question 29 is 2 marks)

30 The value of Michelle's car has decreased by 15%
The car now has a value of £13 600

Work out the value of Michelle's car before the decrease.

£.....

(Total for Question 30 is 2 marks)

TOTAL FOR PAPER IS 80 MARKS

26 The population of a town increased by 9% between 2018 and 2019
The population in 2019 was 165 680

Calculate the population in 2018

.....

(Total for Question 26 is 2 marks)

TOTAL FOR PAPER IS 80 MARKS

26 The price of a holiday increases by 20%
This 20% increase adds £240 to the price of the holiday.

Work out the price of the holiday before the increase.

£.....

(Total for Question 26 is 2 marks)

15 Steve is buying a car.
The car costs £12 000

Steve pays 25% of the cost as a deposit.
He pays the rest of the cost in 20 equal monthly payments.

How much is each monthly payment?

£.....

(Total for Question 15 is 4 marks)

16 Shah takes an exam.
The exam is out of 60 marks.

Shah needs to score at least 70% of the marks to pass the exam.
He scores 45 marks.

Show that Shah passes the exam.

(Total for Question 16 is 2 marks)

27 In a sale, normal prices are reduced by 30%

The sale price of a TV is £280

Work out the normal price of the TV.

£.....

(Total for Question 27 is 2 marks)

28 Solve $x + 11 \leqslant 5 - \frac{1}{2}x$

.....

(Total for Question 28 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

15 £3500 is invested in a bank for 6 years.
The bank pays **simple** interest at a rate of 2.5% per year.

Work out the total amount of simple interest paid.

£.....

(Total for Question 15 is 2 marks)

15 There are 200 counters in a bag.

87 of the counters are green.
24 of the counters are yellow.

(a) What fraction of the counters are green?

.....

(1)

(b) What percentage of the counters are yellow?

.....%

(1)

(Total for Question 15 is 2 marks)

16 A team plays 48 games.

The team wins $\frac{3}{8}$ of the 48 games.

The number of games the team loses is the same as the number of games the team draws.

Work out the number of games the team loses.

.....

(Total for Question 16 is 3 marks)

16 Solve $5x - 6 = 3(x - 1)$

$x =$ .....

(Total for Question 16 is 3 marks)

17 Emily buys a pack of 12 bottles of water.
The pack costs £5.64

Emily sells all 12 bottles for 50p each.

Work out Emily's percentage profit.
Give your answer correct to 1 decimal place.

..... %

(Total for Question 17 is 3 marks)

11 Jack's driving school has two offers.

Offer 1	Offer 2
First driving lesson free All other driving lessons normal price	All driving lessons 5% off the normal price

The normal price of a driving lesson is £24

Douglas is going to have 12 driving lessons.

Which is the cheaper offer for 12 driving lessons, Offer 1 or Offer 2?
You must show how you get your answer.

(Total for Question 11 is 3 marks)

12 2.5 kg of apples cost £3.60

Work out the cost of 3.5 kg of apples.

£.....

(Total for Question 12 is 2 marks)

11 Adam gets a bonus of 30% of £80
Katy gets a bonus of £28

Work out the difference between the bonus Adam gets and the bonus Katy gets.

£.....

(Total for Question 11 is 3 marks)

12 There are 49 counters in a bag.

20 of the counters are red.
The rest of the counters are blue.

One of the counters is taken at random.

Find the probability that the counter is blue.

.....

(Total for Question 12 is 2 marks)

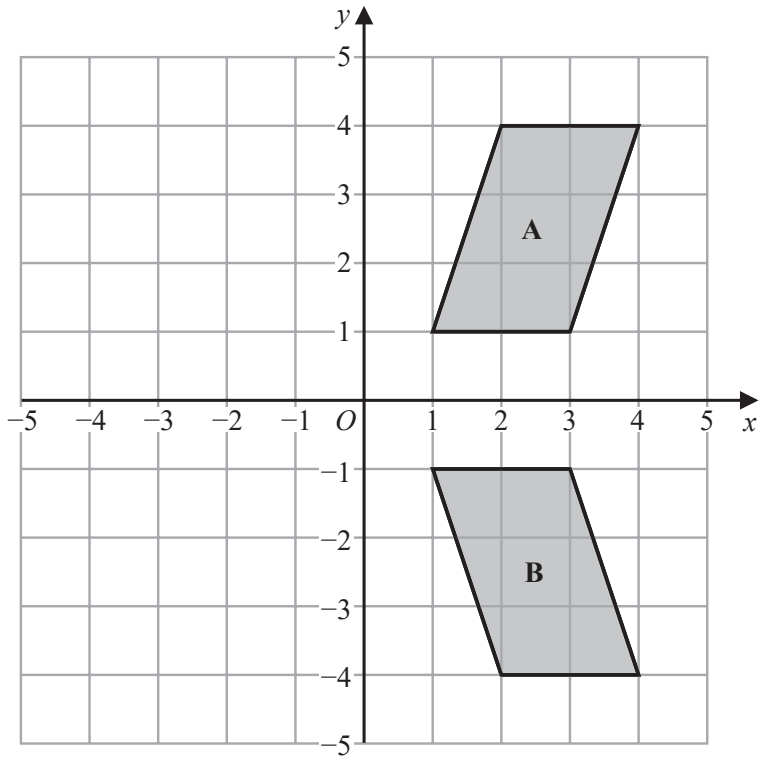
15 Remi invests £600 for 5 years in a savings account.
By the end of the 5 years he has received a total of £75 simple interest.

Work out the annual rate of simple interest.

.....%

(Total for Question 15 is 3 marks)

16

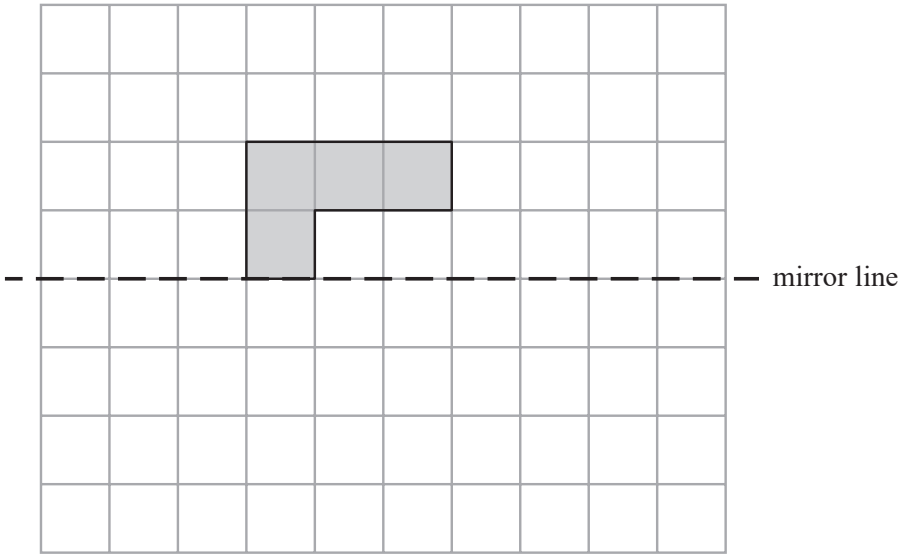


Describe fully the single transformation that maps shape **A** onto shape **B**.

.....

(Total for Question 16 is 2 marks)

10 On the grid, reflect the shaded shape in the mirror line.



(Total for Question 10 is 1 mark)

11 There are men and women at a meeting.

There are 28 women.
30% of the people at the meeting are men.

Work out the total number of people at the meeting.

.....

(Total for Question 11 is 3 marks)

20 (a) Write 7357 correct to 3 significant figures.

.....

(1)

(b) Work out $\dfrac{\sqrt{17 + 4^2}}{7.3^2}$

Write down all the figures on your calculator display.

.....

(2)

(Total for Question 20 is 3 marks)

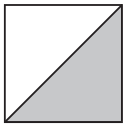
21 Last year Jo paid £245 for her car insurance.
This year she has to pay £883 for her car insurance.

Work out the percentage increase in the cost of her car insurance.

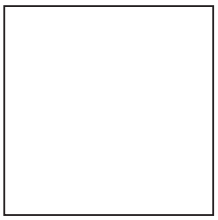
.....%

(Total for Question 21 is 3 marks)

20 Here are two squares, **A** and **B**.



A



B

The length of the side of square **A** is 50% of the length of the side of square **B**.

Express the area of the shaded region of square **A** as a percentage of the area of square **B**.

..... %

(Total for Question 20 is 3 marks)

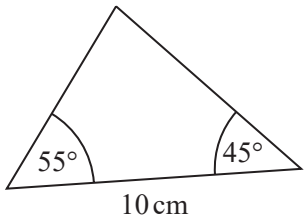
21 Franco buys a house for £146 500
He sells the house for £158 220

Calculate the percentage profit Franco makes.

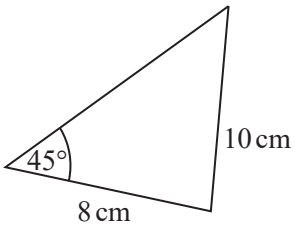
..... %

(Total for Question 21 is 3 marks)

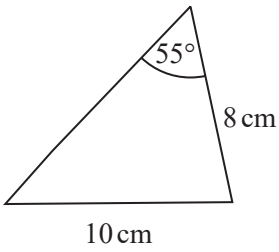
23 The diagram shows four triangles.



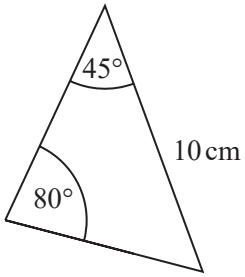
Triangle **A**



Triangle **B**



Triangle **C**



Triangle **D**

Two of these triangles are congruent.

Write down the letters of these two triangles.

..... and .....

(Total for Question 23 is 1 mark)

24 Sean pays £10 for 24 chocolate bars.

He sells all 24 chocolate bars for 50p each.

Work out Sean's percentage profit.

..... %

(Total for Question 24 is 3 marks)

19 Robin buys a watch for £80
He sells the watch for £56

Work out his percentage loss.

.....%

(Total for Question 19 is 3 marks)

18 Here is a list of ingredients for making 10 scones.

Ingredients for 10 scones	
75 g	butter
350 g	self-raising flour
40 g	sugar
150 m*l*	milk
2	eggs

Mia wants to make 25 scones.
Work out how much sugar she needs.

..... g

(Total for Question 18 is 2 marks)

19 Increase 240 by 20%

.....

(Total for Question 19 is 3 marks)

18 Solve $4(2x - 3) = 20$

$x =$ .....

(Total for Question 18 is 3 marks)

19 Jenny invests £3000 for 6 years at y% simple interest per year.

At the end of the 6 years, Jenny has received a total of £450 in interest.

Work out the value of y.

$y =$ .....

(Total for Question 19 is 3 marks)

15 Martha and Nabeel share £120

Martha gets 72% of the money.
She spends 30% of the money she gets.

How much money does Martha have left?

£.....

(Total for Question 15 is 3 marks)

18 Mrs Simpson organised a school trip for 66 children.

The total cost of the trip was £1800
The school paid 56% of the total cost.
The rest of the total cost was divided equally between the 66 children.

Work out how much money each child paid.

£.....

(Total for Question 18 is 3 marks)

19 (a) Work out the value of $\frac{\sqrt{35.2 + 1.7^3}}{4.6^2 - 8.91}$

Write down all the numbers on your calculator display.

.....

(2)

(b) Write your answer to part (a) correct to 2 significant figures.

.....

(1)

(Total for Question 19 is 3 marks)

15 Which is greater

15% of 88 **or** 20% of 62?

You must show all your working.

(Total for Question 15 is 3 marks)

17 A village hall needs a new heating system.
The cost of the heating system is £9000

A community grant will pay 85% of this cost.
The village council will pay the rest of the cost.

Work out how much the village council will pay.

£.....

(Total for Question 17 is 3 marks)

18 A cube has a volume of 512 cm^3

Work out the surface area of the cube.

..... cm^2

(Total for Question 18 is 3 marks)

18 Amy buys a car.
The car costs £12 000

Amy pays a deposit of 20% of the cost.
She pays the rest of the cost in 24 equal monthly payments.

Amy says that each monthly payment is less than £450

Is Amy correct?
You must show how you get your answer.

(Total for Question 18 is 3 marks)

24 Mia pays £25 for 200 oranges.

Mia puts the oranges into bags.
She puts 5 oranges into each bag.

Mia sells all the bags of oranges for £1 each bag.

Work out Mia's percentage profit.

.....%

(Total for Question 24 is 3 marks)

14 Gavin, Harry and Isabel each earn the same monthly salary.

Each month,

Gavin **saves** 28% of his salary and spends the rest of his salary

Harry spends $\frac{3}{4}$ of his salary and **saves** the rest of his salary

the amount of salary Isabel saves : the amount of salary she spends = 3 : 7

Work out who saves the most of their salary each month.
You must show how you get your answer.

(Total for Question 14 is 4 marks)

15 Work out 15% of 160 grams.

..... grams

(Total for Question 15 is 2 marks)

21 Renee buys 5 kg of sweets to sell.
She pays £10 for the sweets.

Renee puts all the sweets into bags.
She puts 250 g of sweets into each bag.
She sells each bag of sweets for 65p.

Renee sells all the bags of sweets.

Work out her percentage profit.

.....%

(Total for Question 21 is 4 marks)

18 Trevor buys a boat.
The cost of the boat is £14 200 plus VAT at 20%

Trevor pays a deposit of £5000
He pays the rest of the cost in 10 equal payments.

Work out the amount of each of the 10 payments.

£ .....

(Total for Question 18 is 4 marks)

15 There are 800 students at a school.
Each student has either a school dinner or a packed lunch.

31% of the students have packed lunches.

55% of the students are boys.
60% of the boys have school dinners.

How many girls have packed lunches?
You must show all your working.

.....

(Total for Question 15 is 4 marks)

16 An exam has two papers, Paper 1 and Paper 2

Paper 1 has 60 marks.
Paper 2 has 90 marks.

The pass mark is $\frac{2}{3}$ of the total number of marks.

Danielle gets 70% of the marks for Paper 1

How many of the marks for Paper 2 must Danielle get in order to get the pass mark?

.....

(Total for Question 16 is 4 marks)

19 Here are the types of sandwiches sold in a cafe last week.

Sandwiches
Tuna
Cheese
Chicken
Egg

56 tuna sandwiches were sold.
This was 40% of the total number of sandwiches sold.

(a) Work out the total number of sandwiches sold.

.....

(2)

Of the 56 tuna sandwiches sold, 18 were sold on Friday.

(b) Write 18 as a percentage of 56
Give your answer correct to the nearest whole number.

..... %

(2)

(Total for Question 19 is 4 marks)

23 At the end of 2017

the value of Tamara's house was £220 000
the value of Rahim's house was £160 000

At the end of 2019

the value of Tamara's house had decreased by 20%
the value of Rahim's house had increased by 30%

At the end of 2019, whose house had the greater value?
You must show how you get your answer.

(Total for Question 23 is 4 marks)

18 (a) Write 2530 correct to 2 significant figures.

.....

(1)

(b) Write 0.0874 correct to 1 significant figure.

.....

(1)

(Total for Question 18 is 2 marks)

19 There are 400 counters in a box.
The counters are red or yellow or green.

$\frac{3}{8}$ of the counters are red.

82 of the counters are yellow.

What percentage of the counters are green?

.....%

(Total for Question 19 is 4 marks)

25 Jo is going to buy 15 rolls of wallpaper.

Here is some information about the cost of rolls of wallpaper from each of two shops.

Chic Decor	**Style Papers**
3 rolls for £36	Pack of 5 rolls normal price £70 12% off the normal price

Jo wants to buy the 15 rolls of wallpaper as cheaply as possible.

Should Jo buy the wallpaper from Chic Decor or from Style Papers?
You must show how you get your answer.

(Total for Question 25 is 4 marks)

11 214 people go on a school trip.
The people on the trip are either adults or children.

There are 14 adults on the trip.
35% of the children on the trip are wearing a hat.

Find the number of children on the trip who are **not** wearing a hat.

.....

(Total for Question 11 is 4 marks)

17 There are 200 counters in a bag.

38 counters are red.
52 counters are blue.

The rest of the counters are yellow or green.
There are the same number of yellow counters as green counters.

What percentage of the counters in the bag are yellow?

.....%

(Total for Question 17 is 4 marks)

18 Naomi has b bags of apples and c crates of apples.

There are 5 apples in each bag.
There are 28 apples in each crate.

Naomi has a total of T apples.

Write a formula for T in terms of b and c.

.....

(Total for Question 18 is 3 marks)

15 Steve is buying a car.
The car costs £12 000

Steve pays 25% of the cost as a deposit.
He pays the rest of the cost in 20 equal monthly payments.

How much is each monthly payment?

£.....

(Total for Question 15 is 4 marks)

16 Shah takes an exam.
The exam is out of 60 marks.

Shah needs to score at least 70% of the marks to pass the exam.
He scores 45 marks.

Show that Shah passes the exam.

(Total for Question 16 is 2 marks)

23 Karen is organising a party for a charity.

She spends
£100 on food
£120 on a hall
£80 on a DJ.

Karen sells 54 tickets for the party.
Each ticket costs £7.50

Work out the percentage profit Karen makes for the charity.

.....%

(Total for Question 23 is 4 marks)

11 (a) Simplify $2x \times 3y$

.....

(1)

(b) Simplify $3d - 4e + 2d + e$

.....

(2)

(Total for Question 11 is 3 marks)

12 180 tickets are sold for a concert.

60% of the tickets are child tickets.
The rest of the tickets are adult tickets.

The total cost of the 180 tickets is £1944
Each child ticket costs £8

Work out the cost of each adult ticket.

£.....

(Total for Question 12 is 4 marks)

25 The cost of a first class stamp increased from 76p to 85p.
The cost of a second class stamp increased from 65p to 66p.

Filip says,

> "The percentage increase in the cost of a first class stamp is more than 7 times the percentage increase in the cost of a second class stamp."

Is Filip correct?
You must show all your working.

(Total for Question 25 is 4 marks)

22 A bonus of £2100 is shared by 10 people who work for a company.
40% of the bonus is shared equally between 3 managers.
The rest of the bonus is shared equally between 7 salesmen.

One of the salesmen says,

"If the bonus is shared equally between all 10 people I will get 25% more money."

Is the salesman correct?
You must show how you get your answer.

(Total for Question 22 is 5 marks)

23 Costcorp sells packets of mints to shop owners.

On Monday three shop owners buy mints from Costcorp.
Each shop owner buys small packets, medium packets and large packets of mints.

Alan buys 400 packets of mints.
32 % are small packets.
40 % are large packets.

Beryl buys 500 packets of mints.

$\frac{3}{10}$ are small packets.

$\frac{1}{10}$ are large packets.

Charlie buys 150 small packets of mints so that

number of small packets : number of medium packets = 3 : 4

Work out the total number of medium packets of mints these shop owners buy.
You must show all your working.

.....

(Total for Question 23 is 5 marks)

11 Dylan buys 13 bicycle lights for £7.50 each.
He pays with five £20 notes.

(a) How much change should Dylan get?

£.....

(3)

The normal price of a bicycle is £120

In a sale, there is $\frac{1}{5}$ off the normal price of the bicycle.

(b) Work out the price of the bicycle in the sale.

£.....

(2)

(Total for Question 11 is 5 marks)

17 In a shop, a TV has a normal price of £500
The shop has a sale.

On Monday, the normal price of the TV is reduced by $\frac{1}{10}$ to give the sale price.

On Tuesday, the sale price of the TV is reduced by 20%

Chris wants to buy the TV.
He has £400 to spend on the TV.

Does Chris have enough money to buy the TV on Tuesday?
You must show how you get your answer.

(Total for Question 17 is 5 marks)

19 Nimra buys a 3 kg box of sweets for £17.60

She puts the sweets into bags to sell.
Each bag contains 150 g of sweets.

Nimra fills as many bags as possible.
She will sell each bag for the same price.

Nimra wants to make a profit of at least 35%

Assuming she sells all the bags,
what is the lowest price Nimra should charge for each bag?

£.....

(Total for Question 19 is 5 marks)

14 Last week, 73% of the tickets sold at a cinema were adult tickets.

(a) What percentage of the tickets sold were **not** adult tickets?

.....%

(1)

Some people watched a film at the cinema.

number of adults : number of children = 2 : 5

(b) What fraction of these people were adults?

.....

(1)

On Friday,

500 people watched a film at the cinema.
70% of these people were children.

On Saturday,

720 people watched the film at the cinema.
$\frac{5}{8}$ of these people were children.

Kasim thinks more children watched the film on Friday than on Saturday.

(c) Is Kasim correct?
You must show how you get your answer.

(3)

(Total for Question 14 is 5 marks)

21 Jonny wants to know how much coffee he will need for 800 people at a meeting.

Each person who drinks coffee will drink 2 cups of coffee.
10.6 g of coffee is needed for each cup of coffee.

Jonny assumes 68% of the people will drink coffee.

(a) Using this assumption, work out the amount of coffee Jonny needs.
Give your answer correct to the nearest gram.

..... g
(4)

Jonny's assumption is wrong.
72% of the people will drink coffee.

(b) How does this affect your answer to part (a)?

.....

.....

.....

(1)

(Total for Question 21 is 5 marks)

9 There are 200 people at a party.

$\frac{2}{5}$ of the people are children.
The rest of the people are adults.

35% of the children are vegetarian.
45% of the adults are vegetarian.

How many of the people are **not** vegetarian?

.....

(Total for Question 9 is 5 marks)

21 Robyn buys a total of 240 pens and pencils, where

number of pens : number of pencils = 3 : 5

Robyn pays 9p for each pen.
She sells each pen for 11p.

Robyn pays 6p for each pencil.
She sells each pencil for 10p.

Robyn sells all of the pens and pencils.

Work out Robyn's percentage profit.
Give your answer correct to 1 decimal place.
You must show all your working.

.....%

(Total for Question 21 is 5 marks)

17 Last year Emma's car insurance cost £285

This year her car insurance costs 7% less.

(a) Work out the cost of Emma's car insurance this year.

£.....

(3)

Peter sells bikes.

Each month he is paid £1700 plus a bonus.
The bonus is 5% of the total value of the bikes he sells that month.

Last month Peter was paid £2100

(b) Work out the total value of the bikes he sold last month.

£.....

(3)

(Total for Question 17 is 6 marks)

MARK SCHEMES

official mark schemes, in the same order as the questions

Paper: 1MA1/1F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1		6000	B1	cao	Accept 6 thousand or six thousand
2	(a)	−6,−5,0,6,12	B1	for −6,−5,0,6,12 accept 12, 6, 0, −5,−6	
	(b)	0.078,0.708, 0.78,0.87	B1	for 0.078, 0.708, 0.78, 0.87 accept 0.87, 0.78, 0.708, 0.078	Accept any additional '0's at the end of a decimal, eg 0.780 or 0.870
3		$\frac{20}{100}$	B1	$\frac{20}{100}$ oe, eg $\frac{2}{10}$ or $\frac{1}{5}$	Ignore any incorrect simplification of $\frac{20}{100}$ oe and award the mark if $\frac{20}{100}$ oe is seen
4		$\frac{3}{9}$	B1	for $\frac{3}{9}$ accept $\frac{1}{3}$	
5		14	B1	cao	
6	(a)	$12t$	B1	$12t$	Accept $t12$ but **not** $12 \times t$ or $t \times 12$
	(b)	$7a$	B1	$7a$	Accept $a7$ or $7 \times a$ or $a \times 7$ Partial simplification of $5a + 2a$ or $8a - a$ does NOT get the mark

Paper: 1MA1/3F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	(i)	43.7	B1	cao	
	(ii)	$\frac{5}{7}$	B1	$\frac{5}{7}$ oe	Accept any other equivalent fraction to $\frac{5}{7}$
2		$\frac{3}{100}$	B1	cao	
3		1.2	B1	oe	Accept $\frac{12}{10}$ or $\frac{6}{5}$
4		90	B1	cao	
5	(a)	Cuboid	B1		
	(b)	12	B1	cao	
6	(a)	Cross at $\frac{1}{2}$	B1	cross at $\frac{1}{2}$	Accept any other marks near to ½ if the intention is clear; do not accept if any other marks are shown.
	(b)	$\frac{2}{6}$	B1	$\frac{2}{6}$ oe	Acceptable equivalents are equivalent fractions to $\frac{2}{6}$ eg $\frac{1}{3}$ decimal 0.33(…) or 33(..)%
7		1.94 m or 194 cm	M1	for 188 **or** 0.06 **or** 194 **or** 1.94	
			A1	1.94 m **or** 194 cm	Do not accept numerical answers without the correct unit shown.

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	70 or 7 tens	B1	for 70 (or seventy) or 7 tens (or seven tens)	Condone any incorrect spelling provided the intention is clear
2	4.6	B1	cao	
3	3170	B1	cao	
4	$\frac{2}{5}$	B1	cao	
5	0.15	B1	cao	
6 (a)	24	B1	cao	
(b)		C1	for showing diagrams that represent 12 pictorially	Shapes can come from a combination of shapes, but must sum to 12. Any orientation.
(c)	84	M1	for a complete method to find the total number eg $3 \times 8 + 3.5 \times 8 + 2.5 \times 8 + 12$ or $(3 + 3\frac{1}{2} + 2\frac{1}{2} + 1\frac{1}{2}) \times 8$ or $24 + 28 + 20 + 12$ or $9 \times 8 + 3 \times 4$ NB ft from (b)	Accept one error in the totals for each month, eg $24 + 28 + 18 + 12$ for the award of this mark. Do not award for omission of figure for April. If work in (a) or (b) consistently shows a misinterpretation of the scale the M mark can still be awarded if also consistent
		A1	cao	
7	10	M1	for converting $1\frac{1}{4}$ hours or $\frac{1}{4}$ hour to minutes eg. $1\frac{1}{4}$ hours = 60 + 15 (= 75) or $\frac{1}{4}$ hour = 15 minutes or for converting 1 hour 25 minutes to minutes eg 60 + 25 (= 85)	Condone absence of units in the working
		A1	cao	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	Two correct factors	B1	for 2 correct factors from 1, 2, 3, 4, 6, 12 and no incorrect factors	Accept one correct product
2	10	B1	cao	
3	$\frac{7}{10}$	B1	for $\frac{7}{10}$ or for any other equivalent fraction	Eg $\frac{70}{100}$
4	18	B1	cao	
5	4000	B1	cao	
6	3 : 5	B1	for 3 : 5 or for any other equivalent ratio	
7	35	M1 A1	for 4 × 8 (=32) cao	Award this mark if used ambiguously eg 4 × 8 + 3 = 4 × 11 as long as 4 × 8 is stated
8	21, 28	B2 (B1	both correct one correct in the correct position **or** for 15 + 6 (= a) or a + 7 (= b) where $a \neq 21$ and $b \neq 28$)	May be written alongside the given sequence but if contradiction accept the answer line. If both correct, accept in either order. May be seen as "+6" next to the sequence

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	3	B1	cao	
2	8	B1	cao	
3	$\frac{40}{100}$	B1	for $\frac{40}{100}$ or any equivalent fraction	
4	6.25	B1	for 6.25 oe	
5	–6,–4,–3, 0,1, 2,7	B1	for –6, –4, –3, 0, 1, 2, 7	accept reverse order
6 (a)	5	B1	cao	
(b)	5, 6	B1	cao	
7	$\frac{3}{4}$	M1 A1	for method to find fraction shaded, eg 12 out of 16 squares shaded or unsimplified answer eg $\frac{12}{16}$ **or** for $1-\frac{1}{4}$ oe or for an answer of $\frac{1}{4}$ cao	May be expressed in a wide variety of ways.
8	78	P1 P1 A1	for process to find the number of boxes, eg 200 ÷ 25 (=8) or to find the cost of each tile, eg 9.75 ÷ 25 (=0.39) for complete process, eg "8" × 9.75, "0.39" × 200 cao	Could work in £ or in pence for P marks

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
8	7	P1 P1 A1	for 6 + 4 + 5 + 8 + 7 + 5 (= 35) for "35" ÷ 5 cao	Working may be seen on the diagram Allow one error in the 6 readings; intention to add must be clear.
9	Explanation	C1	for explanation, **Acceptable examples** Answer should be 14 Should work out 3 × 4 first Alec should times first instead of adding Not used BIDMAS/BODMAS BIDMAS/BODMAS He has done it in the wrong order Alec needs to use brackets so 2 + (3 × 4) Because you always do multiplication or division first **Not acceptable examples** Because the answer is wrong It is 2 + (3×4) = 15 It needs brackets Because working out should only be one sum	
10	$\frac{17}{30}$	B1	for $\frac{17}{30}$ or any equivalent fraction	
11	Reflection	M1 A1	for a correct reflection of the shape in any horizontal line other than the given mirror line for a fully correct reflection	Allow free hand drawing

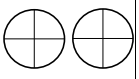
Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	0.45	B1	cao	
2	2 factors	B1	at least 2 of 1,5,7,35	No incorrect factors
3	10 45	B1	for 10 45	Accept any time notation
4	11	B1	cao	
5	Midpoint marked	B1	within tolerance	
6 (a)	$4ab$	B1		
(b)	$3x + 8$	M1	for method to collect terms eg $3x$ or 8	May be seen in working. Accept if no ambiguity.
		A1	for $3x + 8$	
7	EJ, EK, FJ, FK, GJ, GK	B2	fully correct list with no repeat	Allow letters in either order
		(B1	for at least 4 correct)	
8	2540 shown	M1	for finding the cost of one item eg 2 × 600 (=1200) or 7 × 120 (=840) or 2 × 250 (=500)	
		M1	full process eg "1200" + "840" + "500" (=2540) **or** 2500 − "1200" − "840" − "500" (= ±40)	
		A1	for 2540 or ±40	Ignore written statements as long as the correct figures are shown

Paper: 1MA1/2F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1		1480	B1	cao	
2		$\frac{7}{10}$	B1	oe fraction	
3		3	B1	cao	
4		Suitable number eg 725	B1	for a suitable 3 digit number ending in 0 or 5	
5		40	B1	cao	
6		−11, −7, −2, 3, 8, 10	B1	for −11, −7, −2, 3, 8, 10	Accept reverse order
7	(a)	Hexagon	B1	accept irregular hexagon	Accept unambiguous misspellings
	(b)	*AF*	B1	cao Accept *FA*	
	(c)	*AB* or *EF*	B1	*AB* or *EF*. Accept *BA* or *FE* or both	
8	(a)	3, 2	B1	cao	
	(b)	Point at (−4, 3)	B1	cao	
	(c)	Circle drawn, centre (1, −1)	B2 (B1	fully correct diagram circle drawn with radius 4 cm (any centre) **or** circle drawn using centre (1, −1) $r \neq 4$ cm)	Allow reasonable hand-drawn attempts

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	$\frac{35}{100}$	B1	for $\frac{35}{100}$ oe	
2	7	B1	cao	
3	Two from 1, 2, 3, 4, 6, 12	B1	for any two correct factors from 1, 2, 3, 4, 6, 12	Do not allow any incorrect numbers
4	6*m*	B1	for 6*m*	
5	1.3	B1	cao	
6	drawing of a parallelogram	B2 (B1	for an accurate drawing of a parallelogram that is not a rectangle or a rhombus for a quadrilateral drawn with no lines of symmetry or for a quadrilateral drawn with rotational symmetry of order 2)	Accept freehand drawings with some inaccuracy if the intention is clear
7	29	P1 P1 A1	for a start to a process, eg. (total apples =) 86 + 75 + 92 (= 253) or (total oranges =) 68 + 80 + 76 (= 224) **or** differences each week, eg. (week 1) 86 – 68 (= 18) or (week 2) 75 – 80 (= – 5) or (week 3) 92 – 76 (= 16) for complete process, eg "253" – "224" **or** "18" + "– 5" + "16" cao	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	0.38	B1	cao	
2	$\frac{3}{10}$	B1	or any equivalent fraction	3 : 10 or 0.3 or 30% get no marks
3	0.5	B1	cao	
4	−4	B1	cao	
5	5	B1	cao	
6	Explanation	C1	for a correct explanation. **Acceptable examples** he has labelled the radius incorrectly the diameter (label) should read radius the diameter goes from one side (of the circle) to the other the radius is labelled diameter **Not acceptable examples** a label is wrong there is nothing wrong with his labels the radius is wrong the centre is wrong, it should be the radius he has incorrectly labelled the diameter	Do not accept a statement that is ambiguous, where one aspect contradicts another, eg. “the radius goes from the centre whereas the diameter goes all round the circle”
7	Three correct factors	B2 (B1	for at least **three** from 1, 2, 4, 5, 10, 20 for **two** correct factors from 1, 2, 4, 5, 10, 20 and no more than one incorrect factor)	No incorrect factors No repeats (within the chosen 3) Ignore extra correct factors. Accept factor pairs, eg. 1 × 20 as two factors

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	6	B1	cao	
2	31	B1	cao	
3	12*a*	B1		
4	40	B1	accept answer in the range 38 to 42	
5	60	B1	cao	
6	2300	P1 P1 A1	for converting to millilitres or litres eg 3 × 1000 (= 3000) **or** 700 ÷ 1000 (= 0.7) for finding the difference eg [3000] – 700 **or** 3 – [0.7] (= 2.3) accept 2.3 litres	Process marks may be awarded in either order [3000] comes from 3 × 1000 or can be 30 or 300 or 30000 [0.7] comes from 700 ÷ 1000 or can be 7 or 70
7 (a)	15	B1	cao	
(b)	4	B1	cao	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	0.35	B1	cao	
2	8100	B1	cao	
3	valid number	B1	for a valid number, eg −6, −7, −7.5	
4	$\frac{6}{21}$	B1	eg $\frac{2}{7}$ or any equivalent fraction	
5	tenths or $\frac{9}{10}$	B1	for (9) tenths or $\frac{9}{10}$ or 0.9	Condone incorrect spellings provided the intention is clear. Accept .9
6 (a)		C1	for showing diagrams that represent 24 pictorially	shapes can come from a combination of shapes but must sum to 24
(b)	Year 8 (supported)	M1	for beginning to work with the pictogram, eg counting symbols or finding the total for one type of cake	Chocolate = 60 Vanilla = 39 Lemon = 18
		M1	for a complete method to find the total number, eg $5 \times 12 + 3\frac{1}{4} \times 12 + 1\frac{1}{2} \times 12 + 24$ or $60 + 39 + 18 + 24$ (= 141) **or** $5 + 3.25 + 1.5 + 2$ (= 11.75) **or** $150 \div 12$ (= 12.5)	For this M mark use 24 for banana or ft from their diagram, but do not award if banana has been omitted. If only totals are shown allow no more than one error in a total.
		C1	for selecting Year 8 with correct figures, eg Year 8 and 141 **or** Year 8 with 9 more **or** Year 8 with $11\frac{3}{4}$ **and** $12\frac{1}{2}$	

Paper: 1MA1/3F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1		$\frac{23}{100}$	B1	oe	
2		8	B1	cao	
3		tens or 30	B1	for (3) tens **or** 30 **or** thirty	Condone incorrect spelling provided the intention is clear
4		$3a$	B1	for $3a$	Allow $a3$
5		$\frac{1}{4}$ $\frac{1}{2}$ $\frac{2}{3}$	B1	for correct order	Accept any form Accept 0.6 or 0.66 or 0.67 or 0.7 or 60% or 66% or 67% or 70% or better for $\frac{2}{3}$
6	(a)	32	P1	for process to find length, eg 8×4	
			A1	cao	
	(b)	2.5 cm	P1	for process to find length, eg $10 \div 4$ (= 2.5) oe eg $1 + 1 + 1 \div 2$ (= 2.5)	
			A1	for 2.5 cm oe eg 25 mm, 0.025 m	Must include correct units
7	(a)	Bus	B1	cao	
	(b)	5	B1	cao	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	700	B1		Accept 7 hundreds
2	16	B1	cao	
3	Any two correct 1, 2, 4, 8, 16	B1	two correct and no incorrect	Allow more than two factors but all must be correct
4	−7, −3, 0, 4, 6	B1	accept in reverse order eg 6, 4, 0, −3, −7	
5	1.5	B1	oe eg $\frac{3}{2}$, $1\frac{1}{2}$	
6 (a)	5	B1	cao	
(b)	17	B1	cao	
(c)	8	B1	cao	
7 (a)	Trapezium	B1	cao	
(b)	Drawn	B1	for a right-angled triangle drawn	Allow 88 – 92° for the right angle

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	tenths or $\frac{7}{10}$	B1	for (7) tenths **or** $\frac{7}{10}$ **or** 0.7	Condone incorrect spelling provided the intention is clear
2	2.4	B1	oe eg $\frac{12}{5}$	
3	$\frac{19}{100}$	B1	oe eg $\frac{190}{1000}$	
4	$\frac{4}{10}$	B1	oe eg $\frac{2}{5}$, 0.4, 40%	Accept $\frac{4}{10}$ positively indicated in the list (as long as answer line is blank)
5	Two correct factors	B1	for 2 correct factors from 1, 2, 4, 8, 16, 32 and no incorrect factors	Accept one correct product
6	28	P1 P1 A1	for a process to work out the value of the £20 notes, eg 6 × 20 (= 120) oe for a process to work out the value of the £10 notes, eg 400 – "120" (= 280) oe allow £28	Build up processes are allowed. Condone one error in the build-up process. If 28 seen but 10 or 280 on answer line award P2A0 eg '28 notes of £10' then 10 or 280 on answer line
7 (a)	Mark at $\frac{1}{6}$	B1	for mark at $\frac{1}{6}$	Accept indications other than a cross, eg an arrow pointing to the correct position.
(b)	Mark at $\frac{2}{6}$	B1	for mark at $\frac{2}{6}$	

Paper 1MA1: 2F				
Question	**Working**	**Answer**	**Mark**	**Notes**
1 (a)		$3p$	B1	cao
(b)		$2m^3$	B1	cao
(c)		$10 - 4c + 6d$	M1	for $-4c$ or $6d$ (accept $+-4c$)
			A1	for $10 - 4c + 6d$
2		60	B1	cao
3 (a)		Walk	B1	cao
(b)		7 on chart	B1	for bar of height 7 drawn for girls walking
(c)		4	B1	cao
(d)		96	M1	for method to find number of Year 6 students in the survey e.g. 5 + 9 + 6 + 4 + 9 + 7 + 4 + 1 + 2 + 1 (= 48) or 14 + 10 + 16 + 5 + 3 (= 48)
			A1	for 96 or ft from (b), eg 82 if no bar in (b)
4		$\frac{11}{30}, \frac{2}{5}, \frac{7}{15}, \frac{1}{2}$	M1	converts fractions to a common form, e.g. fractions with a denominator of 30, decimals or percentages, at least two conversions correct or any 3 fractions in correct order
			A1	correct order

Paper: 1MA1/3F				
Question	Working	Answer	Mark	Notes
1 (a)		Don, Mersey, Trent, Thames, Severn	B1	accept 112, 113, 297, 346, 354
(b)		Shown	C1	shown with correct values eg (112 × 3 =) 336 (and 346) or 112 + 112 + 112 + 10 = 346 or 346 ÷ 3 = 115(.3..) (and 112) or 346 ÷ 112 = 3.089.. oe
2		$12p + 18b$	M1 A1	$12p$ or $18b$ or $p + b$ $12p + 18b$
3 (i)		15	B1	cao
(ii)		196	B1	cao
4		40	M1 A1	for 32 ÷ 4 (= 8) or 32 × 5 (= 160) or complete method eg 32 ÷ 4 × 5 oe (= 40) cao
5 (a)		1 : 3	B1	oe
(b)		42	M1 A1	ft 56 ÷ 4 (= 14) or complete method to find number of grey tiles eg 56 – (56 ÷ 4), 56 ÷ 4 × 3 oe (= 42) for 42 or ft

Paper: 1MA1/3F				
Question	**Working**	**Answer**	**Mark**	**Notes**
			[C1	for angle *BCA* = 63 and angle *CAB* = 63 and one reason from: base angles of an isosceles triangle are equal angles in a triangle add up to 180°]
8		30	M1	for 12 m = 1.9 to 2 cm or for a scale factor of 2.25 to 2.75 (comparing length of bus with height of the building) or a **complete** method using the height of the bus to compare with the height of the building.
			A1	answer in range 27 to 33
9		2, 7 or 3, 13 or 5, 11 or 2, 23	M1	for identifying two different prime numbers or two numbers which add up to give a square number or for a list of at least 3 prime numbers with no errors **and** a list of 3 square numbers with no errors.
			A1	for two correct prime numbers
10		60	M1	for method to find the number, eg. $48 \times \frac{3}{2}$ (=72) or to find $\frac{1}{6}$ th of the number, eg. 48 ÷ 4 (=12)
			A1	cao

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
10	Shows earnings	M1	for a method to start to work out earnings eg 11.2 × 8 (= 89.6) **or** 20 – 8 (= 12) **or** 8.4 × 12 (= 100.8)	Accept calculations in pence, or £ written in decimal form.
		M1	for a complete method eg 11.2 × 8 + 8.4 × (20 – 8) **or** "89.6" + "100.8" **or** 200 – "89.6" – "100.8" (= 9.6)	
		C1	Shows earnings eg 190.4(0) **or** 9.6(0) with fully correct arithmetic	Conclusion in figures; ignore written conclusion.
11	$\frac{40}{560}$ oe	M1	for correct start to method eg 600 – 560 (= 40) **or** $\frac{600}{560}$ oe (= 1.07(14…)) **OR** correct answer but not a fraction eg 0.07(14…)	
		A1	for any equivalent fraction to $\frac{40}{560}$ eg $\frac{1}{14}$	
12	69.2	B1	for a correct measurement of either length or width, eg 11.5 (cm) **or** 5.8 (cm)	Allow measurements 11.3 to 11.7 cm and 5.6 to 6.0 cm NB: could work in mm
		P1	for process to find actual dimensions, eg [length] × 200 (= 2300) **or** [width] × 200 (= 1160)	[length] in the range 11.0 to 12.0 [width] in the range 5.0 to 6.5 NB: could work in mm
		P1	(indep) for process to convert to metres [length in cm] ÷ 100 eg "2300" ÷ 100 (= 23) **or** "1160" ÷ 100 (= 11.6)	This mark can be awarded for the conversion of any amount in cm to m (ie not from an area)
		P1	(indep) for process to find the perimeter, eg"23" × 2 + "11.6" × 2 (= 69.2) **or** "11.5" × 2 + "5.8" × 2 (= 34.6)	calculations could be in cm or in m and could be scaled or unscaled figures
		A1	for an answer in the range 67.6 to 70.8	SC: award 3 marks for an answer in the range 67.6 to 70.8 using measurements outside the above ranges

Paper: 1MA1/2F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1		40 or tens	B1	cao	Accept trailing zeros, eg 40.0 Accept forty
2		odd square	B1	stating an odd square number eg 1, 9, 25, 49, 81, etc.	
3	(a)	4.56	B1	cao	Accept trailing zeros, eg 4.560
	(b)	7300	B1	cao	Accept trailing zeros, eg 7300.0
4		4	B1	cao	
5		$\frac{31}{100}$	B1	cao	
6		$\frac{5}{7}, \frac{11}{15}, \frac{3}{4}, \frac{19}{25}$	M1 A1	conversion into decimals or percentages or other equivalent form, at least two conversions correct, **or** any three fractions in correct order cao	0.71(...), 0.73(...), 0.75, 0.76 Accept list in reverse order for this mark Accept expressed in equivalent decimals or percentages or any other appropriate form
7	(a)	$4m$	B1	cao	
	(b)	$8np$	B1	cao	
8		263.2	M1 A1	for using the scale eg 14 × 18.8 **or** 14 × 18 **or** for the digits 2632 **or** an answer of 263 cao	

Paper: 1MA1/1F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
7	(a)	7	P1	for process to find the number of blue flowers, eg 30 – 8 – 10 – 5	Allow one error
			A1	cao	
	(b)	white	B1	for white or ft from (a)	Must be seen clearly for ft
8		$\frac{1}{4}, \frac{1}{3}, \frac{1}{2}, \frac{7}{12}, \frac{3}{4}$	M1	converts fractions to a common equivalent form, at least two conversions correct eg fractions with a denominator of 12, decimals or percentages, **or** any 4 fractions in correct order	0.25, 0.33(…), 0.5, 0.58(…), 0.75
			A1	cao	Accept list in reverse order for this mark Accept expressed in equivalent decimals or percentages or any other appropriate from or mixed forms
9	(a)	6	M1	for method to find distance, eg 4 × time difference **or** 30 mins = 2 miles	10.30 am – 9 am may be seen as 1.5(hr) or 1(hr) 30 (min) or 90 (min) or $\frac{3}{2}$(hr) or $1\frac{1}{2}$ (hr)
			A1	cao	
	(b)	12 35 pm	M1	for method to add time using consistent units eg 11 20 **or** 50 + 75 **or** 2 hours 5 mins	
			A1	12 35 pm or 12 35 (h)	Allow 12 35 but not 12 35 am
10	(a)	4	B1	cao	
	(b)	8	B1	cao	
	(c)	3	M1	for a correct first step eg subtracting 2 from both sides **or** dividing all terms by 6	Division by 6 must be ALL terms
			A1	cao	

Paper: 1MA1/1F					
Question		Answer	Mark	Mark scheme	Additional guidance
14	(a)	14	B1	for 14	
	(b)	Explanation	C1	for explanation **Acceptable examples** she divided by 2 but should have multiplied by 2 there are 96 halves in 48 48 × 2 = 96 **Not acceptable examples** 24 × 2 = 48	
15	(a)	8	B1	cao	
	(b)	125	B1	cao	
16	(a)	$10m - 15$	B1	for $10m - 15$ oe	Accept any reversing of order in the expression
	(b)	$3(n + 4)$	B1	for $3(n + 4)$ oe	Accept any answer in reverse order
17	(i)	Maxine with bigger number of trials	C1	for Maxine with reason **Acceptable examples** She throws the coin more times than Stuart **Not acceptable examples** Maxine throws it 50 times She gets more Tails Stuart (he) ……	
	(ii)	$\frac{37}{60}$	B1	for $\frac{37}{60}$ oe	

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	–7, –4, –2, 1, 8	B1	for –7, –4, –2, 1, 8	Accept reverse order 8, 1 –2, –4, –7
2	8000	B1	cao	
3	23	B1	cao	
4	4.2	B1	for 4.2 **or** $\frac{21}{5}$ oe	
5	7776	B1	cao	
6	14	P1 P1 A1	for making a start to the process eg 14 × 15 (= 210) **or** 14 × 15 × 6.50 (= 1365) **or** 1274 ÷ 6.50 (= 196) **or** 14 × 15 × 6.50 – 1274 (= 91) for a complete process eg (14 × 15 × 6.50 – 1274) ÷ 6.50 **or** 14 × 15 – (1274 ÷ 6.50) cao	
7	$\frac{13}{20}$	M1 A1	for 20 – 7 (= 13) **or** $\frac{7}{20}$ oe **or** 0.65 **or** 65% for $\frac{13}{20}$ or equivalent fraction	
8 (a)	43	B1	cao	
(b)	– 20 or ÷ 3	B1	for ÷ 3 **or** – 20 **or** × $\frac{1}{3}$ **or** + –20	

Paper: 1MA1/2F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
11	(a)	19	B1	cao	
	(b)	12.4 to 12.8	M1	for a complete method, eg attempts to read from the graph at a factor of 80 **and** scales up to 80 **or** attempts to read from the graph at two numbers that sum to 80 **and** finds the sum of their readings **or** 1 stone = "6"kg **and** 80 ÷ "6"	
			A1	for an answer in the range 12.4 to 12.8 **or** ft correct reading from graph	
12		0.35	P1	for $\left(\frac{1}{10}+\frac{3}{5}\right)\div 2$ **or** 0.1 **and** 0.6 **or** 10(%) **and** 60(%) **or** 35(%) **or** for converting to equivalent fractions with a common denominator eg $\frac{1}{10}$ **and** $\frac{6}{10}$	
			A1	for $\frac{7}{20}$ oe **or** 0.35	

Paper: 1MA1/2F					
Question		Answer	Mark	Mark scheme	Additional guidance
12	(a)	1.844977205	M1	for 3.403(940887) or 3.717(526059) or 2.014(944168) or 1.84(...) or 1.8(...)	Accept consistent use of a comma to indicate a decimal point
			A1	for 1.844(977205)	Answer must be given to at least 3 decimal places rounded or truncated
	(b)	1.84	B1	for 1.84 or ft from (a) provided answer to (a) has at least 3 dp	
13	(i)	21	M1	for 180 – 75 – 84	
			A1	cao	Angle may be indicated on the diagram
	(ii)	Reason given	C1	for reason that Angles on a straight line add up to 180	The key words underlined must be present There should be no incorrect reasons given
14	(a)	15	B1	14 to 16	
	(b)	540	M1	for a complete method, eg 30 × (36 ÷ 2) **or** 45 × (36 ÷ 3) **or** 60 × (36 ÷ 4) **or** ft "hourly rate from (a)" × 36	May be seen using a complete build up method for "45" allow 44 to 46 ft for accuracy
			A1	for 540 **or** ft (a)	Condone use of mixed rates eg 75×7 + 16 =541
15		$\frac{4}{9}, \frac{3}{5}, \frac{5}{8}, \frac{2}{3}$	M1	converts into decimals or percentages or equivalent fractions, at least 2 conversions correct **or** for any 3 fractions in correct order	0.44(...), 0.6, 0.625, 0.66(...)
			A1	for $\frac{4}{9}, \frac{3}{5}, \frac{5}{8}, \frac{2}{3}$	Accept in reverse order for this mark Accept expressed in equivalent decimals or percentages or fractions or in mixed numerical form

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
11	Yes (supported)	M1	for 48 × 3 (=144) or 35 × 4 (= 140) or 48 ÷ 4 (=12)	
		M1	for 48 × 3 (=144) **and** 35 × 4 (= 140) or "140" ÷ 48 (=2.9…) or "140" ÷ 3 (=46.6…) or "12" × 3 (=36) or "144" ÷ 4 (=36) or "144" ÷ 35 (=4.1…)	
		C1	for Yes with 144 **and** 140 **OR** 36 **OR** 2.9… **OR** 4 (spare) **OR** 4.1… (each frame) **OR** 46.6… (in each box)	
12	$\frac{3}{50}$	M1	for $\frac{60}{1000}$ or equivalent fraction	
		A1	cao	
13 (a)	300	M1	for a correct method to measure and convert one line to a distance in metres, eg. (*AB* =) 5 × 150 (= 750 or in the range 720 to 780) or (*BC* =) 4 × 150 (= 600 or in the range 570 to 630) or (*AC* =) 7 × 150 (= 1050 or in the range 1020 to 1080) **or** for 5 + 4 – 7 (=2 or in the range 1.4 to 2.6)	Accept measurements given in mm instead of cm for the first mark. Accept measurements given to a tolerance of ±2mm
		M1	for a complete method, eg. "750" + "600" – "1050" **or** "2" × 150	Where "750", "600", "1050" and "2" have come from their measurements
		A1	for answer in the range 210 to 390	
(b)	288	B1	for answer in the range 286 to 290	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
15	$\frac{5}{14}$	M1	for method to multiply fractions, eg $\frac{6 \times 5}{7 \times 12}$ **or** to simplify, eg $\frac{1}{7} \times \frac{5}{2}$ **OR** for a fractional answer equivalent to $\frac{5}{14}$	$\frac{30}{84}, \frac{15}{42}, \frac{10}{28}$
		A1	cao	
16	750	M1	for 250 × (60 ÷ 20) oe or 150 × (60 ÷ 20) oe or 100 × (60 ÷ 20) oe	
		A1	cao	
17	27.5	P1	for process to find number of yellow and green counters, eg 200 – 38 – 52 (= 110) **OR** for process to express red and blue counters as a percentage of 200, eg $\frac{38 + 52}{200} \times 100$ oe (= 45)	
		P1	for process to find number of yellow counters and/or the number of green counters eg "110" ÷ 2 (= 55) **OR** for process to express the sum of the yellow and green counters as a percentage of 200, eg $\frac{"110"}{200} \times 100$ (= 55) **or** 100 – "45" (= 55)	
		P1	for a complete process to express the number of yellow counters as a percentage, eg $\frac{"55"}{200} \times 100$ **or** "55" ÷ 2	
		A1	for 27.5 oe	

Paper: 1MA1/2F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
12	(a)	Line drawn	B1	for correct line shown on diagram, provided unambiguous	
12	(b)	Explanation	C1	for explanation, eg he has reflected in the *y*-axis (not the *x*-axis) **Acceptable examples** Alex didn't reflect in/on the *x*-axis She/he drew it on the *y*-axis or he didn't draw it on the *x*-axis It should be in the bottom right box Used a mirror on the *y*-axis (not *x*-axis) It needs to be reflected down not across Vertical (reflection) instead of horizontal (reflection) Drawn in the correct position on grid **and** statement "it should be here" **Not acceptable examples** the reflection is facing the wrong way It's in the wrong box or it should be on the bottom She/he has flipped it wrong It needs to go down not across She/he (should have) used a mirror There is no label or label in the wrong place Alex reflected the shape	
13		800	M1 A1	for method to work with fraction and 50, eg 16×50 **or** $50 \div \frac{1}{16}$ **or** $16 \times 50 + 50$ oe or $16 \times 50 - 50$ oe cao	$\frac{1}{16} = 0.0625$ 750 or 850 without working scores no marks

Paper: 1MA1/1F				
Question	**Working**	**Answer**	**Mark**	**Notes**
8 (a)		$\frac{15}{32}$	B1	oe
(b)		$\frac{5}{12}$	M1	uses a correct common denominator with at least one correct matching numerator e.g. $\frac{8}{12}$, $\frac{3}{12}$
			A1	
9		126	P1	for working with time,eg 10 – 8(=2) **or** 12 × 8(=96) **or** 12 × 10(=120)
			P1	for working with overtime, eg 12 ÷ 4(=3) **or** 1.25 × "2" (=2.5) **or** 0.25 × "2" (=0.5) **or** 1.25 × 12(=15)
			P1	for a complete process, eg (10 – 8) × overtime rate + 12 × 8 **or** 12 × 10 + "0.5" × 12
			A1	cao
10		1 : 10	M1	for 12 : (20 × 6) oe **or** 10 : 1 **or** 1 with 10 in incorrect notation
			A1	cao

Paper 1MA1: 1F				
Question	**Working**	**Answer**	**Mark**	**Notes**
13		343	P1	for finding area of one face eg 294 ÷ 6 (= 49)
			P1	for $\sqrt{\text{“49”}}$ (=7)
			P1	for “49” × “7” **or** for “7” × “7” × “7” oe
			A1	cao
14		$\frac{5}{7}$	P1	for $\frac{7}{5}$ = 1.4 **or** $\frac{5}{7}$ = 0.7.. **or** compares $\frac{1}{7}$ to $\frac{1}{5}$ **or** compare $\frac{5}{7}$ to 1 eg $1-\frac{5}{7}$ $(=\frac{2}{7})$ **or** compare $\frac{7}{5}$ to 1 eg $\frac{7}{5}$ = $1\frac{2}{5}$ **or** eg $\frac{49}{35}$ **or** $\frac{14}{35}$ **or** $\frac{25}{35}$ oe
		supported	P1	for $\frac{7}{5}$ = 1.4 and $\frac{5}{7}$ = 0.7.. **or** compares $\frac{5}{7}$ to 1 eg $1-\frac{5}{7}$ $(=\frac{2}{7})$ and $\frac{7}{5}$ to 1 eg $\frac{7}{5}$ = $1\frac{2}{5}$ **or** two correct fractions with common denominator eg $\frac{49}{35}$ and $\frac{25}{35}$
			C1	for $\frac{5}{7}$ with supporting evidence
15		45	M1	for a correct first step eg $\frac{9}{7+4+9}$ $(=\frac{9}{20})$ **or** $\frac{100}{7+4+9}$ (=5) **or** a full method for one of the other colours
			A1	cao

Paper 1MA1: 1F				
Question	**Working**	**Answer**	**Mark**	**Notes**
22 (a)	$\frac{8}{20}+\frac{5}{20}$	$\frac{13}{20}$	M1	for suitable common denominator with one fraction out of two correct **or** 0.4 + 0.25
			A1	for $\frac{13}{20}$ **or** 0.65 oe
(b)		$\frac{1}{8}$	B1	Accept 0.125
23		2×2×3×3	M1	for complete method to find prime factors; could be shown on a complete factor tree with no more than 1 arithmetic error or 2,2,3,3,(1)
			A1	for 2×2×3×3 oe
24		14:21:42	P1	for 2 out of 3 expressions in one letter eg from x, x+7 2x+14 **or** see a set of numbers to show interpretation of the relationships, eg 10, 17, 34
			P1	(dep) for sum of their 3 expressions =77 eg $x + x$+7+2x+14 =77 oe **or** 2 systematic correct trials including addition
			P1	for a correct process to isolate their term in x **or** x=14
			A1	for ratio 14:21:42 oe

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
6	Yes (supported)	P1	starts process to find the number of tins or meals needed, eg $2 \times \frac{1}{4}$ ($= \frac{2}{4} = \frac{1}{2}$) or $14 \times \frac{1}{4}$ ($= \frac{14}{4}$ oe) or 2×14 (= 28) or $8 \div 2$ **or** to find the number of meals from 8 tins, eg $8 \div \frac{1}{4}$ (= 32)	Numbers may be expressed in decimal form
		P1	a complete process to find the number of tins needed, eg $14 \times \frac{2}{4}$ (= 7) **or** $8 \div 2$ and "$\frac{14}{4}$" **OR** to find the numbers of meals $8 \div \frac{1}{4}$ (= 32) and 2×14 (= 28) **or** $8 \div \frac{2}{4}$ (= 16)	
		C1	'Yes' from a comparison of correct values, eg 7 (and 8) **or** 32 and 28 **or** 16 (and 14) **or** $\frac{14}{4}$ and 4	Correct working needs to be accompanied by a statement confirming enough food has been bought.
7		M1	for use of scaling, eg at least one of 12, 5, and 6 **or** 23 **OR** for using the representation, eg $\frac{30}{4}$ (= 7.5) or 5.75	May be seen on diagram.
		M1	for subtracting their total number of trees from 30, eg 30 – "23" (= 7) **OR** for subtracting the total number of squares from 7.5, eg 7.5 – "5.75" (= 1.75)	"23" must be from addition of 12, 5 and 6 Award 2 marks for 7 seen provided unambiguous "5.75" must be from addition of correct decimals/fractions
		C1	oe	May be alternative representations, eg one square + half square + quarter square or squares may be divided into 4 sections. Any orientation acceptable.

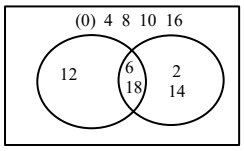
Paper: 1MA1/1F					
Question		Answer	Mark	Mark scheme	Additional guidance
8	(a)	–2, –1	B1	cao	
	(b)	Point at (2, 3)	B1	cao	Allow without label provided unambiguous; allow if the cross is nearer to (2, 3) than other points.
	(c)	Line drawn	B1	cao	Label not required; allow hand-drawn line. Allow any length provided intention is clear.
9		30	M1	$2 \times 9 + 3 \times 4$	May be shown in stages but an intention to add 2×9 and 3×4 must be clear
			A1	cao	
10		3 and 29 or 13 and 19	M1	for two numbers with a sum of 32, only one of which is prime, eg 5, 27 or 1, 31	Do not accept 1 as a prime number.
			A1	cao	
11	(a)	$\frac{10}{16}$	B1	cao	
	(b)	$\frac{11}{12}$	M1	for $\frac{10}{12}$ **OR** for using a suitable common denominator other than 12 with at least one of the two fractions correct, eg $\frac{2}{24} + \frac{20}{24}$	
			A1	for $\frac{11}{12}$ oe	Accept any equivalent fraction

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	500	B1	cao	
2	48 or 56	B1	for 48 or 56	Accept either or both. Do not award the mark if other numbers are shown with either.
3	1500	B1	cao	
4	9, 27	B1	cao	Do not award the mark if other numbers are shown.
5	$\frac{19}{100}$	B1	or any other equivalent fraction.	
6	16	M1 A1	for a complete method to find 20% of 80 eg 80 × 0.2 oe cao SC B1 for an answer of 64 or 96	
7	6	M1 A1	for interpreting the table to find the number of green counters (26 + 7 (= 33)) or the number of red counters (16 + 11 (= 27)) or the difference in circles (26 – 16 (=10)) or squares (11 – 7 (=4)) cao	33 – 27 = 6 10 – 4 = 6
8	39	M1 M1 A1	for finding one quarter of 52, eg 52 ÷ 4 (= 13) **OR** for finding the fraction to be filled, eg $1-\frac{1}{4}$ $\left(=\frac{3}{4}\right)$ oe for a complete method eg 52 – "13" or "13" × 3 **OR** for "$\frac{3}{4}$" × 52 cao	Accept equivalent decimals or percentages

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
9	$11e + 5f$	M1	for either $11e$ or $5f$	
		A1	for $11e + 5f$	
10	$\frac{3}{5}$	M1	for a start in the method eg $35 + 50 + 75$ (= 160) **or** $400 - 35 - 50 - 75$ (= 240) or $\frac{160}{400}$ oe	
		M1	for eg $\frac{400 - "160"}{400}$ or $\frac{2}{5}$ or $1 - \frac{160}{400}$ **or** for an unsimplified answer eg $\frac{"240"}{400}$ oe or as 60% oe	
		A1	cao	
11 (a)	241.56	P1	for difference for 1 parcel eg $35.38 - 15.25$ (= 20.13) **OR** for total cost for 12 parcels by either service eg 35.38×12 (= 424.56) **or** 15.25×12 (= 183)	
		P1	for a complete process eg "20.13" × 12 **or** "424.56" – "183"	
		A1	cao	
(b)	Explanation	C1	for explanation **Acceptable examples** both figures rounded down (refers to both figures) 20 is less than 21 and 15 is less than 15.25 **Not acceptable examples** both figures rounded (up); rounded down either 20 is less than 21 or 15 is less than 15.25 (refers to just one figure) the cost is 320.25 (more than 300); multiplying with bigger numbers	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
21	2 (supported)	P1 P1 P1 A1	for a process to find the number of men, eg. (60 ÷ 2) ÷ 3 (= 10) for a process to find the number of children, eg. 60 – "30" – "10" (= 20) for a start of a process to find the value of *n*, eg. ("20" : "10") ÷ 5 or 20 : 10 = 10 : 5 or "20" ÷ "10" for 2 with supportive working	 60 ÷ 3 = 20 scores no marks. Any ratio must come from correct processes to find the number of children and the number of men Award 0 marks for 2 with no correct supportive working Award full marks for 2 : 1 given as final answer from correct supportive working
22	$2\frac{1}{3}$	M1 M1 A1	for either $\frac{7}{4}$ oe or $\frac{4}{3}$ oe for method to find the product, eg $\frac{7\times4}{4\times3}$ or $\frac{21\times16}{12\times12}$ oe or for $\frac{28}{12}$ or $\frac{7}{3}$ oe for $2\frac{1}{3}$ or an equivalent mixed number	
23	perpendicular line constructed	C2 (C1	for a fully correct construction with all relevant arcs drawn for a perpendicular line drawn from *P* to the line *CD* or all relevant arcs drawn)	Perpendicular line segment between *P* and *CD* must be within guidelines Accept dotted lines.

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
19 (a)	$x^2 - 4x$	B1	cao	
(b)	$5(3y - 2)$	B1	cao	
(c)	9	M1	for a correct first stage, eg. expanding brackets, $7 \times f - 7 \times 5$ (= 28) oe **or** for division of both sides by 7, eg. $\frac{7(f-5)}{7} = \frac{28}{7}$	
		A1	cao	
20	$3n - 2$	B2	for $3n - 2$ oe	Accept a different variable, eg. $3x - 2$
		(B1	for $3n + k$ where $k \neq -2$ or is absent unambiguously shown)	$n = 3n - 2$ gets B1 only $n + 3$ gets NO marks
21	Shown	M1	for conversion to improper fractions eg. $\frac{7}{3}$ **or** $\frac{15}{4}$	Need not be shown with operators
		M1	(dep) for method to multiply fractions, eg. $\frac{7\times15}{3\times4}\left(=\frac{105}{12}\right)$ **or** $\frac{28\times45}{12\times12}\left(=\frac{1260}{144}\right)$ oe	
		C1	for complete working showing each stage as far as $\frac{35}{4}$ or $8\frac{9}{12}$	
22	B C D A	B2 (B1	cao for two or three correct)	
23	A & D	B1	cao	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
21	Venn Diagram	C1 C1 C1	for one correct region for two correct regions for all regions correct	 Ignore all entries except the region you are marking for each mark
22	$1\frac{8}{15}$	M2 (M1 A1	for a complete method, eg $4 - 2 + \frac{3}{15} - \frac{10}{15}$ condoning error with one numerator **or** for $\frac{21}{5} - \frac{8}{3} = \frac{63}{15} - \frac{40}{15} (= \frac{23}{15})$ with no more than one error for finding two fractions with a correct common denominator, with at least one correct corresponding numerator, eg $\frac{3}{15}, \frac{10}{15}$ **or** for converting both to improper fractions, eg $\frac{21}{5}, \frac{8}{3}$) $1\frac{8}{15}$ oe	 At least one improper fraction must be correct Any equivalents must be a mixed number

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
13 (a)	40	M1	2 ÷ (2+3) × 100 (=40) or build up to (and shows) 40:60 oe **or** for sight of $\frac{2}{5}$ oe **or** 100 ÷ 5 (=20)	
		A1	cao	
(b)	20 : 80	M1	100 − 20 (=80) or 80 : 20 oe	
		A1	20 : 80 oe	Accept any equivalent ratio; award full marks if an acceptable ratio is given and then incorrectly simplified.
14	80	P1	for $1-\frac{13}{15}\left(=\frac{2}{15}\right)$ **or** $\frac{13}{15}\times 600$ (million) (= 520 (million))	Condone no million or may see 000 000 used* *In this case condone up to two missing 0s for the award of the P marks.
		P1	for $"\frac{2}{15}"\times 600$ (million) (= 80 (million)) **or** 600 − "520" (=80) oe	For P marks accept $\frac{13}{15}, \frac{2}{15}$ rounded or truncated to no less than 2dp.
		A1	Accept 80 000 000	
15	Explanation	C1	for explanation **Acceptable examples** They do not add to 360 They add to 100 too least It is missing a 100 angle / It needs 100 more Because the total has to be 360 A whole circle is 360 **Not acceptable examples** They add up to 260 One of the angles is wrong A shape with 4 angles adds up to 360	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
20	$\frac{39}{88}$	M1	for finding the gap (A) $1-\frac{5}{8}$ $(=\frac{3}{8}=\frac{33}{88})$ **or** (C) $1-\frac{9}{11}$ $(=\frac{2}{11}=\frac{16}{88})$ **or** $\frac{5}{8}+\frac{9}{11}$ $(=\frac{55}{88}+\frac{72}{88}=\frac{127}{88})$	
		M1	for $\frac{9}{11}-\frac{3}{8}(=\frac{72}{88}-"\frac{33}{88}")$ **or** $\frac{5}{8}-\frac{2}{11}$ $(=\frac{55}{88}-"\frac{16}{88}")$ **or** $1-\frac{3}{8}-\frac{2}{11}(=1-"\frac{33}{88}"-"\frac{16}{88}")$ oe **or** $\frac{5}{8}+\frac{9}{11}-1$ $(=\frac{55}{88}+\frac{72}{88}-1)$	
		A1	oe	
21	1 79 2 55677789 3 377 4 57	B2	for a fully correct ordered diagram	Accept stem of 10, 20, 30, 40 Can be in reverse vertical order (with matching leaves) eg 4, 3, 2, 1
		(B1	for a complete unordered diagram **or** for an ordered diagram with at most one error or omission)	Errors can be omissions; one number in the wrong position is one error.
	Key: eg 2|5 = 25 **or** 20|5 = 25	B1	for correct key (units not required but must be correct if stated) eg 2|5 **or** 20|5 represents 25 (years)	Key must be consistent with the stem
22	45π	P1	for (area of circle =) $\pi \times 3^2$	
		P1	for (volume =) [area of circle] × 5	[area of circle] × 5 = $\pi \times 3^2 \times 5$ or $\pi \times 6^2 \times 5$ or $\pi \times r^2 \times 5$
		A1	cao	

Paper: 1MA1/3F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1		0.408, 0.41, 0.46, 0.5	B1	for 0.408, 0.41, 0.46, 0.5	Accept written in reverse order
2		2000	B1	cao	Accept two (2) thousand(s) or just thousand(s)
3		0.8	B1	cao	
4		19	B1	cao	
5		18	B1	cao	
6	(a)	6	B1	cao	
	(b)	May, October	B1	cao	
7		145.60	P1	for a process to work out the value of the large bars eg 208 ÷ 4 (=52 or 5200)	units may be ignored for the process marks
			P1	for a process to work out the value of the small bars eg (208 – "52") × 60 or $(1-\frac{1}{4})\times 208\times 60$ (=9360 or 93.6(0)) **or** for 145.6	work could be in pence or £
			A1	for 145.60 cao (must be correct money notation)	
8	(a)	102	B1	cao	
	(b)	82	M1	for a method of extracting the correct 4 numbers from the table, adding all 4 numbers and then dividing by 4 eg (143+121+45+19) ÷ 4 or "328" ÷ 4	
			A1	cao	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
21	$4\frac{7}{8}$	M2	for a complete method, eg $7 - 2 + \frac{3}{8} - \frac{4}{8}$ condoning error with one numerator **or** for $\frac{59}{8} - \frac{5}{2} = \frac{59}{8} - \frac{20}{8}$ $(=\frac{39}{8})$ with no more than one error **OR** for an answer of 4.875	
		(M1	for finding two fractions with a correct common denominator, with at least one correct corresponding numerator, eg $\frac{3}{8}, \frac{4}{8}$ **or** for converting both to improper fractions, eg $\frac{59}{8}, \frac{5}{2}$ **OR** for 7.375 – 2.5)	At least one improper fraction must be correct Both decimals must be correct
		A1	for $4\frac{7}{8}$ oe eg $4\frac{14}{16}$	Any equivalents must be a mixed number
22	125	P1	for process to find area of one face, eg 150 ÷ 6 (= 25) **or** $6x^2 = 150$	where x is the length of one side
		P1	for process to find side length, eg $\sqrt{"25"}$ (= 5)	
		P1	for a complete process to find volume, eg "5" × "5" × "5" or "25" × "5"	
		A1	cao	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
16	Explanation (supported)	M1	for method to find comparable figures eg 60 × 70 ÷ 100 **or** 45 ÷ 60 ×100 **or** 0.7 **or** 0.75	
		C1	for conclusion eg shows 42 (marks) **or** 75 (%) **or** 0.7 **and** 0.75	Figures need not be supported by words but must not be contradicted.
17	$3\frac{3}{5}$	M1	for inverting to give $\frac{3}{5}\times 6$ oe **OR** for two correct fractions with a common denominator eg $\frac{18}{30}\div\frac{5}{30}$	
		M1	for method to calculate eg $\frac{3\times 6}{5}$ or $\frac{3\times 30}{5\times 5}$ or $\frac{18}{5}$ or $\frac{90}{25}$ oe	
		A1	for $3\frac{3}{5}$ or any other equivalent mixed number eg $3\frac{15}{25}$	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
21 (a)	$2\frac{2}{15}$	M1	for a method to subtract using a common denominator with at least one fraction correct (suitable common denominator for original fractions with at least one correct numerator) eg $\frac{57}{15}-\frac{25}{15}$ **or** $(3)\frac{12}{15}-(1)\frac{10}{15}$	Use of decimals gets no credit unless it leads to a correct fraction
		A1	for $2\frac{2}{15}$ oe eg $\frac{32}{15}$	ISW incorrect conversion from improper fraction to mixed number or incorrect simplification of improper fraction.
(b)	Mistake identified	C1	for explaining that Kevin did not convert to the correct mixed number **Acceptable examples** In his answer $\frac{9}{24}$ should have been $\frac{11}{24}$ The 9 should be 11 He has not got the numerator right in his final answer He simplified into the mixed number incorrectly He has not put the remainder as the numerator $1\frac{9}{24}$ would give you $\frac{33}{24}$ rather than $\frac{35}{24}$ $\frac{35}{24}=1\frac{11}{24}$ **Not acceptable examples** He should have used a common denominator He has not simplified his answer He should have done keep, flip, change He converted the fraction wrongly The answer should be $1\frac{10}{24}$	Figures may be seen in the question space.

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
11	No with reason	C1	No with reason **Acceptable reasons:** (The sections are) not the same size **or** the angles are not the same (The arrow is) more likely to land on 1 or 3 than on 2 (The probability for) 2 should be ¼ 2 has a 90° angle but 1 and 3 both have obtuse angles **or** 135° each 2 has a 90° angle but the others are bigger 2 has a smaller area (the sections have) different sizes/angles/areas (the spinner is) not split equally (the angle for) 2 would be 120 not 90 (The angle for) 2 would be 120 or all angles would be 120 (landing on) 2 is less than a third the chances for the other two are higher than (for) 2 **Not acceptable:** Yes with any reason given No it should be $\frac{2}{3}$ (No because) 2 has a 90° angle the bigger the angle the more likely	
12	280	P1 P1 A1	for process to find the number of bars of white chocolate or milk chocolate, eg 24 ÷ 3 × 2 oe (= 16) or 24 ÷ 3 (= 8) **or** for process to work with total weight of chocolate, eg 24 × 35 (= 840) for complete process, eg (24 – "16") × 35 or "8" × 35 **or** "840" ÷ 3 cao	Allow use of 0.66.. or better **or** 0.33.. or better for both process marks Award P2 for an answer of 560

Paper: 1MA1/2F Question	Answer	Mark	Mark scheme	Additional guidance
24	10 000	M1	for recognising 8000 is $\frac{4}{5}$, eg 8000 ÷ 4 (= 2000) **or** $\frac{4}{5} = 8000$ **or** 8000 = 80% or 8000 ÷ 80 (= 100) **or** $x \times 0.8 = 8000$ oe	
		M1	for a complete method, eg "2000" × 5 **or** $8000 \times \frac{5}{4}$ **or** "100" × 100 **or** $\frac{8000}{0.8}$	
		A1	cao	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
15 (a)	$\frac{87}{200}$	B1	for $\frac{87}{200}$ oe fraction	
(b)	12	B1	cao	
16	15	P1	for process to find the number of games won, eg 48 ÷ 8 × 3 (= 18) oe **or** 48 – [games won] **or** for process to find the fraction of games drawn and lost **or** lost only, eg $1-\frac{3}{8}\left(=\frac{5}{8}\right)$ oe eg 1 – 0.375 (= 0.625) **or** $\left(1-\frac{3}{8}\right)\div 2\left(=\frac{5}{16}\right)$ oe eg $\frac{2.5}{8}$ **or** for representing the games in a ratio eg 3 : 2.5 : 2.5 oe	[games won] needs to be clearly stated and must be an integer less than 48 and not 48 ÷ 8 × 3 (= 18) oe
		P1	for a correct next step, eg 48 – "18" (= 30) **or** "$\frac{5}{8}$" × 48 (= 30) oe eg "0.625" × 48 (= 30) **or** "$\frac{2.5}{8}$" × 48 **or** 48 ÷ 8 × 2.5 oe **or** 18 : 15 : 15	
		A1	cao	

Paper 1MA1: 2F				
Question	**Working**	**Answer**	**Mark**	**Notes**
5 (a)		Monday wrong	C1	for seeing difference in tally marks and frequency for Monday
(b)		Comment	C1	for suitable comment, eg extra picture for Tuesday needed or explains that 0.5 of a CD is not possible
6		268.20	P1	for a process to work out the value of the £1 coins, eg. 495 ÷ 3 (= 165) or 495 × 0.33...or of the 50p coins, eg. 124 ÷ 2 (= 62)
			P1	for process to find the number of 20p coins, eg. (495 – 124 – ("165") (= 206)
			P1	for complete process to find total value using consistent units., eg. ("165") + (124 ÷ 2) + ("206" × 0.2) or 165 + 62 + 41.2
			A1	cao (accept 268.2)
7		0.985	B1	oe
8 (a)		25	B1	for 25 (accept 5^2)
(b)		24	B1	cao
(c)		23, 29	B1	for 23 and 29 and no extras
9		54	M1	for method to form equation, eg $90 + 2x + 3x = 360$ or for $360 – 90$ (= 270)
			M1	for $5x = 360 – 90$ or for $2x + 3x = 360 – 90$ or for $2x = 108$ or for $3x = 162$ or for $270 \div 5$
			A1	cao

Paper: 1MA1/1F					
Question		Answer	Mark	Mark scheme	Additional guidance
18	(a)	15, 17, 19, 20, 21, 23, 25	M1	for listing either set eg 15,20,25 **or** 15,17,19,21,23,25 with no incorrect numbers	The 'lists' may be seen in a Venn Diagram or in the working space in part (b) provided they are not contradicted by incorrect lists in part (a)
			A1	15,17,19,20,21,23 and 25 with no repeats	If repeats (but no incorrect numbers) award M1 only.
	(b)	Statement or 15 and 25	C1	eg odd multiples of 5 (between 14 and 26) oe NB Could be a general description, eg numbers that are in both (A and B), **or** 15 and 25 (ft from their sets A and B in part (a)) **or** numbers ending in 5 (between 14 and 26)	
19	(a)	$\frac{95}{28}$	M1	for a method to add using common denominators with at least one fraction correct (matching numerator with common denominator) eg $\frac{60}{28}+\frac{35}{28}$ **or** $(2)\frac{4}{28}+(1)\frac{7}{28}$	Use of decimals gets no credit unless it leads to a correct fraction
			A1	$\frac{95}{28}$ oe eg $3\frac{11}{28}$	
	(b)	$1\frac{3}{5}$	M1	for $\frac{6}{5}\times\frac{4}{3}$ **or** $\frac{24}{20}\div\frac{15}{20}$ **or** $\frac{8}{5}$ oe eg $1\frac{9}{15}$	Use of decimals gets no credit unless it leads to a correct fraction
			A1	cao	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
19 (a)	$\frac{7}{15}$	M1	for suitable common denominator with at least one fraction out of two correct, eg $\frac{10}{15} - \frac{3}{15}$ oe	
		A1	oe	
(b)	$\frac{1}{2}$	M1	for method to multiply fractions, eg $\frac{2\times3}{3\times4}$, $\frac{8\times9}{12\times12}$ **or** to simplify, $\frac{1}{3}\times\frac{3}{2}$ or $\frac{2}{1}\times\frac{1}{4}$ **OR** for an answer equivalent to $\frac{1}{2}$ (unsimplified) eg $\frac{2}{4}$, 0.5	
		A1	cao	
20	12.5	P1	starts to process the problem, eg assigns lengths of sides to squares **A** and **B** in the ratio 1 : 2 oe **and** calculates at least one area **OR** fits 4 of square **A** into square **B** **OR** for ratio of areas of squares eg 1 : 4 oe	May be seen in a diagram
		P1	for process to express relationship between area of shaded triangle and area of square B, eg 1 : 8, $\frac{1}{8}$ **OR** 0.125	May be seen in a diagram with figure given
		A1	for 12.5 oe	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
9 (a)	$\frac{3}{7}$	B1	oe	
(b)	1 : 2.5	M1	for appropriate method shown eg 30 ÷ 12 (= 2.5) **or** for a method that involves simplification of 12 : 30 approaching 1 : *n* , eg. 4 : 10 or 6 : 15 or 2 : 5 **or** for 2.5 : 1 or $2\frac{1}{2}$: 1	
		A1	for 1 : 2.5 or 1 : $2\frac{1}{2}$ **or** for *n* = 2.5	Accept a fraction equivalent to $2\frac{1}{2}$, eg. 1 : $\frac{30}{12}$ 2.5 alone gets M1A0
10	660	P1	for a process to work out the **number** of large marbles eg 12 ÷ 4 (=3) **or** the **number** of small marbles eg 12 – [number of large marbles] **or** 12 × (1− ¼) (=9)	[number of large marbles] could come from an incorrect method for finding $\frac{1}{4}$ of 12
		P1	(dep) for a process to work out the **weight** of large marbles eg "3" × 70 (=210) **or** to work out the **weight** of small marbles eg "9" × 50 (=450)	
		P1	for a complete process eg (12÷4) × 70 + 12 × (1− ¼) × 50 oe	
		A1	cao	
11	Reflection	M1	for a correct reflection of the shape in any line **or** a correct reflection of at least 3 vertices	Allow hand-drawn
		A1	cao	

Paper: 1MA1/1F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
12	(a)	$\frac{7}{12}$	M1	for finding two fractions with a correct common denominator, with at least one correct corresponding numerator, eg. $\frac{5}{12}$, $\frac{2}{12}$	
			A1	for $\frac{7}{12}$ oe eg $\frac{14}{24}$, $\frac{21}{36}$, $\frac{28}{48}$, $\frac{35}{60}$, $\frac{42}{72}$, …….	Ignore errors in cancelling following sight of an equivalent fraction to $\frac{7}{12}$
	(b)	$\frac{3}{16}$	M1	for method to multiply fractions, eg $\frac{3\times5}{10\times8}$ (= $\frac{15}{80}$) **or** simplifies the calculation eg $\frac{3}{2}\times\frac{1}{8}$ **or** for an answer equivalent to $\frac{3}{16}$ unsimplified	
			A1	cao	
13	(a)	$\frac{4}{15}$	B1	oe	4 : 15 gets B0
	(b)	0.7	B1	for 0.7 oe or $\frac{7}{10}$ oe or 70%	
14		19	M1	for a correct substitution, eg (y =) 6 × 4 – 5	
			A1	cao	
15	(a)	180	M1	rounds one figure appropriately 92 to 90 or 100 **or** 1.63 to 2 or 1.5 or 1.6 or 1.7	
			A1	for 180 (= 90×2) or 135 (= 90×1.5) or 144 (= 90×1.6) or 153 (= 90 × 1.7) or 200 (= 100×2) or 150 (= 100×1.5) or 160 (= 100×1.6) or 170 (= 100 × 1.7) or 163 (= 100×1.63) or 184 (= 92 × 2) or 138 (= 92 × 1.5) or 147.2 (= 92 × 1.6) or 156.4 (= 92 × 1.7)	Answer of 149.96 (92 × 1.63) gets M0A0 Answer with no working gets M0A0 Ignore further rounding of their result
	(b)	947.2	B1	cao	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
19	$2^2 \times 5^3$	M1	for a complete method to find prime factors; could be shown on a complete factor tree with no more than one error or by division by prime factors with no more than one error	Condone the inclusion of 1 for the method marks
		M1	for complete factorisation, eg 2, 2, 5, 5, 5	Could be shown on a fully correct factor tree
		A1	for $2^2 \times 5^3$	
20 (a)	$3\frac{17}{20}$	M1	for finding two fractions with a correct common denominator (multiple of 20), with at least one correct corresponding numerator, eg. $\frac{12}{20}, \frac{5}{20}$ or $\frac{32}{20}, \frac{45}{20}$	May be from $\frac{3}{5}$ and $\frac{1}{4}$ or from $\frac{8}{5}$ and $\frac{9}{4}$
		A1	for $3\frac{17}{20}$ or an equivalent mixed number SC: B1 for 3.85 if M0 scored	
(b)	shown	M1	for $\frac{8}{3} \times \frac{1}{6}$ oe or $\frac{4}{9} \times \frac{6}{1}$ oe or $\frac{8}{3} \times \frac{9}{4}$ oe	
		A1	for unsimplified fraction which could lead to $\frac{4}{9}$, eg $\frac{8}{18}$ or for $\frac{4}{3} \times \frac{1}{3}$ or $\frac{24}{9} \div 6$ **or** for unsimplified fraction which could lead to $2\frac{2}{3}$, eg $\frac{24}{9}$ **or** for unsimplified fraction which could lead to 6, eg $\frac{72}{12}$	
21	2^6	M1	for the start of a method of simplification, eg 2^{-5+8} (= 2^3) or $2^{-5\times2}$ (= 2^{-10}) or $2^{8\times2}$ (= 2^{16})	
		A1	cao SC B1 for answer of 64 or 8^2 or 4^3 if M0 scored.	

Paper: 1MA1/2F					
Question		Answer	Mark	Mark scheme	Additional guidance
12	(a)	82.5	M1	for a complete method, eg 132 ÷ 8 × 5	132 – 82.5 (= 49.5) M1 implied
			A1	cao	
	(b)	$\frac{1}{4}, \frac{9}{32}, \frac{21}{64}, \frac{3}{8}$	M1	converts into decimals or percentages or equivalent fractions, at least 2 conversions correct **or** for any 3 fractions in correct order	0.25, 0.28(125), 0.32(8125), 0.37(5)
			A1	cao	Accept in reverse order for this mark Accept expressed in equivalent decimals or percentages or fractions or in mixed numerical form
13		4 pint with correct figures	P1	for a process to find the price for one deal, eg 6 pints on 1st deal, 75 × 2 (= 150) **or** 8 pints on 2nd deal, 128 × 1.5 (= 192) oe	
			P1	for a process to find the price for both deals, eg 6 pints on 1st deal, 75 × 2 (= 150) **and** 8 pints on 2nd deal, 128 × 1.5 (= 192) oe	
			P1	for a process to find the cost per pint for both deals, eg "150" ÷ 6 (= 25) **and** "192" ÷ 8 (= 24) **or** for prices for a consistent number of pints for both deals eg for 2 pints "1.5" ÷ 3 (=0.5) **and** "1.92" ÷ 4 (= 0.48) **or** a comparison using a unit price eg "150" ÷ 6 × 8 (= 200) **and** 128 × 1.5 (= 192) oe	Accept in mixed units of pence and pounds Might look at a price difference for a consistent number of pints
			C1	"4 pint" with two correct comparative costs calculated making full use of both offers	"4 pint" can be indicated in words or other indication

Paper: 1MA1/1F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
10	(a)	24 000	B1		
	(b)	600	M1	for 6 or 100 or 98 used in a calculation	578.2 from 5.9 × 98 scores M1A0
			A1	for 600 (from 6 × 100) or 588 (from 6 × 98) or 590 (from 5.9 × 100) or 588.6 (from 6 × 98.1)	M0A0 for working with unrounded figures with answer rounded to 600 ISW rounding of an estimated answer e.g. rounding 588 to 600 Subtraction of additional products after a rounded calculation may score the M mark for 6 or 100 or 98, but will not score the A mark unless one of the acceptable answers is reached.
11	(a)	$\frac{3}{8}$	M1	for method to subtract using a correct common denominator, with at least one correct numerator, eg. $\frac{5}{8}-\frac{2}{8}$ or $\frac{10}{16}-\frac{4}{16}$ or $\frac{20}{32}-\frac{8}{32}$ or for correct method to convert both fractions to decimals and subtract, eg $0.625-0.25$	Do not condone working with fractions with decimal numerators unless it leads to a fraction or fractions where both numerator and denominator are integers.
			A1	for $\frac{3}{8}$ oe, eg $\frac{6}{16}$, $\frac{9}{24}$, $\frac{12}{32}$, 0.375	Ignore errors in cancelling after sight of an equivalent fraction to $\frac{3}{8}$
	(b)	16	M1	for dividing by 5 and multiplying by 2, in any order or for 0.4 × 40 oe	Accept $\frac{2}{5}\times 40$ or $\frac{2}{5}\times\frac{40}{1}$
			A1	cao	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
20 (a)	$2\frac{1}{3}$	M1	for a method to subtract by writing both fractions with a common denominator with at least one correct numerator, eg. $3\frac{3}{6}-1\frac{1}{6}$ **or** $\frac{3}{6}-\frac{1}{6}(=\frac{2}{6})$ **or** $\frac{21}{6}-\frac{7}{6}(=\frac{14}{6})$ **or** $\frac{42}{12}-\frac{14}{12}(=\frac{28}{12})$	
		A1	for $2\frac{1}{3}$ or an equivalent mixed number	Do not ISW incorrect further work from correct equivalent mixed number
(b)	Shown	M1	for conversion to improper fractions, eg. $\frac{21}{4}$ **or** $\frac{7}{3}$ **or** $\frac{9}{4}$	
		M1	(dep) for method to divide by a fraction, eg. $\frac{21}{4}\times\frac{3}{7}$ **or** $\frac{63}{12}\div\frac{28}{12}$	
		C1	for complete work showing each stage as far as $\frac{9}{4}$ **or** $2\frac{7}{28}$	Must see an intermediate step, eg $\frac{63}{28}$ must be seen and then cancelled or correct cancelling seen before multiplication

Paper: 1MA1/2F				
Question	**Working**	**Answer**	**Mark**	**Notes**
1		0.07	B1	cao
2		42 or 48	B1	42 or 48
3 (a)		$15fg$	B1	cao
(b)		t^2	B1	cao
(c)		$4n$	B1	cao
4 (a)		6	P1	for process to find the total weight of one type of fruit eg 4 × 125 (=500) or 2 × 170 (=340) or 3 × 135 (=405) or 1245
	1785−1245 =540		P1	complete process to find the total weight of oranges eg "1785" – ("500" + "340" + "405") or sight of digits 54 or answer given as 0.6 or 60
	540 ÷ 90		A1	cao SC B1 for answer of 15
(b)(i)		No	P1	Starts process, eg 1000 ÷ 75 (digits 13(.3..) seen) or 15 × 75 (= 1125) or 1.125 or showing 1000 ÷ 15 (=66(.6..)) or counts to 975 or 1050
		(supported)	C1	"No" with correct working eg as evidenced by work from P1 mark.
(b)(ii)		Comment	C1	for valid comment, eg may get enough tomatoes if tomatoes weigh less than assumed (75g), not if weight is more than 75g.

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	0.9	B1	cao	Accept with trailing 0s eg 0.90
2	30	B1	cao	Accept 30.0
3	2500	B1	cao	
4 (a)(i)	30	B1	cao	
(ii)	Explanation	C1	for explanation, eg increase by 7, add 7, states $7n - 5$	
(b)	65	B1	cao	
5 (a)	974	B1	cao	
(b)	16,28 or 18,26	B1	for fully correct pair of numbers	
6	1, 2, 3, 5, 6, 10, 15, 30	B2	cao	Numbers may be shown in any order eg paired; Accept numbers repeated
		(B1	for at least 3 correct factors with no more than one incorrect answer)	
7	24	M1	for a complete method eg $6 \times 2 \times 2$ or sight of 6, 2, 2 ready for calculation, or with the wrong operation	Could be seen as two separate calculations
		A1	cao	SC:B1 for a answer of 1.5 oe
8 (a)	2.28	B1	cao	
(b)	2.5604	B2	cao	If the correct answer is shown and then rounded, award full marks.
		(B1	for 6.6564 seen, or for 2.56 or for digits 25604)	

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	$\frac{3}{4}$	B1	for $\frac{3}{4}$ or any other equivalent fraction	
2	−3, −1, 0, 2, 4	B1	for −3, −1, 0, 2, 4	Accept reverse order
3	At least **two** of 1, 3, 5, 15	B1	for at least two of 1, 3, 5, 15 with no incorrect values	Accept 3 × 5 etc.
4	1.756	B1	cao	
5	2 000 000	B1	for 2 000 000 or 2×10^6	
6	Yes and statement	P1 P1 C1	for a first step towards solution, eg. 2 × 2.75 (= 5.5) or 2.75 + 2.9 (= 5.65) **OR** 10 − 1.5 (= 8.5) or 10 – 2.9 (= 7.1) or 10 – 2.75 (= 7.25) for a complete process to find figures to compare eg. 2 × 2.75 + 2.9 + 1.5 (= 9.90) or 10 − (2 × 2.75 + 2.9) (=1.60) **OR** 2 × 2.75 + 2.9 (=8.40) **and** 10 − 1.5 (= 8.5) for correct conclusion with accurate figure(s) eg. Yes and (£)1.6(0) **or** Yes and (£)9.9(0) **or** Yes and (£)8.4(0) **and** (£)8.5(0)	
7	$7y$	B1	for $7y$ oe	Accept $7 \times y$ oe Accept a formula, eg. $P = 7y$ but **not** $y = 7y$

Paper: 1MA1/1F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1		0.309, 0.32, 0.35, 0.4	B1	for 0.309, 0.32, 0.35, 0.4	Accept written in reverse order: 0.4, 0.35, 0.32, 0.309
2		18	B1	cao	18 must be the only number selected for this award
3		5	B1	cao	
4		0.75	B1	cao	
5		700	B1	for 700 Accept 7 hundreds	
6	(a)	cross at ½	B1	Cross (or mark) at ½	Accept any mark near to ½ if the intention is clear; do not accept if any additional marks are shown
	(b)	cross at 0	B1	Cross (or mark) at 0	Accept any mark near to 0 if the intention is clear; do not accept if any additional marks are shown

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	$\frac{37}{100}$	B1	or any other equivalent fraction	
2	29 000	B1	cao	
3	$6e$	B1		
4	25	B1	cao	
5	27	B1	cao	
6	Yes with supporting calculations	M1	for ONE correct time conversion seen or used eg 105 (mins) is 1 (hr) 45 (mins) **or** 16 45 – 14 30 = 2 hr 15 mins **or** 14 30 + 1 (hr) + 45(mins)	May be implied by a correct calculation 1 hr = 60 mins is not enough for this mark
		M1	for a full method to make a comparison eg for adding 20 and 105 to 14 30 (=16 35) **or** for subtracting 20 and 105 from 16 45 (=14 40) **or** for finding the time differences eg 16 45 – 14 30 (= 2 hr 15 mins) and 105 + 20 (=125 mins) **or** adding 105 to 14:30 (= 16 15) **and** 1645 – "16 15" (=30)	Intention to do the correct calculation or calculations is enough for this mark Accept any sensible time notation throughout (pm is not required)
		C1	correct conclusion from the comparison of accurate figure(s) eg Yes and 16 35 or 4.35(pm) 14 40 or 2.40(pm) **or** for 2 hours 5 minutes and 2 hours 15 minutes oe **or** for 10 minutes spare **or** 30 (minutes to get to the bus stop)	Yes may be implied by a statement

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	30	B1	cao	
2	–10, –7, –2, 0, 1, 8	B1	Accept the reverse order, eg 8, 1, 0, –2, –7, –10	
3	0.09	B1	cao	Accept an answer of .09
4	330	B1	cao	
5	49	B1	cao	
6 (a)	Trapezium	B1	for trapezium	Accept incorrect spelling provided intention is clear
(b)	Cylinder	B1	for cylinder	Accept incorrect spelling provided intention is clear
7	14	M1	for 42 ÷ 3	
		A1	cao	
8	Error identified	C1	error correctly identified **Acceptable examples** bar for brown is too high 16 should be 15 brown needs to be one less brown is wrong the graph does not match the table **Not acceptable examples** no title the gaps between the bars are wrong	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	$\frac{3}{10}$	B1	for $\frac{3}{10}$ oe	Accept equivalent fractions, eg $\frac{30}{100}$
2	9	B1	cao	
3	4	B1	cao	
4	10 or 12	B1	for 10 or 12	Accept both 10 and 12 given
5	15*tw*	B1	for 15*tw*	May be seen in different order
6	60	P3	for complete process to find the total costings eg 23 + 33 + 24.5(0) + 24.5(0) + 15 + 10 + 10 (= 140) **or** for a complete process to find the total money left, eg. 200 – 23 – 33 – 24.5(0) – 24.5(0) – 15 – 10 – 10 (= 60), condone one error, eg one omission or one additional cost	All processes may be seen as part of subtractions to find money left
		(P2	for process to find the total cost of all theme park tickets, eg 33 + 2 × 24.5(0) (= 33 + 49 = 82) **or** for process to find the total cost of all meals, eg 15 + 2 × 10 (= 15 + 20 = 35) **or** for process to find the total cost for the children, eg 2 × 24.5(0) + 2 × 10 (= 49 + 20 = 69) **or** for process to find total costs with just **one** child, eg 23 + 33 + 24.5(0) + 15 + 10 (= 105.5(0)))	Additions may include other elements for process marks, eg. 23 + 33 + 2 × 24.5(0)
		(P1	for a start to a correct process, considering at least 2 costs eg 33 + 24.5(0) (= 57.5(0)) or 2 × 24.5(0) (= 49) **or** for start to a process to find money left, eg 200 – 23 (= 177) or 200 – 33 (= 167))	May be any start to a correct process
		A1	cao	

Paper: 1MA1/2F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1		6200	B1	for 6200 (accept in words)	
2		$\frac{7}{10}$	B1	or any equivalent fraction	
3		900	B1	cao	
4		$12t$	B1	for $12t$	
5		100	B1	cao	
6	(a)	Cross marked at 0	B1		Allow if intention is clear
	(b)	Cross marked at $\frac{1}{2}$	B1		Allow if intention is clear
7	(a)	9.3	B1	accept answer in the range 9.1 to 9.5	
	(b)	106	B1	accept answer in the range 104 to 108	
	(c)	isosceles	B1	for isosceles	Condone incorrect spelling provided intention is clear
8		96	P1	for process to find total distance before or after using scale, eg 8 + 16 (= 24) **or** "32" + "64" oe	Condone incorrect use of scale if addition seen.
			P1	for process to use scale, eg 8 × 4 (= 32) or 16 × 4 (= 64) or [PR] × 4	where [PR] is 12 or 13 or is clearly stated
			A1	cao	

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	Two of: 1, 2, 3, 6, 9, 18	B1	for 2 correct factors and no incorrect	Allow more than 2 correct factors but no incorrect.
2	$\frac{9}{10}$	B1	oe	
3	700	B1	cao	
4	One of: 16, 25, 36, 49	B1	for one correct square number	Allow more than 1 correct square number but no incorrect.
5	120	B1	cao	
6	12.5(0)	M1 A1	for $50 \div 4$ cao	
7 (a)	Cone	B1	for cone or circular pyramid	
(b)	Diagram	B1	suitable diagram drawn	

Paper: 1MA1/2F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1		–3 –1 2 4 7	B1	for –3 –1 2 4 7	Allow correct reverse order: 7 4 2 –1 –3
2		5	B1	cao	
3		0.31	B1	cao	Accept .31
4		35	B1	cao	
5		2	B1	cao	
6	(a)	10	B1	cao	
	(b)	2 full squares and 3 quarters of a square	B1	for a diagram for April showing the equivalent of 2 full squares and 3 quarters of a square	eg 11 quarter squares drawn separately 3 quarters may be seen as one half square and one quarter square
	(c)	18	P1	for process to find houses sold in February = 4 + 4 + 1 (= 9) or March = 4 + 4 + 4 (= 12) **or** 60 – ([Jan + Feb + Mar] + 11)	February and March totals may be seen on the diagram May be implied by 42 [Jan + Feb + Mar] is clearly their houses sold in Jan, Feb and March for this mark only
			P1	for a complete process, eg. 60 – ([answer to part (a)] + "9" + "12" + 11) or 60 – $(2\frac{1}{2} + 2\frac{1}{4} + 3) \times 4 - 11$	$4\frac{1}{2}$ squares drawn for May gets P2
			A1	cao	18 must be seen for full marks
7	(a)	8.7	B1	for answer in the range 8.5 to 8.9	
	(b)	67	B1	for answer in the range 65 to 69	
	(c)	6-sided shape	B1	for a 6-sided shape	Allow free hand drawing

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	5*e*	B1	cao	
2	0.75	B1	cao	
3	6	B1	cao	
4	32	B1	cao	
5	Acute	B1	cao	
6 (a)	42	B1	cao	
(b)	Yes (supported)	P1	for a start to a process to find figures to compare, eg 33 + 40 + 27 (= 100) **or** 20 + 14 + 15 (= 49) **or** $(33-20)+(40-14)+(27-15)$ $(=51)$	
		P1	for complete process to give figures to compare, eg 33 + 40 + 27 (= 100) **and** 20 + 14 + 15 (= 49) **and** "49" × 2 (= 98) or 33 + 40 + 27 (= 100) **and** 20 + 14 + 15 (= 49) **and** "100" ÷ 2 (= 50) or 33 + 40 + 27(= 100) **and** 20 + 14 + 15(= 49) **and** "100"−"49"(=51) or 33 + 40 + 27(= 100) **and** $20\times2+14\times2+15\times2(=98)$ or $(33-20)+(40-14)+(27-15)$ $(=51)$ **and** 20 + 14 + 15 (= 49)	
		C1	for Yes with correct supporting figures, eg 100 **and** 98 or 50 **and** 49 or 100 **and** 49 **and** 51 or 51 **and** 49	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
12	$\frac{9}{25}$	M1	for $\frac{n}{6+9+10}$ where n is an integer < 25	
		A1	for $\frac{9}{25}$	Or equivalent fraction
13 (a)	example	C1	example given eg 40, 80, etc.	
(b)	No with reason	C1	for No with reason **Acceptable examples** 80 and 88 are both in the sequence 80 is in the sequence and 85 is 5 more 24, 32, ….. 80, 88, …. 85 is not in the 8 times table 85 is an odd number $8n+16=85$ so n is not a whole number. **Not acceptable examples** adding 8 each time will not lead to 85 (insufficient) it goes past 85 Yes …..	No can be implied from their statement
14	2.4774(011…)	M1	for 8.77 or 3.54 or 2.477 or 2.47 or 2.48 or $\frac{877}{354}$	
		A1	for 2.4774(011…)	If the answer has been rounded to less than 4 dp but the figure is shown in working to 4 dp or more, award full marks. Ignore any incorrect digits after the 4th decimal place.

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
22	0.00128	M1	for digits 128 **or** for correct placement of the decimal point following one arithmetical error, eg. 32 × 4 = 138 with an answer of 0.00138	
		A1	for 0.00128 **or** 1.28×10^{-3}	
23	7500	M1	for method to find expected number of model B, eg $\frac{15}{80} \times 40000$ oe **or** $\frac{15}{"23+15+30+12"} \times 40000$ oe	
		A1	cao	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
12	10 55	M1	for starting a process of working with time eg for undertaking some time conversion eg 1 h = 60 min eg 3¼ hrs is 195 mins or ¼ hr = 15 mins or 3 h = 180 min **or** for an answer of 10 45 (am) or 10 40 (am) or 10 50 (am) **or** for an answer of 10 55 pm	
		A1	for 10 55 (am)	
13 (a)	$20h^3$	B1	cao	
(b)	$7y$	B1	cao	
14	$\frac{6}{11}$, 0.558, 0.56, 57%, $\frac{7}{12}$	M1	Converts numbers to common equivalent form, eg 0.58(33..), (0.56), 0.57(0), 0.54(54..), (0.558) **or** any 4 in correct order **or** all 5 in correct reverse order	Decimals converted to at least 2 d.p.
		A1	for correctly ordered list	May be given in converted format.
15 (a)	**57** 64 **7** **36** **25** 11	B3	for a fully correct frequency tree	If probabilities used instead of frequencies award a maximum of B2
		(B2	for at least 4 figures correctly placed)	
		(B1	for at least 1 figure correctly placed)	
(b)	$\frac{57}{64}$	M1	$\frac{a}{64}$ where $0 < a < 64$ and a is an integer (ft) **or** $\frac{57}{b}$ where $b > 57$ and b is an integer (ft)	Must be values from their diagram with numerator < denominator
		A1	(ft) for $\frac{57}{64}$ oe	Accept probabilities given as equivalent fractions, 0.89(06…) or 89(.06..)%

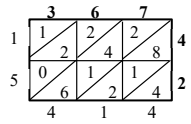
Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
18	$T = 5b + 28c$	M1	for $5b$ **or** $28c$ **or** T = a linear expression in b and/or c	Allow $5 \times b$ and $28 \times c$ throughout
		M1	for $5b + 28c$ **or** partially correct formula, eg $T = 5b$ $(+ kc)$ oe **or** $T = 28c$ $(+ kb)$ oe	
		A1	for $T = 5b + 28c$ oe	
19	$8n - 13$	B2	for $8n - 13$ oe	Accept a different variable eg $8x - 13$
		(B1	for $8n + k$ where $k \neq -13$ or is absent unambiguously shown)	$n = 8n - 13$ or $8n^{th}$ - 13 gets B1 only
20	56.4	M1	for a start to a method, eg $846 \div 15$ or $8.46 \div 0.15$ or $8.46 \div 3 \times 20$ or $282 \div 5$ that leads to 5 as the first digit. **or** for a complete method with no more than one arithmetic error.	A start to a repeated subtraction method or a build-up method is acceptable if a correct first digit of 5 is found
		A1	for digits 564 identified	
		A1	(ft) dep on M1 for correct placement of the decimal point into their final answer	An answer of $56\frac{2}{5}$ gets 3 marks

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
18	15.12	M1	for a complete method with relative place value correct including an intention to add all the appropriate elements of the calculation	252 1260 1512 6 3 1 1 2 6 2 5 2 4 1 2 4 1 2 60 3 20 1200 60 4 240 12 1200 + 60 + 240 + 12 = 1512
		A1	for digits 1512	
		A1	(dep on M1) for correct placement of the decimal point into their final answer	
19 (a)(i)	1	B1	cao	
(ii)	$\frac{1}{25}$	B1	oe	
(b)	2^6	M1	for a correct first step using a rule of indices, eg $2^{5+4}(=2^9)$ or $2^{5-3}(=2^2)$ or $2^{4-3}(=2^1)$ **or** for $2 \times 2 \times 2 \times 2 \times 2 \times 2$ or 64	
		A1	for 2^6	Accept $n = 6$

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
17	No, with correct figures	P1	for start to process to find amount of each paint colour needed eg 24 ÷ (4 + 3 + 1) (= 3) **or** 8 : 6 : 2 **or** for start to process to simplify 12 : 7 : 5 to a ratio that can be compared to 4 : 3 : 1 eg 12 ÷ 4(= 3) **or** 7 ÷ 3 (= 2.3 ...) **or** 5 ÷ 1 (= 5)	
		P1	for complete process to find amount of each paint colour needed eg "3" × 4 (= 12) **and** "3" × 3 (= 9) **and** "3" × 1 (= 3) **or** 12 : 9 : 3 **or** for complete process to cancel 12 : 7 : 5 to a ratio that can be compared to 4 : 3 : 1 eg 12 : 7 : 5 as 4 : "$\frac{7}{3}$" : "$\frac{5}{3}$" or 4 : "2.3 ..." : "1.6 ..." **or** 12 : 7 : 5 as "$5\frac{1}{7}$" : 3 : "$2\frac{1}{7}$" or "5.14 ..." : 3 : "2.14 ..." **or** 12 : 7 : 5 as "$2\frac{2}{5}$": "$1\frac{2}{5}$": 1 or "2.4" : "1.4" : 1	
		C1	No, with correct figure(s) for comparison. eg No with 12 : 9 : 3 No, 9 litres of yellow needed No with 4 : 2.3 ... : 1.6 ...	No may be indicated by eg 'not enough yellow'.
18	682	M1	for a start to a method, eg. 8184 ÷ 12 (or 818.4 ÷ 1.2) that leads to 6 as the first digit **or** for a complete method with no more than one arithmetic error	A start to a repeated subtraction method or build-up method is acceptable if a correct first digit of 6 is found
		A1	for digits 682	
		A1	(ft) (dep M1) for correct placement of the decimal point into their final answer	

Paper: 1MA1/1F

Question	Answer	Mark	Mark scheme	Additional guidance
15	64.8(0)	M1	for a complete method with relative place value correct including an intention to add all the appropriate elements of the calculation or for a complete method to find 35% of 48 or 0.48 and add this on eg 48 ÷ 10 (= 4.8) and "4.8" ÷ 2 (= 2.4) and 48 + 3 × "4.8" + "2.4"	1080 240 5400 1440 6480 4800 6480 1 3 5 0 | 0/4 1/2 2/0 | 4 6 | 0/8 2/4 4/0 | 8 4 8 0 | | 100 | 30 | 5 | | 40 | 4000 | 1200 | 200 | | 8 | 800 | 240 | 40 |
		A1	for digits 648	
		A1	ft (dep on M1) for correct placement of the decimal point into their final answer	4000+800+1200+240+200+40 Incorrect answer scores maximum 2 marks.

Paper: 1MA1/1F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
20	(a)	15.414	M1	for a complete method with relative place value correct including an intention to add all the appropriate elements of the calculation eg, 2 lines of the 1st method, internal numbers of grids, or complete structure shown of partitioning methods.	14680 734 15414  300 60 7 40 12000 2400 280 2 600 120 14 12000 + 2400 + 280 + 600 + 120 + 14 = 15414
			A1	for digits 15414	
			A1	(ft) dep on M1 for correct placement of the decimal point into their final answer	
	(b)	37.4	M1	for a start to a method, eg 598.4 ÷ 16 (or 59.84 ÷ 1.6) = 3 (as a first digit)	A start to a repeated subtraction method or build-up method is acceptable if a correct first digit of 3 is found
			A1	for digits 374	
			A1	(ft) dep on M1 for correct placement of the decimal point into their final answer	

Paper: 1MA1/1F				
Question	**Working**	**Answer**	**Mark**	**Notes**
1		16	B1	cao
2		7.265	B1	cao
3 (a)		56*ef*	B1	cao
(b)		12.5	B1	oe
4		80	B1	cao
5		42	M1 A1	for showing method to work out 60% of 70, eg 0.6 × 70 **or** (70 ÷ 10) × 6 (= 42) cao
6 (i)		× at ½	B1	
(ii)		× at 0	B1	
7		No (supported)	P1 P1 C1	process to work with either cost of 3 sausages e.g. 3 × 2.30 (=6.9(0)) **or** division of a cost by 3 process to work with costs of at least 3 of bread rolls, bread rolls, ketchup, change, sausages e.g. 2 × 1.50 + 1.60 **or** 1.50 + 1.60 + 0.30, **or** 10 – 1.50 – 1.60 − 0.30 **or** 10 – 1.50 – 1.50 – 1.60 E.g. No **and** (£)5.10 and (£)6.90 No **and** (£)5.40 and (£)6.90 No **and** (£)1.70 No **and** (£)11.50 **or** (£)11.80 **or** shows cost of sausages at £2.30 and cost of any 2 other items is greater than (or equal to) £10 NB can work in £ or p throughout. Condone 5.1 etc

Paper: 1MA1/2F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1		8	B1	cao	
2		1.6	B1	cao	
3		243	B1	cao	
4		Suitable number eg. 564 000	B1	for a suitable 6 digit number with 4 as thousands digit	Can be a decimal eg 4652.99, 4625.90
5	(a)	350	B1	cao	Accept trailing zeros eg 350.0
	(b)	7.7	B1	cao	Accept trailing zeros eg 7.70
	(c)	320	B1	cao	Accept trailing zeros eg 320.0
6		3 and 9	P1	for starting to list factors of 36 **or** multiples of 3 **or** odd numbers	Must be at least 3.
			A2	cao	In either order
			(A1	for one correct answer)	
7		(MYL) (MLY) (YML) (YLM) (LMY) (LYM)	M1	for at least 3 correct different combinations	for M1 ignore extras or repeats; accept words or unambiguous abbreviations
			A1	fully correct list with no extras or repeats	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	0.02, 0.152, 0.2, 0.37, 0.4	B1	for correct order	Accept reverse order
2	60	B1	cao	
3	5	B1	cao	
4	8000	B1	cao	
5 (a)	22	B1	cao	
(b)	8	B1	cao	
(c)	$7 \times (2 + 3) = 35$	B1	for correct placement of brackets	Allow alternative correct statements, eg $[7 \times (2 + 3)] = 35$

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	3	B1	cao	
2	73	B1	cao	
3	80	B1	cao	
4	23 or 29	B1	for 23 or 29	Do not award if any other numbers are included, but award if both 23 and 29 are shown.
5	11	B1	cao	
6	3000	P1 P1 P1 A1	for a correct step for travel or/and spending money eg 4 × 150 (=600) or 4 × 250 (=1000) or 150 + 250 (=400) for an appropriate step with the hotel price eg 7× 50 (=350) or 4 × 50 (=200) for combining at least two "costs" for 4 people for 7 nights eg 4 × 150 + 4 × 250 (=1600) or 4 × 150 + 7 × 4 × 50 (=2000) cao	Can be embedded eg 4×7×150 Can be 4×7×50 Must be correct process for two costs eg not 4 × 150 ×7 but may be 2 correct costs and one incorrect

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	$\frac{31}{100}$ oe	B1	for $\frac{31}{100}$ or any equivalent fraction	Ignore any attempt at simplification of $\frac{31}{100}$
2	300	B1	cao	
3	0.12, 0.21, 1.02, 1.20	B1	accept 1.20, 1.02, 0.21, 0.12	
4 (a)	$4m$	B1	cao	
(b)	$3p$	B1	cao	
5	7cm by 4cm rectangle drawn	M1 A1	for a rectangle drawn with one correct dimension **or** 35 ÷ 5 (=7) and 20 ÷ 5 (=4) for a fully correct 7cm by 4cm rectangle drawn	Correct calculations/measurements seen the method mark can be awarded even if the drawing is incorrect or not present Accept any orientation of a correct rectangle
6 (a)	25	B1	cao	
(b)	24	B1	cao	
7	780	P1 P1 A1	for 2500 – 940 (= 1560) **or** 2500 ÷ 2 (=1250) and 940 ÷ 2 (=470) for "1560" ÷ 2 **or** "1250" – "470" cao	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	400	B1	cao	
2	$4e$	B1	for $4e$ oe	e^4 gets no marks, where the 4 is clearly a power
3	Reflection shown	B1	cao	
4	6000	B1	for 6000 oe	Accept six (6) thousand(s) or just thousand(s)
5	45%, $\frac{1}{2}$, 0.55	B1	Accept equivalent notation eg $\frac{45}{100}$, $\frac{50}{100}$, $\frac{55}{100}$ or 45%, 50%, 55% or 0.45, 0.5, 0.55 or a combination of notation	Do NOT accept reverse order
6	8	B1	cao	
7	7	P1 P1 A1	for $20 - 6$ (= 14) **or** $20 \div 2$ (=10) **and** $6 \div 2$ (=3) for "14" ÷ 2 (= 7) **or** "10" − "3" (= 7) cao	May be seen as a build-up method or by a method of repeated subtraction, listing multiples of 2

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	−7, −2, −1, 0, 7	B1	cao	Accept reverse order
2	$\frac{37}{100}$	B1	oe fraction	
3	13	B1	cao	
4	530	B1	cao	
5	3476	B1	cao	
6 (a)	4.5	B1	accept answer in the range 4.3 to 4.7	
(b)	110	B1	accept answers in the range 108 to 112	
7	49.01	P1	for process to work with the number of miles, eg 12845 – 12468 (= 377) **or** 12845 × 13 (= 166985) **or** 12468 × 13 (= 162084)	
		P1	for process to find the cost, eg "377" × 13 (= 4901) **or** "166985" – "162084" (= 4901)	
		B1	(indep) for converting from pence to pounds, eg "4901" ÷ 100 **or** 13 ÷ 100 **or** miles divided by 100 eg "377" ÷ 100 (= 3.77) or 12845 ÷ 100 (= 128.45) **and** 12468 ÷ 100 (= 124.68)	This mark can be awarded at any stage in the process
		A1	49 or 49.01	
8	315	M1	for 45 × 7	
		A1	cao	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	3107	B1	cao	
2	30	B1	cao	
3	$4m$	B1		
4	4	B1	cao	
5	–5, –2, 3, 7, 9	B1	cao	Accept in reverse order
6 (a)	14	B1	cao	
(b)	18	B1	cao	
7 (a)	evens	C1	oe	
(b)	certain	C1	oe	
(c)	0.6	B1	oe	Accept 60% or an equivalent fraction eg $\frac{6}{10}$
8 (a)	Square	C1	for statement of shape	Accept unambiguous misspellings.
(b)	Cuboid	C1	for statement of solid	Accept unambiguous misspellings. Accept square based prism

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	18 000	B1	cao	
2	30	B1	cao	
3	reflex	B1	cao	
4	0.03, 0.1, 0.16, 0.2, 0.21	B1	for 0.03, 0.1, 0.16, 0.2, 0.21	accept 0.21, 0.2, 0.16, 0.1, 0.03
5	8	B1		Accept ± 8 or −8
6	1.5(0)	P1 P1 P1 A1	for 4 × 1.30 (= 5.2(0)) **or** 10 – 1.80 (= 8.2(0)) for 10 – 1.80 – "5.20" (= 3) oe for "3" ÷ 2 cao SCB2 for answer (£)2.4(0)	Working could be in pence Condone answer £1.5(0)p

Paper: 1MA1/1F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1		0.25	B1	cao	
2		20	B1	cao	
3		150	B1	cao	
4		27	B1	cao	
5		645	B1	cao	
6		20	P1 P1 A1 	for $30 + 45 \times 10 (= 480)$ or $50 \times 10 - 45 \times 10 (= 50)$ or $50 \times 10 - 30 (= 470)$ for 50×10 – "480" cao SCB1 for answer 250 or -250 if P0 scored.	 P1P1 for $500 - 450 - 30$ may be seen in stages
7	(a)	9.5	B1	for answer in the range 9.3 to 9.7	Accept answer on the diagram
	(b)	acute	C1	for acute	Accept interior angle Do not accept co-interior angle
	(c)	32	B1	for answer in the range 30 to 34	Accept answer on the diagram
8	(a)	(3, 1)	B1	cao	
	(b)	*B* at (3, – 4)	B1	cao	Accept a cross without label as long as unambiguous. Accept letter B or dot in place of cross.
	(c)	(0, 2)	B1	cao	

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
1	$\frac{17}{100}$	B1	for $\frac{17}{100}$ or any other equivalent fraction	
2	2 hours 20 minutes	B1	cao	
3	0.05, 0.5, 0.507, 0.57	B1	for 0.05, 0.5, 0.507, 0.57	Accept reverse order
4	hexagon	B1	cao	
5	3	B1	cao	
6	10	P1 P1 A1	for process to find greatest number of bracelets for one colour, eg 52 ÷ 5 (= 10(.4)) **or** 80 ÷ 7 (= 11(.4..)) for process to find greatest number of bracelets for both colours, eg 52 ÷ 5 (= 10(.4)) **and** 80 ÷ 7 (= 11(.4..)) cao	May be seen as a repeated addition or subtraction but must be complete for one colour, eg 50 or 70 May be implied by eg 50:70 or 50:77 Must see working with both colours for this mark.
7 (a)	12	M1 A1	for method to find mean, eg (14 + 10 + 10 + 13 + 15 + 9 + 15 + 10) ÷ 8 **or** 96 ÷ 8 cao	Allow one error or omission but must divide by 8
(b)	6	M1 A1	for 15 – 9 **or** 9 – 15 **or** 9 to 15 cao	Condone eg 9, 15 but not 9 + 15
(c)	cross at ¼	B1	for cross (or mark) at ¼	Accept any mark near to ¼ if the intention is clear; do not accept if additional marks are shown

Paper: 1MA1/2F Question	Answer	Mark	Mark scheme	Additional guidance
1	21	B1	cao	
2	$6n$	B1		Allow $n6$ but not $6\times n$ or $6.n$
3	70	B1	cao	
4	–6, –3, 2, 5, 7	B1	for –6, –3, 2, 5, 7	Accept in correct reverse order
5 (i)	metres	C1	for metres or kilometres	Allow any unambiguous abbreviation
(ii)	grams	C1	for grams or milligrams or newtons	Allow any unambiguous abbreviation
6	21	P1 P1 A1	for a beginning process, eg 76 – 13 (= 63) **or** $3x + 13 = 76$ oe for "63" ÷ 3 **or** (76 – 13) ÷ 3 (= x) cao	May be implied by $a + b + c = 63$ **or** $a + b + c + 13 = 76$ a, b and c may be seen in a list 13+21+21+21=76, 76, 63 or 13 on answer line scores P1P1A0 21, 21, 21 (13) on the answer line will score P1P1A1
7	6	M1 A1	for 330 ÷ 55 cao	Build up methods are allowed Condone one error in build up method 55 × 6 = 330, 330 or 55 on answer line scores M1A0 ignore use of £ eg £6
8 (a)	6	B1	cao	

Paper: 1MA1/1F					
Question		Working	Answer	Mark	Notes
18	(a)		6 to 8	M1	evidence of recall of area formula with correct radius e.g. $\pi \times 10^2$
				M1	calculation to find number of boxes, (area) ÷ (coverage figure)
				M1	(indep) evidence of estimation, eg π in range 3 to 3.2, or coverage figure of 40, 42, 45, 48 or 50
				A1	(dep on M3) answer in the range 6 to 8
	(b)		underestimate	C1	e.g. (ft from (a)) underestimate: true area greater so could need more boxes. Must relate to estimation, not rounding of answer.
19	(a)		9.5	M1	expands brackets or divides by 4 as a first step
				A1	oe
	(b)		−2, −1, 0, 1, 2	B2	cao
				(B1)	(for the numbers −2, −1, 0, 1 (accept with −3 and/or 2 only), or 4 correct with no incorrect)
20			1545	M1	shows a method to find 3% eg 1500 × 0.03 (=45)
				A1	cao

Paper 1MA1: 1F						
Question	**Working**	**Answer**	**Mark**	**Notes**		
28		Shows reasoning to reach $y=3$	M1 M1 M1 A1	forms equation eg $2x + 6 = 5x - 9$ isolates x and number terms $3x = 15$ substitutes "5" into side length eg $2 \times 5 + 6$ (=16) 48÷16=3 **or** 16×3=48	48÷3 (=16) forms equation $2x+6=$"16" **or** $5x - 9=$ "16" isolates x and number terms $2x=$ "10" **or** $5x =$ "25" shows $x=5$ for both solutions	$3(2x + 6) = 48$ **or** $3(5x - 9) = 48$, condone missing bracket Isolates x and number terms $6x =$ "30" **or** $15x =$ "75" forms the second equation $x=5$ from 2 different equations.
29		Comment	B1	for correct mathematical comment eg line segments not a curve **or** should draw freehand **or** should not use a ruler, **or** should be a curve NB Do not accept statements about scale or plotting accuracy.		
30		4	M1 A1	for a complete method eg $2.80 \times 100 \div (100-30)$ oe **or** $2.80 \div 0.7$ oe **or** for build up method but must show all intermediate steps unless all figures are correct eg $2.8 \div 7 = 0.4$ and "0.40" × 10 (=4) cao		

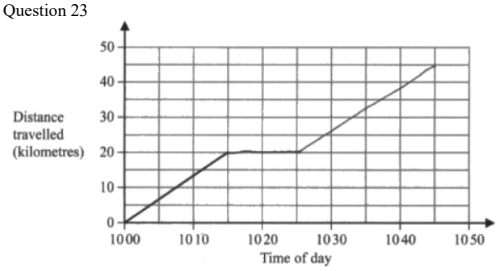
Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
15	24	M1	for method to find 15% of 160, eg 160 $\times \frac{15}{100}$ oe (= 24) **or** 10% = 160 ÷ 10 (= 16) plus 5% = "16" ÷ 2 (= 8) (= 24)	When using partitioning methods, the method to find individual %s must be clear including the need to show an intention to sum eg. 10% = 16 + 5%=8
		A1	cao SC B1 for answer of 136 or 184 if M0 scored	
16 (a)	14	M1	for 4 × 5 and 3 × −2, the substitution may be seen in two separate calculations, eg 4 × 5 (= 20) and 3 × −2 (= −6)	
		A1	cao	
(b)	$4e^2 + 8e$	B2	for $4e^2 + 8e$	
		(B1	for $4e^2$ or $8e$)	Note: $4e^2 + 8e = 12e^3$ for example gets B1 only
(c)	11	M1	for a correct first step eg 3 × m – 3 × 4 = 21 oe **or** m – 4 = 21 ÷ 3 (= 7) oe	Showing ÷3 by each side of equation is sufficient
		A1	cao	
17	1 : 3	M1	for $\frac{1}{4} : \frac{3}{4}$ oe **OR** for any correct un-simplified ratio, eg 25 : 75	
		A1	cao SC: B1 for an answer of 3 : 1 or 1 : $\frac{1}{3}$ if M0 scored	Ignore 'units' such as 1 nuts : 3 no nuts 1 : 3n gets M1A0

Paper: 1MA1/2F					
Question		Answer	Mark	Mark scheme	Additional guidance
18	(a)	explanation	C1	explanation eg should be 1.03, this is 30% (not 3%) **Acceptable examples** Because 1.3 is 130% He is increasing it by 30% 1.3 means 1.30, not 1.03 He needs to put a 0 in front of the 3 1.3 is the wrong decimal He should multiply by 0.03 3% is 0.03, (not 1.3) His answer should be 154.5 He is meant to increase it by 4.5, not by 45 **Not acceptable examples** Because he is increasing by 130%, not 3% He needs to find 1% and then times it by 3	
	(b)	(150 ×) 0.97 = 145.5	B1	for 0.97 (or $\frac{97}{100}$ or 97%) and 145.5	
19	(a)	8	M1	for a correct first step eg $3x - 12 = 12$ **or** $3(x - 4) \div 3 = 12 \div 3$	
			A1	cao	
	(b)	$3b(3 - b)$	M1	for $3(3b - b^2)$ **or** $b(9 - 3b)$ **or** $3b$(two term linear expression)	
			A1	cao	

Paper: 1MA1/2F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
16		243	M1 A1	for 1.8 ÷ 100 × 4500 oe (= 81) **or** for a complete method eg 4500 ×1.8 × 3 ÷ 100 oe **or** for 4743 **or** 4257 cao	Award M1 for 4500×1.018^n
17		26	M1 M1 A1 C1	for *ADB* = 64 **or** *ABD* = 52 for complete method, eg (180 – 64 – 64) ÷ 2 oe for 26 (dep on first M1) for two correct reasons appropriate to their method from base angles of isosceles triangle are equal sum of angles in a triangle = 180 sum of angles on a straight line = 180 the exterior angle of a triangle is equal to the sum of the interior opposite angles	May be shown on the diagram Correct method can be implied from angles on the diagram if no ambiguity or contradiction. Underlined words need to be shown; reasons need to be linked to their method; any reasons not linked, do not credit. There should be no incorrect reasons given.
18	(a)	$T = 4n - 5$	M1 M1 A1	for $2n$ **or** $n - 5$ **or** T = a linear expression in n for $n + 2n + n - 5$ oe **OR** for T = an expression in n with 2 of 3 ages correct eg $T = n + n^2 + n - 5$ for $T = 4n - 5$ oe eg $T = n + 2n + n - 5$	Allow variables other than n Each age must be an expression in n
	(b)	$5m - 3m = 2m$	B1	for $5m - 3m = 2m$ indicated	

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
27	−2, 9	M1	for $(x \pm 2)(x \pm 9)$ **or** for $(x + a)(x + b)$ where either $ab = -18$ or $a + b = -7$ **or** one correct answer	Sight of one correct answer as the final answer can gain one mark with or without working
		M1	for $(x + 2)(x - 9)$	
		A1	cao	
28	320 000	M1	for a complete method eg $272\,000 \div (\frac{100-15}{100})$	
		A1	cao	

Question 23



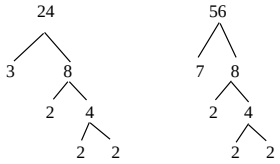
Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
28	Complete chain of reasoning	M1	for (area of trapezium $TQRS$ =) $0.5 \times 4x \times (2x + 3x)$ or for (area of rectangle $TUVS$ =) $4x \times (3x + 5)$ $(= 12x^2 + 20x)$	Evidence for the award of marks may be seen on the diagram
		M1	for (area of trapezium $QUV\,R$ =) $4x(3x + 5) – 0.5 \times 4x \times (2x + 3x)$	Alternative methods may be seen.
		C1	for correct algebraic processing and simplification to the given form	
		M1	**Alternative 1** for (QU =) $3x + 5 – 2x$ $(= x + 5)$	
		M1	for (area of trapezium $QUVR$ =) $0.5 \times 4x \times$ (("$x + 5$") + 5) or $0.5 \times 4x \times (x + 10)$	
		C1	for correct algebraic processing and simplification to the given form	
		M1	**Alternative 2** for (area of triangle =) $0.5 \times (3x – 2x) \times 4x$ or for (area of rectangle =) $4x \times 5$	Accept x for $(3x – 2x)$
		M1	for (area of trapezium $QUVR$ =) "$0.5 \times (3x – 2x) \times 4x$" + "$4x \times 5$"	
		C1	for correct algebraic processing and simplification to the given form	
29	108	M1	for $30 \times 60 \times 60$ (108000 metres per hour) **or** $30 \div 1000$ (= 0.03 kilometres per second) **or** $60 \times 60 \div 1000$ (=3.6 scale factor)	
		A1	cao	
30	16 000	M1	for $13600 \div 0.85$ (= 16000) oe	
		A1	cao	

Notes for question 21.

Multiples of 24: 24, 48, 72, 96, 120, 144, 168, 192…

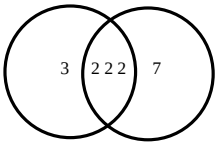
Multiples of 56: 56, 112, 168, 224…

Factor trees:



Condone display of 1 as a factor

Venn Diagram



Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
26	152000	M1 A1	for a complete method eg 165680 ÷ 109 × 100 or 165680 ÷ 1.09 oe cao	

Paper: 1MA1/1F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
25	(a)	Description	C1	for a valid description of the relationship **Acceptable examples** As age increases, weight increases The older you are the greater the weight Positive correlation **Not acceptable examples** Positive (relationship) age and weight are in proportion strong correlation or correlation is increasing as the babies get older the heavier they get, negative correlation they are directly proportional, weight goes up as age goes up	Accept positive correlation Ignore any comment about strength
	(b)	2.5 to 4.5	B2 (B1	for an answer in the range 2.5 to 4.5 for a suitable line of best fit drawn **or** for a point on the grid at (x, 5.8) where x lies between 2.5 and 4.5 **or** a horizontal line drawn from 5.8 across to (x, 5.8) where x is in the range 2.5 to 4.5)	
26		1200	M1 A1	for a fully correct method, eg 240 ÷ 0.2 or 240 × 5 oe cao SC B1 for an answer of 960 or 1440 if M0 scored	
27		3	P1 P1 A1	for process to find area of base, eg 1200 ÷ 40 (= 30) for process to find pressure, eg 90 ÷ "30" cao	
28		$x = 6$ $y = -2$	B1	cao	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
27	400	M1 A1	for 280 ÷ 0.7 oe cao	
28	$x \leq -4$	M1	for a correct first step working with an equation or inequality eg $x + 11 - 11 \leq 5 - \frac{1}{2}x - 11$ **or** $x + 11 + \frac{1}{2}x \leq 5 - \frac{1}{2}x + \frac{1}{2}x$ **or** $2 \times x + 2 \times 11 \leq 2 \times 5 - 2 \times \frac{1}{2}x$	Can work with an equation or incorrect inequality symbol for both M marks Allow for subtracting 5 from both sides or subtracting x from both sides. For M marks step must be carried out not just intention shown. For example, if you see $x + 11 \quad \leq \quad 5 - \frac{1}{2}x$ $-11 \qquad\qquad -11$ Award M1 for: $x \leq k - \frac{1}{2}x$ with $k \neq 5, k \neq 16$ or indicating $+\frac{1}{2}x$ reaching $kx + 11 \quad \leq \quad 5$ with $k \neq \frac{1}{2}, k \neq 1$ or indicating multiplying by 2 obtaining an equation or inequality with three of four terms correct and no term unchanged.
		M1 A1	for a full method to solve the inequality **or** for a critical value of -4 for $x \leq -4$ oe as final answer	Award 2 marks for answer of x? -4 where ? is an = or any incorrect inequality symbol, or for answer shown as just -4

Paper: 1MA1/2F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
13	(a)	$6cd$	B1	for $6cd$ or $6dc$ or $cd6$ oe	Inclusion of × scores B0, eg $6 \times cd$ oe
	(b)	-5	M1	for $3 + 2 \times -4$ (= $3 - 8$)	
			A1	cao	
14	(a)	12	M1	for method to find speed, eg $36 \div 3$ or $\frac{36}{3}$	Condone $36 \div (3 \times 60)$
			A1	cao	
	(b)	Yes with supporting figures	P1	for process to find time, eg $36 \div 16$ (= 2.25) or $36 \div 16 \times 60$ (= 135)	
			P1	for full process to find figures to compare, eg 3 + "2.25" (= 5.25) or 3 hours + "2 hours 15 mins" (= 5 hours 15 mins) **or** 5 hours 20 mins – "2 hours 15 mins" (= 3 hours 5 mins) **or** 5 hrs 20 mins – 3 hours (= 2 hrs 20 mins) **and** $36 \div 16$ (= 2.25)	
			C1	Yes with correct supporting figures, eg 5.25(hours) (and 5.33.. hours) or 5 hours 15 mins **or** 3 hours 5 mins **or** 2 hrs 20 mins **and** 2 hrs 15 mins oe	If units are provided they must be correct for their figures for the C mark
15		525	M1	for method to find the interest after one year, eg $3500 \times 2.5 \div 100$ (= 87.5) oe **or** 0.025×6 (= 0.15) oe **or** for a complete method, eg $3500 \times 2.5 \times 6 \div 100$ oe **or** for 4025 **or** 2975	May be implied by, eg 3587.5(0) Award M1 for 3500×1.025^n
			A1	cao	

Paper: 1MA1/2F				
Question	**Working**	**Answer**	**Mark**	**Notes**
15		988	P1	for a process to find the amount of oil bought in November, eg 750 ÷ 0.5 (=1500) or 75000 ÷ 50 (=1500)
			P1	for a process to find the amount of oil ordered in February, eg "1500" +1000 − 600 (= 1900)
			P1	(indep) for a process to calculate a 4% increase of their amount of oil, eg or "1900" × 1.04 (=1976) or increase in price eg 1.04 × 50 (=52 or 0.52) or 1.04 × 750 (=780)
			P1	for a complete process to find the total cost of the calculated amount of oil eg "52" × "1900" or "780" × "1900" ÷ "1500"
			A1	Cao
16		$1\frac{1}{2}$	M1	for correct expansion of the bracket or dividing all terms by 3 as a first step eg $3x - 3$ or $(5x - 6)/3 = 3(x - 1)/3$
			M1	for isolating terms in x on one side of an equation eg $5x - 6 - 3x = -3$ or both constants on one side of an equation, eg $5x = 3x - 3 + 6$, ft $5x - 6 = 3x - 1$
			A1	for $1\frac{1}{2}$ oe
17	£6 − £5.64 = 36p or 50p – 47p = 3p	6.4	P1	for a strategy to compare the same number of bottles e.g. £5.64 ÷ 12 (= 47 or 0.47) or 12 × 50p (= 6 or 600) or 36 or 0.36 or 3 or 0.03
			P1	for start of process to find percentage profit e.g. $\frac{"36"}{564}$ or $\frac{"3"}{"47"}$ or $\frac{"6"}{5.64}$ or $\frac{50}{"47"}$ oe with consistent units
	6.3829787…%		A1	for answer in the range 6.3 to 6.4

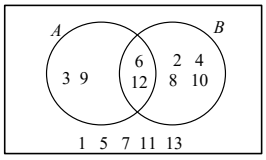
Paper: 1MA1/3F				
Question	**Working**	**Answer**	**Mark**	**Notes**
11		Offer 1	P1	for a process to find the cost of a number of lessons in Offer 1, eg. 24 × (12 – 1) (= 264) or for a process to find 5% (or 95%) of an appropriate amount, eg. 24 × 0.05 (= 1.20) or 24 × 0.95 (= 22.80) in Offer 2
		(supported)	P1	for a complete process leading to values to be used for comparison, eg. 24 × (12 – 1) (= 264) and 24 × 0.95 × 12 (= 273.60)
			C1	Offer 1 and correct values, eg. (£)264 and (£)273.6(0) used for comparison
12	Complete methods 3.60 ÷ 2.5 × 3.5 or 3.60 ÷ 5 × 7 or 3.5 ÷ (2.5 ÷ 3.6) or $\frac{3.5}{2.5} \times 3.6$ or $3.6 \div \frac{2.5}{3.5}$	5.04	M1 A1	for a correct first step to find the cost of a unit of weight (eg. 1 kg or 0.5 kg) eg 3.60 ÷ 2.5 (= 1.44) or 3.60 ÷ 5 (= 0.72) or a complete alternative method for 5.04 (accept £5.04p)
13 (a)		(–2) **–1.5** **–1** **–0.5** (0) **0.5**	B2 [B1	for a fully correct table for 2 or 3 correct entries]
(b)		Correct line	M1 A1	for correctly plotting at least 5 of their points (provided B1 scored in part (a)) or for a straight line with gradient 0.5 or for a straight line through (0,–1) with a positive gradient for a correct line between $x = -2$ and $x = 3$
(c)		2.6	B1	for answer in the range 2.5 to 2.7 or ft a single straight line with positive gradient

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
9 (b)	terms given	B1	states two terms eg 7,11 **or** 8,16 **or** 5, 7	
	explanation	C1	explanation eg add one more each time, doubling **Acceptable examples** Add 3 and add 4 The difference goes up by one each time It doubles +1, +2, +1, +2 or indicates +1, +2 repeats itself **Not acceptable examples** It goes up by 1 each time It doubles so $2n$ +1, +2, +3, +4 so $2n + 1$	May be indicated on the sequence with no contradictory statement made
10 (a)	38	B1	cao	
(b)	6	M1	starts process to find input using inverse operations eg $28 + 2$ **or** sight of $+2 \div 5$ **or** by forming an equation eg $x \times 5 - 2 = 28$	$+2 \div 5$ could be seen in a flow diagram
		A1	cao	
11	4	M1	for $\frac{30}{100} \times 80$ (=24) oe or for 104	
		M1	(dep) for 28 – "24" or 108 – 104	Numbers in subtraction may be reversed
		A1	for 4 or –4	

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
15	2.5	M1	for $(R=)\frac{100I}{PT}$ **or** 600×5 (= 3000) **or** 75 × 100 (= 7500) **or** 75 ÷ 5 (= 15) **or** 75 ÷ 600 (= 0.125)	
		M1	for $\frac{75\times100}{600\times5}$ oe **OR** $\frac{"15"}{600}$ (= 0.025) **or** "0.125" ÷ 5 (= 0.025) **or** 1.025	Calculations may be done in stages. May work in decimals or in percentages
		A1	cao	
16	Reflection in *x*-axis	B1	for reflection	Award no marks if more than one transformation is given
		B1	for *x*-axis **or** *y* = 0	
17	2 bags of stone	P2	for a complete process to work out how many bags of each material is required eg 180 ÷ 25 (= 7.2 or 8), 375 ÷ 22.5 (= 16.6.. or 17), 1080 ÷ 50 (= 21.6 or 22) **or** a complete process to work out the total weight of each element that he has eg 25 × 10 (= 250), 20 × 22.5 (= 450), 50 × 20 (= 1000)	The correct figures do not need to be seen to award the process marks
		(P1	for a correct start to the process, eg for at least one correct calculation	
		C1	correct conclusion eg 2 bags of stone, with no incorrect working	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
8	Yes with correct figures	P1 P1 P1 C1	begins to work with proportion eg 20 ÷ 2 (=10) **or** 20 ÷ 5 (=4) **or** 2.38 ÷ 2(=1.19) **or** 5.60 ÷ 5 (=1.12) full process to find the cost of 20 pens **or** 20 folders eg. 20 ÷ 2 × 2.38 (=23.8) **or** 20 ÷ 5 × 5.60 (=22.4) **or** 2.38 ÷ 2 × 20 (=23.8) **or** 5.60 ÷ 5 × 20 (=22.4) full process to find total price **or** amount remaining eg "23.8" + "22.4" (=46.2) **or** 50 − "23.8" − "22.4" (=3.8) Yes with correct figures eg 46.2 **or** 3.8 (left)	Throughout monetary units not required; trailing zeros not needed. Can work in pence throughout 'Yes' might be implied from working eg 46.2<50 or a statement that 3.8 is left, but 46.2 alone must also show an answer such as 'Yes' (may be written elsewhere). Working leading to 46.2 must be shown for this mark.
9 (a)	Trapezium	B1	cao	
(b)	C and D	B1	cao	Accept in either order.
10	Reflection drawn	C1	for accurate reflection drawn	Can be hand drawn. Need not be shaded.
11	40	P1 P1 A1	for 100 − 30 (=70) **or** 1 − 0.3 (=0.7) **or** $1-\frac{3}{10}$ $(=\frac{7}{10})$ **or** 28 ÷ 7 × 3 (=12) for a complete process eg 28 ÷ ("70" ÷ 10) × 10 oe **or** 28 + "12" cao	

Paper: 1MA1/3F					
Question		Answer	Mark	Mark scheme	Additional guidance
20	(a)	7360	B1	cao	
	(b)	0.1077981356	B2	for 0.1077(981…)	Answer must be given to at least 4 decimal places rounded or truncated
			(B1	for 5.74(45626…) **or** 53.29 **or** 0.11 **or** 0.107 **or** 0.108)	Accept a clear indication of the decimal point. Check first four decimal places only
21		260 to 260.5	M1	for 883 – 245 (=638) **or** 883 ÷ 245 (=3.60..) **or** 883 ÷ 245 × 100 (=360(.408..)) oe	
			M1	for a complete method to find the percentage increase eg "638" ÷ 245 × 100 (=260(.408..)) **or** 883 ÷ 245 × 100 − 100 (=260(.408..)) oe	
			A1	Accept answers in the range 260 to 260.5	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
19	17	M1 A1	for correctly expanding the bracket, as part of an equation to get $4x - 24 = 44$ **or** for dividing both sides of the equation by 4 as a first step, eg $\frac{4(x-6)}{4} = \frac{44}{4}$ oe cao	Award M1 for an embedded value of 17 if not identified as the answer
20	Venn Diagram	B1 M1 M1 A1	for labelling diagram, accept "multiples of 3" and "even numbers" for labels for correct numbers in at least one region for correct numbers in at least two regions for all regions correct	Ignore all entries except the region you are marking for each method mark 
21	8	M1 M1 A1	for 158220 – 146500 (=11720) **or** 158220 ÷ 146500 (=1.08) for complete method, eg (158220 – 146500) ÷ 146500×100 oe **or** 1.08×100 – 100 cao	0.08 as an answer implies M1

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
24	20	P1	for process to find SP of 24 chocolate bars, eg. 0.50 × 24 (= 12) oe **or** for process to find the overall profit eg (24 × 0.5) – 10 (=2) **or** for process to find CP of one chocolate bar, eg. 1000 ÷ 24 (= 41.66…) oe	Working can be carried out in either pounds or pence.
		P1	(dep) for start to a process to find percentage profit, eg. using $\frac{"12"-10}{10}$ **or** $\frac{"12"}{10}$ **or** $\frac{50-"41.66.."}{"41.66..."}$ oe with consistent units	
		A1	cao	
25	85 with working and reasons	M1	for correct use of corresponding angles eg *AEB* = 63 **or** co-interior angles eg *BCD* = 180 – 148 (= 32) or *DEB* = 180 – 63 (= 117)	Angles must be clearly labelled on the diagram or otherwise identified. Full solution must be seen. Correct method can be implied from angles on the diagram if no ambiguity or contradiction.
		M1	(dep) for a complete method to find angle *EAB* eg. 180 – "63" – (180 – 148) **or** 148 – "63" **or** "117" – (180 – 148)	
		A1	for *EAB* = 85 (identified)	
		C2	(dep on M2) all working correct with all appropriate reasons stated. Corresponding angles are equal Allied angles / Co-interior angles add up to 180 Angles on a straight line add up to 180 Angles in a triangle add up to 180 The exterior angle of a triangle is equal to the sum of the interior opposite angles.	When reasons are given the key words underlined must be present. Reasons need to be linked to their method; any reasons not linked, do not credit. There should be no incorrect reasons given.
		(C1	for **one** reason relating to parallel lines clearly used and stated **or** for any **two** reasons clearly stated for their fully correct method)	

Paper: 1MA1/1F

Question	Answer	Mark	Mark scheme	Additional guidance
18	Line Drawn	B3	for a correct line drawn between $x = -2$ and $x = 3$	Accept freehand line drawn
		(B2	for a correct straight-line segment through at least 3 of $(-2, -6)$, $(-1, -4)$, $(0, -2)$, $(1, 0)$, $(2, 2)$, $(3, 4)$ **or** for all of the above points plotted but not joined **or** for a single line drawn with a positive gradient through $(0, -2)$ **and** clear intention to use a gradient of 2, eg a line through $(0, -2)$ and $(0.5, 0)$	Ignore any incorrect points Table of values x: -2, -1, 0, 1, 2, 3 y: -6, -4, -2, 0, 2, 4
		(B1	for at least 2 correct points stated or plotted **or** a single line drawn with positive gradient through $(0, -2)$ **or** a single line with gradient 2)	Ignore any incorrect points Coordinates may be in a table or working Do not accept $y = -2$ drawn
19	30	M1	for $80 - 56$ (= 24) **or** for $\frac{56}{80} \times 100$ (=70) **or** (loss of) $10\% = 80 \div 10$ (= 8)	
		M1	for a complete method, eg "24" ÷ 80 × 100 **or** 100 – "70" **or** (80 – 56) ÷ "8" × 10	
		A1	cao	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
17 (a)	Frequency diagram See end of m/s	C3 (C2 (C1	for a fully correct frequency diagram for at least 5 correct values in the frequency diagram) for at least 3 correct values in the frequency diagram)	If probabilities used instead of frequencies then maximum of C2 can be awarded
(b)	$\frac{12}{72}$	M1 A1	for $\frac{a}{72}$ where $0 < a < 72$ and a is an integer **or** $\frac{12}{b}$ where $b > 12$ and b is an integer **or** 12 : 72 **or** ft their values for 72 and/or 12 from (a) for $\frac{12}{72}$ oe or ft (a)	Accept equivalent decimal or percentage forms of probability Ignore errors in cancelling of their $\frac{12}{72}$
18	100	M1 A1	M1 for a correct first step, eg 25÷10 (= 2.5) **or** 40 ÷ 10 (= 4) **or** 20 (scones) = 40 × 2 (= 80g) **or** 5 (scones) = 40 ÷ 2 (= 20g) cao	Multiplier may be seen as evidence of this mark
19	288	M1 M1 A1	for a method to find 20% eg 240 × 20 ÷ 100 (= 48) **or** shows a multiplier of 1.2 oe **or** 120% for a complete method eg 240 + "48" **or** 240 × 1.2 oe **or** 240 × 120 ÷ 100 cao	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
19	2.5	P1	for 450 ÷ 6 (= 75) **or** statement $450 = \frac{3000 \times 6 \times y}{100}$ oe **or** $\frac{450}{3000}$ (= 0.15) or $\frac{450 \times 100}{3000}$ (= 15)	
		P1	for "75" ÷ 3000 (= 0.025) **or** (y =) $\frac{450 \times 100}{3000 \times 6}$ oe **or** $\frac{"0.15"}{6}$ (= 0.025) or $\frac{"15"}{6}$ **or** $\frac{3000 + "75"}{3000}$ (= 1.025)	
		A1	cao	
20 (a)	m^6	B1	cao	
(b)	x^{13}	B1	cao	
(c)	$4p^3 + 12p^2$	B2	for $4p^3 + 12p^2$	
		(B1	for expanding the bracket to get $p^3 + 3p^2$ **or** $4p^3$ **or** $12p^2$)	

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
14	6.95 **or** (2kg flour =) 2.70 **and** (5 kg sugar =) 4.25	P1 P1 P1 A1	for process to find the cost of 1kg of flour, eg 4.05 ÷ 3 (= 1.35) for process to work with cost of sugar, eg 11.85 – 5 × "1.35" (= 5.10) for process to find cost for 5kg of sugar, eg "5.10" ÷ 6 × 5(= 4.25) for 6.95 **or** (2kg flour =) 2.70 **and** (5 kg sugar =) 4.25	May be implied by (2 kg =) 2.70 May be implied by (1 kg =) 0.85 oe
15	60.48	P1 P1 A1	for a beginning process, eg 72 ÷ 100 × 120 (= 86.4) **OR** 72 ÷ 100 × 30 ÷ 100 (= 0.216) for process to use both percentages, eg [86.4] – ([86.4] × 30 ÷ 100) **or** [86.4] × ((100 – 30) ÷ 100) **or** [86.4] × 30 ÷ 100 (= 25.92) **OR** 72 ÷ 100 × ((100 – 30) ÷ 100) (= 0.504) **OR** 120 × "0.216" (= 25.92) cao	 [86.4] must be a value less than 120
16	24	P1 P1 P1 A1	for finding the total for adults, eg 160 – 85 (= 75) **or** for finding adult romance, eg 33 – 19 (= 14) **or** for finding children adventure, eg 76 – 34 (= 42) for finding adult horror, eg "75" – 34 – "14" – 7 (= 20) for a process to find the number of children who chose horror, eg 85 – 19 – "42" – "20" (= 4) **or** for a complete process to find total horror, eg (85 – 19 – "42" – "20") + "20" **or** 160 – 33 – 76 – ("20" + 7) cao	<table><tr><td></td><td>R</td><td>A</td><td>H</td><td>T</td><td>Tot</td></tr><tr><td>C</td><td>19</td><td>42</td><td>4</td><td>20</td><td>85</td></tr><tr><td>A</td><td>14</td><td>34</td><td>20</td><td>7</td><td>75</td></tr><tr><td>Tot</td><td>33</td><td>76</td><td>24</td><td>27</td><td>160</td></tr></table> A correct answer unsupported will score 1 mark only

Paper: 1MA1/2F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
16	(a)	170	B1	for answer in the range 167 to 173	
	(b)	35	M1	for correctly using readings from the graph as a factor of 1000 from the grams scale, eg 200 × 5 or 100 × 10 or 20 × 50 or 250 × 4 **or** for method to use multiples of grams and corresponding ounces readings, eg 1000 ÷ "answer to (a)" × 6 **or** 1000 ÷ grams × ounces oe	May be seen as a build-up method using multiple readings that can be read from the graph but must total 1000 grams (ounces, grams) is a point on the line
			A1	for an answer in the range 34 to 36	
17		Region **R** shown	C1	for arc drawn, radius 4 cm, centre *A*	Allow free hand drawing
			C1	for perpendicular bisector of *CB* drawn	Allow free hand drawing
			C1	for fully correct region **R** shown (inside the arc from *A* and left of the bisector)	Ignore absence of "R" if region is unambiguously shown eg by shading
18		12	P1	for a beginning process, eg 1800 – (1800 × 0.56) oe or 1800 × (1 – 0.56) (= 792) or 1800 ÷ 100 × 56 ÷ 66 (= 15.272…) **or** 1800 ÷ 66 (=27.272…) **or** [44%] ÷ 66	[44%] is the value they clearly believe to be 44% of 1800
			P1	for a complete process, eg "792" ÷ 66 **or** "27.272…" × (1 – 0.56) oe **or** "27.272…" – "15.272…"	
			A1	cao	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
15	15% of 88 from correct figures	P1	for first step towards finding comparable figures, eg $\frac{15}{100}$ × 88 (= 13.2) oe **or** $\frac{20}{100}$ × 62 (= 12.4) oe **OR** 15 × 88 (= 1320) **or** 20 × 62 (= 1240)	
		P1	for process to find two comparable figures, eg $\frac{15}{100}$ × 88 (= 13.2) oe **and** $\frac{20}{100}$ × 62 (= 12.4) oe **OR** 15 × 88 (= 1320) **and** 20 × 62 (= 1240)	
		C1	15% of 88 from 13.2 oe **and** 12.4 oe **OR** 15% of 88 from 1320 **and** 1240	Must have correct figures. Ignore an incorrect difference after a correct decision from correct figures unless it contradicts.
16 (a)	m^4	B1	cao	
(b)	$5x + 2y$	M1	for $5x$ **or** $2y$ **or** a linear expression in the form $ax + by$ where $a, b > 0$	Do not award M1 for $-5x$ or $-2y$
		A1	for $5x + 2y$ oe	

Paper: 1MA1/2F Question	Answer	Mark	Mark scheme	Additional guidance
15	10	P1	for process to find total number of buttons 20 + 12 (= 32)	
		P1	for process to work with probability, eg "32" ÷ 4 (= 8) **or** "32" ÷ 4 × 3 (= 24)	May be implied by $\frac{"8"}{"32"}$
		P1	for process to find number of extra blue buttons required, eg "8" – 6 (= 2) **or** for process to find number of extra reds, eg 12 – ("8" – 6) **or** for process to find new total number of red buttons, eg (6 + 5 +12) – "8" (= 15) or "32" – "8" – 9 (= 15) or "24" – 9 (= 15)	May be implied by 8 : 9 : 15 or $\frac{"10"}{"32"}$
		A1	(dep P2) cao	Answer of 10 only scores no marks
16 (a)	70	M1	for a method to work with distance ÷ time, eg 35 ÷ (30 ÷ 60) or 35 ÷ 30 × 60 or 35 × (60 ÷ 30) **or** 35 ÷ 30 (= 1.16…) **or** [distance] ÷ [time]	May use other readings from graph for [distance] and [time] but must be accurate
		A1	answer in the range 69.6 to 70.2	
(b)	Graph drawn	C1	for a line from (30, 35) to (45, 35)	
17	1350	P1	for working with percentage, eg 85 ÷ 100 × 9000 (= 7650) **or** (100 – 85) ÷ 100 (= 0.15) oe	Allow $\frac{15}{100}$ and 15% but not 15 alone
		P1	for a complete process, eg 9000 – "7650" **or** (100 – 85) ÷ 100 × 9000	15% × 9000 is not acceptable unless correctly evaluated
		A1	cao	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
18	Yes (supported)	P1	for process to decrease 12 000 by 20%, eg 12 000 – 12 000 × 0.2 oe (= 9600) or 12 000 × 0.8 oe (= 9600)	Build up processes are allowed. Condone one error in the build-up process.
			or for process to find the value of 24 monthly payments of £450, eg 450 × 24 (= 10 800)	
			or for process to split the cost of the car over 24 months, eg 12 000 ÷ 24 (= 500)	
		P1	for process to find comparable values, eg "9600" ÷ 24 (= 400)	
			or eg 12 000 × 0.8 oe (= 9600) **and** 450 × 24 (= 10 800)	
			or 12 000 – "10 800" (= 1200)	Award P0 for 1200 coming from 12 000 × 0.1 oe
			or "9600" ÷ 450 (= 21…)	
			or "10 800" + 12 000 × 0.2 oe (= 13 200)	
			or eg "500" × 0.8 (= 400) oe	
		C1	for Yes **and** correct comparable value(s), eg Yes **and** 400 **or** Yes **and** 9600 **and** 10 800 **or** Yes **and** 10% = 1200 where 1200 comes from 12 000 – "10 800" **or** Yes **and** 21… **or** Yes **and** 13 200	Award no marks for correct decision with no supportive working 'Yes' may be implied by an equivalent statement eg 'Amy is right' or 'She is correct'

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
24	60	P1	for process to find SP of 200 oranges or number of bags, eg 200 ÷ 5 (= 40) oe **or** for process to find the overall profit, eg 200 ÷ 5 – 25 (= 15) oe **or** for process to find CP of 1 orange, eg 25 ÷ 200 (= 0.125) oe **or** SP of 1 orange, eg 1 ÷ 5 (= 0.2) oe **or** for process to find CP of 5 oranges, eg 25 ÷ (200 ÷ 5) (= 0.625) oe **or** for process to find number of oranges bought per £, eg 200 ÷ 25 (= 8)	Working can be in either pounds or pence SP = Selling Price CP = Cost Price 1.6 implies P1
		P1	(dep) for start to a process to find percentage profit, eg $\frac{"40"-25}{25}$ (= 0.6) oe **or** $\frac{"15"}{25}$ (= 0.6) oe **or** $\frac{"40"}{25} \times 100$ (= 160) oe **or** $\frac{"0.2"-"0.125"}{"0.125"}$ (= 0.6) oe **or** $\frac{1}{"0.625"} \times 100$ (= 160) oe **or** $\frac{1-"0.625"}{"0.625"}$ (= 0.6) oe **or** $\frac{"8"-5}{5}$ (= 0.6) oe **or** $\frac{"8"}{5} \times 100$ (= 160) oe **or** $\frac{"8"\times"15"}{200}$ (= 0.6) oe	
		A1	cao	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
13	3	P1	for a start to the process eg 240 − (2 × 45) (= 150) oe **or** (2 × 45) + 40 (= 130) oe	
		P1	for complete process eg "150" ÷ 40 (= 3.75) – can be implied by 40 + 40 + 40 = 120 **or** "130" + 40 + 40 (= 210)	Considering just one piece of 45 cm is not a misread but (240 – 45) ÷ 40 (= 4.875) oe should be awarded P1 only
		A1	cao	
14	Isabel (supported)	P1	for process to work with $\frac{3}{4}$ eg $1-\frac{3}{4}$ $(=\frac{1}{4})$ oe, eg 25% or $\frac{25}{100}$ **or** $\frac{3}{4}$ = 75% or $\frac{75}{100}$ **or** value of salary (say 1000) × 3 ÷ 4 (= 750)	
		P1	for process to work with ratio 3 : 7 eg $\frac{3}{3+7}$ oe **or** $\frac{7}{3+7}$ oe **or** value of salary (say 1000) ÷ (3+7) (= 100)	
		A1	for (28(%)), 25(%) and 30(%) **or** 72(%), 75(%), 70(%) **or** 0.28, 0.25, 0.3 **or** for using value of salary (say 1000) giving 280, 250, 300 **or** 720, 750, 700	
		C1	(dep P2) for Isabel or ft their comparative values	"Isabel" alone without supported evidence, gets 0 marks.

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
20	140	P1	for beginning to solve the problem eg 50 ÷ 5 × 8 (= 80) **or** 14 : 8 : 5 oe **or** 14 : 8 and 8 : 5 oe (linked)	80 may be seen in the ratio 80 : 50
		P1	for a full process to solve the problem eg "80" ÷ 4 × 7 **or** $\frac{50}{5}$ × "14" **or** 140 : 80 : 50	
		A1	cao	If 140 clearly identified as houses in working award full marks
21	30	P1	for full process to find the number of bags sold eg 5 × 1000 ÷ 250 (= 20) **OR** for process to find selling price of 1 kg of sweets eg 0.65 × 4 (= 2.60)	This could be by repeated addition Calculations can be in £ or pence
		P1	for [number of bags] × 0.65 **or** "20" × 0.65 (= 13) **or** "2.60" × 5 (= 13) **OR** for 10 ÷ "20" oe (= 0.50) **OR** for 0.65 × 4 (= 2.60) **and** 10 ÷ 5 (= 2)	[number of bags] can only come from 5 × 10 ÷ 250 (= 0.2) or 5 × 100 ÷ 250 (= 2) or 5 ÷ 250 (= 0.02)
		P1	(dep on previous P1) for a process to find the percentage profit eg ("13" – 10) ÷ 10 × 100 **or** (0.65 – "0.50") ÷ "0.50" × 100 **or** ("2.60" – "2") ÷ "2" × 100 **OR** "13" ÷ 10 ×100 (= 130) oe	3/10 or 0.3 is not enough but should be awarded 2 marks Award P3 for 130(%)
		A1	cao	

Paper: 1MA1/3F					
Question		Answer	Mark	Mark scheme	Additional guidance
18		1204	P2	for a full process to find 120% of 14200 eg, 1.2 × 14200 (=17040) **or** (0.2 × 14200) + 14200 (=17040)	
			(P1	for process to find 20% of 14200 eg, 0.2 × 14200 (=2840) oe)	
			P1	for [cost] − 5000	[cost] must be greater than 14200
			A1	cao	
				SCB1 for answer of 920 if P0 scored	
19	(a)	Inequality shown	B2	for fully correct solution with all three aspects with no ambiguity Aspect 1: circle at 4 Aspect 2: circle not shaded Aspect 3: arrow pointing left or line extending beyond −5, starting from their circle	Circling the number 4 alone scores B0 Aspect 1 and Aspect 2 must relate to the same circle.
			(B1	for any two aspects)	
	(b)	4,5,6,7	B2	for all four numbers in any order	
			(B1	for 2 or 3 correct values with no errors **or** 4 correct values with one extra)	
	(c)	$x \geq 6$	M1	for a correct intention to subtract 5 from both sides **or** a correct intention to subtract x from both sides	Can work with an equation for both M marks
			M1	for a full method to solve the inequality **or** showing a critical value of 6	Award 2 marks for an answer of x ? 6 where ? is an = or any incorrect inequality symbol, or for an answer shown as just 6.
			A1	cao	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
15	72	P1	for a correct process to find the number of boys or girls, eg boys = 0.55 × 800 (=440) **or** girls = 0.45 × 800 (=360) **or** process to find proportion that are boys having packed lunch, eg 0.55 × 0.4 (=0.22)	
		P1	for a correct process to find the total number of school dinners or packed lunches, eg SD = 800 × 0.69 (=552) **or** PL = 800 × 0.31 (=248) **or** process to find proportion that are girls having packed lunch, eg 0.31 – "0.22" (=0.09) **or** process to find the number of boys having school dinner, eg "440" × 0.6 (= 264) **or** number of boys having packed lunch, eg "440" × 0.4 (=176)	
		P1	for a correct process to find the number of girls having packed lunches, eg "800" × "0.31" – (440 × 0.4) **or** "0.45" × "800" – ("800" × "0.69" – "440" × 0.6) **or** "0.09" × 800	
		A1	cao	

	PL	SD	Total
Boys	176	264	440
Girls	72	288	360
Total	248	552	800

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
15 (a)	–13	M1	for substitution eg 3×5 and 4×-7 **or** 15 and –28	3×5 (= 15) and 4×-7 (= –28) may be seen separately but both must be seen for the award of M1
		A1	cao	35 and 4–7 do not get the mark unless multiplication is shown eg 35 = 15 is evidence of multiplication and should not be seen as choice
(b)	5	M1	for $38 = 3 \times 6 + 4y$ **or** $38 - 18$ (=20) **or** for a complete method to make y the subject eg $y = \frac{T - 3x}{4}$	eg $y = (T - 3x) \div 4$
		A1	cao	
16	58	P1	for a correct process to find the pass mark for the exam or either paper eg $(60 + 90) \div 3 \times 2$ oe (= 100) **or** $60 \div 3 \times 2$ oe (= 40) **or** $90 \div 3 \times 2$ oe	It is possible to award P0P1 on this question Accept 66% or better used for $\frac{2}{3}$
		P1	for a process to find 70% of 60 eg $\frac{70}{100} \times 60$ oe (= 42)	
		P1	for a complete set of processes to find the required mark "100" – "42"(=58) or "40"+ "60" – "42" (=58)	May be seen in parts
		A1	cao SC B2 for an answer of 48	

Paper: 1MA1/3F					
Question		Answer	Mark	Mark scheme	Additional guidance
16	(a)	$\frac{5}{11}$	M1	for $\frac{5}{n}$ where $n > 5$ or $\frac{m}{"11"}$ where $m < 11$	where "11" comes from 5+2+4
			A1	for $\frac{5}{11}$ oe	Accept any equivalent fraction, decimal form 0.45(45...) or percentage form 45(.45...)%
	(b)	0.7	B1	for 0.7 oe	Accept any equivalent fraction eg $\frac{7}{10}$ or percentage form eg 70%
17		accurate drawing	M1	for drawing a side of length 6cm	
			A1	for correct triangle	
18		258 to 275	M1	for taking a correct reading from the graph that shows conversion of an amount in $ to £	
			M1	for a complete method eg attempts to read from the graph at using numbers that sum to 345 **and** finds the sum of their readings eg 6 × 50 + 45	Must be a complete method to get to 345
			A1	for answer in the range 258 to 275	Condone incorrect money notation if the meaning is clear
19	(a)	140	M1	for complete method eg 56 ÷ 40 × 100	May be seen in different ways, eg 2.5 × 56
			A1	cao	
	(b)	32	M1	for method to find percentage, eg $\frac{18}{56} \times 100$ (=32.14…)	
			A1	for an answer in the range 32 to 32.2	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
23	Rahim (supported)	P1	for start to the process to find 20% for Tamara, eg 220000 × 0.2 oe (= 44000) **or** 30% for Rahim, eg 160000 × 0.3 oe (= 48000) **OR** for 1 – 0.2 (= 0.8) **or** 100 – 20 (= 80) **or** 1 + 0.3 (= 1.3) **or** 100 + 30 (= 130)	Build up processes are acceptable but must be complete and correct
		P1	for a complete process to find at least one new value, eg 220000 – "44000" (= 176 000) **or** 160000 + "48000" (= 208000) **OR** 220000 × "0.8" (=176000) **or** 160000 × "1.3" (=208000)	
		A1	for one correct value, 176 000 or 208 000	
		C1	for correct conclusion supported by correct figures eg Rahim, 176 000 and 208 000	Award 0 marks for a correct answer with no supportive working.
24	33	P1	for relating 24 to 8 parts, **or** (1 part =) 24 ÷ 8 (= 3) **or** 15 – 7 (= 8) **or** starts to use a build-up method, eg (8 :) 14 : 30	8 parts = 24
		P1	for (15 – 4) **and** (24 ÷ 8) **or** 15 × 3 (= 45) **and** 4 × 3 (= 12) **or** for 12 (: 21) : 45	
		A1	cao	

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
19	42	P1 P1 P1 A1	for process to find number of red counters, eg. 400 ÷ 8 × 3 (= 150) **or** process to convert both to percentages: 3/8 as 37.5 and 82/400 as 20.5 **or** process to convert both to fractions with common denominator: eg 3/8 as 75/200 and 82/400 as 41/200 oe for process to find number of green counters, eg 400 – "150" – 82 (=168) **or** process to find the percentage of red and yellow counters eg "37.5" + "20.5" (=58) or ("150" + 82) ÷ 400 × 100 (=58) for complete process to find the percentage of counters that are green, eg "168" ÷ 400 × 100 or 100 – (37.5 + 20.5) or 100 – "58" cao	NB could use other decimals eg 0.375, 0.205 or % or fractions
20	118 with reasons	M1 M1 C1 C1 A1	for angle *QPR* = 56 or *CQP* = 56 for angle *PQR* = (180 – 56) ÷ 2 (= 62) (dep on a previous M1) for giving a reason relating to parallel lines: angle *CQR* = 180 – "62" (Allied angles / Co-interior angles add up to 180) **or** angle *CQP* = 56 (corresponding angles are equal) **or** use "angle *QPR*" (alternate angles are equal) (dep on a previous M1) for at least one reason given from: vertically opposite angles are equal OR vertically opposite angles are equal **or** base angles of an isosceles triangle are equal **or** Angles in a triangle add up to 180 for 118	Angles must be clearly labelled on the diagram or otherwise identified. Full solution must be seen. Correct method can be implied from angles on the diagram if no ambiguity or contradiction. When reasons are given the key words underlined must be present. Reasons need to be linked to their method; any reasons not linked, do not credit. There should be no incorrect reasons given.

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
25	Chic Decor (supported)	P1	for process to find cost of 15 rolls from Chic Decor, eg $\frac{15}{3}\times 36$ (= 180) or for process to find cost of 15 rolls from Style Papers at normal price, eg $\frac{15}{5}\times 70$ (= 210) or for process to find cost of 1 roll from Chic Decor, eg 36 ÷ 3 (= 12) or for process to find cost of 1 roll from Style Papers, eg 70 ÷ 5 (= 14) or for process to find the cost of 5 rolls from Chic Decor, eg $\frac{36}{3}\times 5$ (= 60)	Could compare the costs for any number of rolls
		P1	for any first step in using the discount at Style Papers, eg 0.12 × "210" (= 25.2(0)) or 0.12 × "14" (= 1.68) or 0.12 × 70 (= 8.4(0)) **or** 1 – 0.12 (= 0.88)	
		P1	for full process to find cost from Style Papers, eg. "210" – "25.2" oe (=184.8(0)) or "0.88" × "210" or for "14" – "1.68" oe (= 12.32) or "0.88" × "14" or for 70 – "8.4(0)" oe (= 61.6(0)) or "0.88" × 70	
		C1	for Chic Decor with fully correct figures eg 180 and 184.8(0) or 12 and 12.32 or 60 and 61.6(0)	

Paper: 1MA1/2F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
9		Chart	B1	for correct day labels or a linear scale	Accept key in place of labels
			M1	for correct bars showing information for at least 3 days	Condone bars of varying widths Condone no gaps or inconsistent gaps
			A1	for a fully correct bar chart	Labels of Day and Frequency not essential
10	(a)	49	M1	for attempt to find the difference between 07 20 and 08 09	May be seen in stages eg 10+30+9
			A1	cao	
	(b)	Yes with correct working	P1	for a process shown to add a time to a departure time, eg 0800 + 7 or 0800 + 15 or 0800 + 7 + 15 **or** process for time at work after Bolton bus stop arrival, eg "0858" + 15 **or** find accumulated additional time, eg 7 + 15 (= 22) **or** starts to work backwards, eg 0920 − 15	
			P1	for a process to select correct bus time from Blackrod to Bolton eg 0809 to 0858	8 09 stated as bus start time or 7 40 (from Wigan) is enough for this mark
			C1	for conclusion of "yes" supported by correct comparable figures, eg states 0913 **or** 0858 and 22 (spare)	NOTE other comparisons may be seen
11		130	P1	process to find the total number of children, eg 214 – 14 (= 200)	
			P1	process to find the number of children wearing a hat, eg "200" × 35 ÷ 100 (= 70) **or** process to find the multiplier for the percentage of children not wearing a hat, eg (100 – 35) ÷ 100 (= 0.65)	
			P1	for full process to find the number of children not wearing a hat, eg "200" – "70" **or** "200" × "0.65" **or** 214 – "70" – 14	
			A1	cao	

Paper: 1MA1/1F

Question	Answer	Mark	Mark scheme	Additional guidance
14	Graph drawn	B3	for a correct line between $x = -2$ and $x = 2$	Accept freehand line drawn
		(B2	for a correct straight-line segment through at least 3 of $(-2, -9)$, $(-1, -5)$, $(0, -1)$, $(1, 3)$, $(2, 7)$ **or** for all these points plotted but not joined **or** for a line drawn with a positive gradient through $(0, -1)$ **and** clear intention to use a gradient of 4, eg line through $(0, -1)$ and $(1, 3)$)	Ignore any incorrect points. Table of values x | -2 | -1 | 0 | 1 | 2 y | -9 | -5 | -1 | 3 | 7
		(B1	for at least 2 correct points stated or plotted **or** for a line drawn with a positive gradient through $(0, -1)$ **or** a line with gradient 4)	Ignore any incorrect points. Coordinates may be in a table or working. Do not accept $y = -1$ drawn
15	450	P1	for working with percentage eg $12000 \times 25 \div 100$ (= 3000) oe **OR** for splitting the cost of the car over 20 months eg $12000 \div 20$ (= 600)	
		P1	for finding the amount to pay in instalments eg 12000 – [deposit] (= 9000) **OR** for splitting the cost of the deposit over 20 months eg [deposit] ÷ 20 (= 150) **OR** for finding 25% of the monthly cost eg "600" × 25 ÷ 100 (= 150) oe	[deposit] can be 3000 or any figure that is identified by them as the deposit or 25% of 12000 calculated incorrectly.
		P1	for finding the amount required eg "9000" ÷ 20 **or** (12000 – [deposit]) ÷ 20 **OR** "600" – "150"	
		A1	cao	

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
23	35	P1	for process to work out income and outgoings, eg 7.5(0) × 54 (= 405) **and** 100 + 120 + 80 (= 300)	
		P1	for process to find the profit, eg "405" **–** "300" (= 105) **OR** "405" ÷ "300" (= 1.35) **or** "405" ÷ "300" × 100 (= 135)	
		P1	for a full process to find percentage profit, eg ("105" ÷ "300") ×100 **or** ("1.35" – 1) × 100 **or** "135" – 100	
		A1	cao	
24	4811.20	M1	for full method for one year, eg 4500 × 1.034 (= 4653) oe	Can be implied by 4806 or 9306
		A1	for 4811.2(0)	Accept 4811.202 and 4811.21
25	11	M1	for one correct step to isolate x term or constant term on one side, eg adds x to both sides to get $5x - 14 + x = 52 - x + x$ **or** adds 14 to both sides to get $5x - 14 + 14 = 52 - x + 14$ oe	May be seen in different equivalent forms but must be carried out, not just intention seen. Can be implied by eg $4x = 66$ or $6x = 38$
		M1	for both correct steps to isolate terms in x on one side and constant term on one side, eg "$6x$" – 14 + 14 = 52 + 14, **or** $5x + x =$ "66" + $x - x$	
		A1	cao	

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
10	120	P1	for process to work with length, eg 40 ÷ 4 (= 10) **or** 40 × 5 (= 200) **or** 40 ÷ 4 × 3 (= 30) **or** 40 × 4 (= 160)	May be shown on the diagram
		P1	for process to work with perimeter, eg "10" × 12 **or** [square side length] × 12 **or** [square side length] × 11 **or** "200" – 2 × 40 **or** "30" × 4 oe **or** "160" – 40	[square side length] is what they clearly think is the length of one side of the square.
		A1	cao	
11 (a)	$6xy$	B1	cao	
(b)	$5d - 3e$	M1	for $5d$ **or** $-3e$	An answer of $5d + -3e$ scores M1 A0
		A1	for $5d - 3e$	
12	15	P1	for process to find number of child tickets, eg 180 ÷ 100 × 60 (= 108) oe	
		P1	for process to find total cost of child tickets, eg "108" × 8 (= 864) **or** [108] × 8 **OR** for process to find number of adult tickets, eg 180 – [108] (= 72) or 180 ÷ 5 × 2 (= 72) oe or $180 \times \frac{100-60}{100}$	Where [108] is what they clearly think is 60% of 180 but can't be greater than 180
		P1	for a complete process, eg (1944 – "864") ÷ "72" **or** (1944 – [108] × 8) ÷ (180 − [108])	
		A1	cao	

Paper: 1MA1/2F					
Question		**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
24	(a)	5, (0), –3, –4, (–3), 0, 5	B2 (B1	for all 5 correct values for at least 2 correct values)	
	(b)	Graph drawn	B2 (B1	for a fully correct graph ft (dep on B1 in (a)) for plotting at least 5 of the points from their table correctly)	Accept freehand curves drawn that are not line segments Ignore anything drawn outside the required range
25		Yes (supported)	P1 P1 P1 C1	for start to a process to find a percentage increase, eg $85-76\,(=9)$ or $66-65\,(=1)$ **or** $\frac{85}{76}\,(=1.118...)$ or $\frac{66}{65}\,(=1.015...)$ for process to find a % increase, eg $\frac{"9"}{76}\times 100\,(=11.84...)$ or $\frac{"1"}{65}\times 100\,(=1.53...)$ **or** $\frac{85}{76}\times 100-100\,(=11.84...)$ oe or $\frac{66}{65}\times 100-100\ (=1.53...)$ oe for processes to find both % increases, eg $\frac{"9"}{76}\times 100\,(=11.84...)$ **and** $\frac{"1"}{65}\times 100\,(=1.53...)$ **or** $\frac{85}{76}\times 100-100\,(=11.84...)$ oe **and** $\frac{66}{65}\times 100-100\ (=1.53...)$ oe for Yes supported by correct figures, eg 11(.842…) ÷ 1.5(38…) = 7.3 to 8 **or** 11(.842...) **and** 1.5(38…) × 7 = 10(.766…) **or** 11(.842…) ÷ 7 = 1.57 to 1.7 **and** 1.5(3…) **or** 0.11(842…) **and** 0.10(766…)	Accept use of rounded and truncated figures for all marks. May work in decimals or equivalent proportions throughout
]					

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
22	No (supported)	P1	for start to process, eg $2100 \times \frac{40}{100}$ (= 840) **or** 100 – 40 (= 60)	May compare bonus shares of a single salesman or total bonus share for all 7 salesmen.
		P1	for process to find the 7 salesmen's share of bonus, eg 2100 – "840" (= 1260) **or** $2100 \times \frac{"60"}{100}$ (= 1260)	
		P1	for process to find bonus amount each salesman gets eg "1260" ÷ 7 (= 180) **OR** process to find the total bonus for all salesmen if shared equally, eg $\frac{2100}{10} \times 7$ (= 1470)	
		P1	for process to compare what a single salesman gets under each scheme, eg "180" × $\frac{25}{100}$ (= 45) and "$\frac{2100}{10}$" – "180" (= 30) **or** "180" × $\frac{25}{100}$ (= 45) and "180" + "45" (= 225) oe and $\frac{2100}{10}$ (= 210) **or** ($\frac{2100}{10}$ – "180") ÷ "180" × 100 (= 16.6...) **OR** process to compare what all salesmen gets under each scheme, eg "1260" × $\frac{25}{100}$ (= 315) and "1470" – "1260" (= 210) **or** "1260" × $\frac{25}{100}$ (= 315) and "1260" + "315" (= 1575) oe and "1470" **or** ("1470" – "1260") ÷ "1260" × 100 (= 16.6...)	
		A1	'No' supported by correct figures, eg 45 and 30, 225 and 210, 315 and 210 **or** 1575 and 1470 **or** 16.(6...)(% and 25%)	Do not award unless correct figures have been shown to support a statement made that the salesman was not correct.

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
22	79.76	P1	process to find number of gallons eg 560 ÷ 34.5 (=16.23…) OR finding the miles per litre eg 34.5 ÷ 4.55 (=7.582…)	For P marks allow use of truncated/rounded values
		P1	process to convert from gallons to litres eg "16.23" × 4.55 (=73.855….) OR to work out the cost per gallon eg 4.55 × 1.08 (=4.914) OR finding the number of litres eg 560 ÷ "7.582…." (=73.859…)	
		P1	(dep P2) for a complete process to work out the cost using the operations (560 ÷ 34.5) × 4.55 × 1.08 eg "73.855…" × 1.08 (=79.763…) or "4.914" × "16.23…" (=79.763…) or "73.859…" × 1.08 (=79.763....)	
		A1	for 79.69 to 79.79	To 2 dp but accept 79.7
23	612	P1	Alan: for 100 − 32 − 40 (= 28) or for finding "28"% of 400 eg 400 × 0.28 (=112)	
		P1	Beryl: for $1-\frac{3}{10}-\frac{1}{10}\left(=\frac{6}{10}=60\%\right)$ or for finding $"\frac{6}{10}" \times 500$ (=300)	
		P1	Charlie: for starting to use the ratio 3 : 4 eg 150 ÷ 3 (=50)	
		P1	for complete ratio process eg $"\frac{150}{3}" \times 4$ (=200)	
		A1	cao	Answers only (without working) award 0 marks.

Paper: 1MA1/3F					
Question		Answer	Mark	Mark scheme	Additional guidance
10	(a)	Diameter drawn	B1	diameter drawn	Accept hand drawn, intention through centre and from edge to edge. Ruler not required but intention clear.
	(b)	Segment shaded	B1	segment drawn unambiguously	Line must go edge to edge (condone extending outside the circle). Freehand acceptable. Can also draw a diameter here (as semi-circle).
11	(a)	2.5(0)	P1	for 13 × 7.5(0) (=97.5(0)) **or** 5 × 20 (=100)	
			P1	for "100" – "97.5(0)"	
			A1	cao	
	(b)	96	M1	for $\frac{1}{5}$ × 120 (= 24) oe **or** $\frac{4}{5}$ × 120 oe	
			A1	cao	
12		6	P1	process to find the weight of small boxes eg 3 × 450 (=1350)	
			P1	complete process to find the number of large boxes, eg (5850 – "1350") ÷ 750 **or** 5850 – "1350" (=4500) **and** 6 × 750 (=4500)	
			A1	cao	Cannot award this mark if 6 comes from a rounded value due to error in calculating
13		43	M1	for identifying 74 and 31 as the key numbers	It is insufficient to identify these on the diagram (eg as 1, 4) –43 as an answer implies M1
			A1	cao	

Paper: 1MA1/1F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
17	Conclusion (supported)	P1	for process to find 1/10 of 500 eg. 500 ÷ 10 (= 50) **or** 1 – 0.1 (= 0.9) oe	
		P1	(dep) for process to reduce 500 by 1/10 eg. 500 – "50" **or** 500 × "0.9" (= 450)	
		P1	for process to calculate 20% of [Monday sale price] eg. "450" × $\frac{20}{100}$ (= 90) oe **or** for use of 100 – 20 (= 80) or 1 – 0.2 (= 0.8) in relation to [Monday sale price]	
		P1	(dep on P3) for a fully correct process to find the cost of the TV on Tuesday eg. "450" – "90" (= 360) or "450" × "0.8" (= 360)	
		C1	for conclusion (Yes) supported by correct figures.	eg Yes, the TV will cost 360 Yes, he will have 40 over left
18	4550 to 4800	M1	for rounding at least two figures to 800, 50, 300 or 290 (which could be evidenced through partial calculation)	Any attempt to find the exact answer gets NO marks even if followed by rounding
		M1	(dep) for a correct calculation using their rounded values eg. sight of 240000 (= 800 × 300) **or** 232000 (= 800 × 290) **or** 229100 (= 790 × 290) **or** 16 (= 800 ÷ 50) **or** 15.8 = (790 ÷ 50) **or** 6 (= 300 ÷ 50) **or** 5.8 = (290 ÷ 50)	Various operations possible
		A1	for answer in range 4550 to 4800	

Paper: 1MA1/2F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
18	13.2	P1	process to convert decimal time, eg 25.3 × 60 (= 1518) or 0.3 × 60 (= 18) **OR** process to work with mean, eg [time] ÷ 115 (= 0.22) or 1÷ (115 ÷ [time]) (= 0.22)	[time] could be 25.3 or any other time that has been incorrectly changed from 25.3 hours
		P1	full process to work out mean time allocated for appointment, eg "1518" ÷ 115 or "0.22" × 60	
		A1	cao	
19	1.19	P1	process to find number of small bags that can be filled, eg [3kg] ÷ 150 (= 20) oe	[3kg] must be 3 and zeros only eg 300 Build up methods are allowed to imply process
		P1	for starting a process to work with percentage for cost of box, eg 17.60 × $\frac{35}{100}$ (= 6.16) **or** 100 + 35 (= 135) **OR** works with starting cost per small bag, 17.60 ÷ "20"	Cost per small bag given as £0.88 will imply P1P1
		P1	for full process to work with percentage increase, eg 17.60 × $\frac{"135"}{100}$ (= 23.76) **OR** begins process to work with percentage for a small bag, eg "0.88" × $\frac{35}{100}$ (= 0.308)	
		P1	full process to find selling price for small bag, eg "23.76" ÷ "20" (= 1.188) **OR** full process to find selling price for small bag, "0.88" × $\frac{135}{100}$ (= 1.188) oe	
		A1	cao	

Paper: 1MA1/1F					
Question		Answer	Mark	Mark scheme	Additional guidance
13	(a)	$5a$	B1	cao	
	(b)	$19 - 2b + 5c$	M1	for $-2b$ or $5c$	
			A1	for $19 - 2b + 5c$	Accept the correct 3 terms in any order The A mark is lost for any incorrect subsequent working, eg. $17b + 5c$
	(c)	$2(4d - 3)$	B1	for $2(4d - 3)$ oe	Accept $(4d - 3)2$ or $2\times(4d - 3)$ or $(4d - 3)\times 2$ Condone missing final bracket, eg $2(4d - 3$
14	(a)	27	B1	cao	
	(b)	$\frac{2}{7}$	B1	or any equivalent fraction	
	(c)	No (supported)	P1	for method to find the number of children on Friday eg 0.7×500 oe (= 350)	
			P1	for method to find the number of children on Saturday eg $720 \div 8 \times 5$ oe (= 450)	
			C1	for No with correct figures, eg No **and** 350 **and** 450 **or** No **and** 100 more on Saturday	Award 0 marks for a correct answer with no supportive working.

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
21 (a)	11533	P1	for working with 68%, eg 800 × 0.68 (= 544 people) oe or "16960" × 0.68 oe	Percentage calculation could be done at any stage
		P1	for a correct process, other than that of finding a %, eg "544" × 2 (= 1088) or 10.6 × 2 (= 21.2) or 800 × 2 (= 1600) or "544" × 10.6 (= 5766.4) or 800 × 10.6 (= 8480)	
		P1	for full process to find amount of coffee required eg "1088" × 10.6 or "544" × "21.2" or "5766.4" × 2 (= 11532.8) or for an answer of 11532	
		A1	for answer in the range 11532.5 to 11533	If a correct answer within the range is shown in working but incorrectly rounded award full marks.
(b)	Statement	C1	for a correct statement **Acceptable examples** the amount will be more; he will need more coffee it is an underestimate my answer in part (a) means there would not be enough for everyone he will need 12211(.2); needs 678(.4) more **Not acceptable examples** amount will decrease, amount of coffee will change	If figures are given as part of the answer they must be correct, but can allow ft.

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
8 (a)	49.9(0)	B1	for 49.9(0)	
	30	B1	for 30	
	417.31	B1	for 417.31, ft allow 367.41 + [their 49.9(0)] for this mark	To award B1ft, the total for tin of paint must not be blank or 0
(b)	771.45	M1	for a correct first step, eg 892.48 + 4.47 (= 896.95) **or** 892.48 + 240 (= 1132.48) **or** 892.48 – 365.5(0) (= 526.98) **or** 4.47 + 240 (= 244.47)	May be seen embedded in other calculations eg 4.47 + 240 – 365.5(0)
		M1	for a complete method, eg 892.48 + 4.47 + 240 – 365.5(0)	
		A1	cao	
9	118	P1	for a correct first step, eg 200 × 2 ÷ 5 (= 80) **or** 200 × 3 ÷ 5 (= 120) **or** $1-\frac{2}{5}\left(=\frac{3}{5}\right)$ oe eg 100 – 40 (= 60(%))	
		P1	for a process to find the number of child vegetarians or number of child non-vegetarians, eg "80" × 0.35 (= 28) **or** "80" × (1 – 0.35) (= 52)	
		P1	for a process to find the number of adult vegetarians or number of adult non-vegetarians, eg (200 – "80") × 0.45 (= 54) **or** (200 – "80") × (1 – 0.45) (= 66)	
		P1	for a complete process to find the total number of non-vegetarians, eg 200 – "28" – "54" **or** ("80" – "28") + (200 – "80" – "54") oe eg "52" + ("120" – "54") **or** "80" × (1 – 0.35) + (200 – "80") × (1 – 0.45)	
		A1	cao	Answer of $\frac{118}{200}$ is P4A0

Paper: 1MA1/3F				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
21	45.6	P1	for a process to start to work with the ratio, eg 240 ÷ (3 + 5) (= 30) **or** pens = 3*n* and pencils = 5*n* where *n* is a positive integer	Can work in £ or pence but must be consistent, 90 or 150 imply P1 This mark can be awarded at any stage
		P1	for a complete process to find the number of pens and pencils, eg "30" × 3 (= 90) **and** "30" × 5 (= 150)	
			OR for process to find one cost or amount to sell for one item eg [pens] × 9 (= 810) **or** [pens] × 11 (= 990) **or** [pencils] × 6 (= 900) **or** [pencils] × 10 (= 1500)	[pens] could be "30" × 3 or their number of pens [pencils] could be "30" × 5 or their number of pencils
			OR for process to find the profit for one pen or one pencil eg 11 – 9 (= 2) or 10 – 6 (= 4)	[pens] , [pencils] ≠ 1
		P1	for a process to find the total cost to buy or the total amount to sell for both, eg [pens] × 9 + [pencils] × 6 (= 1710) **or** [pens] × 11 + [pencils] × 10 (= 2490)	180 or 600 or 780 implies P3 [pens] could be "30" × 3 or their number of pens
			OR process to find the profit for one item eg [pens] × 11 – [pens] × 9 (= 180) or [pens] × (11 – 9) (= 180) **or** [pencils] × 10 – [pencils] × 6 (= 600) or [pencils] × (10 – 6) (= 600)	[pencils] could be "30" × 5 or their number of pencils [pens] , [pencils] ≠ 1
		P1	for a complete process to find the profit as a percentage or a decimal, eg $\frac{[2490]-[1710]}{[1710]}\times 100$ **or** $\frac{[2490]-[1710]}{[1710]}(=0.456...)$	[2490] is their amount to sell for both pens and pencils [1710] is their cost of pens and pencils
			or for a process to find the amount to sell as a percentage of the cost eg $\frac{[2490]}{[1710]}\times 100$ $(=145.6...)$	[2490] – [1710] may be [180] + [600]
		A1	answer in the range 45.6 to 45.62	If an answer is given in the range in working and then rounded incorrectly award full marks. A correct answer with no supportive working gets 0 marks

Paper: 1MA1/2F					
Question		Answer	Mark	Mark scheme	Additional guidance
17	(a)	265.05	M1	for 285 × (7 ÷ 100) (= 19.95) oe **or** (100 – 7) ÷ 100 (= 0.93)	
			M1	for 285 – "19.95" **or** 285 × "0.93" oe	
			A1	cao	Accept £265.05p
	(b)	8000	P1	for start of process, eg 2100 – 1700 (= 400)	
			P1	for using "400" = 5%, eg (1% =) "400" ÷ 5 (= 80) or (10% =) "400" × 2 (= 800) or (50% =) "400" × 10 (= 4000) **or** "400" ÷ 5 × 100	
			A1	cao	
18		enlargement, scale factor 2, centre (0, 0)	B2	enlargement, scale factor 2, centre (0, 0)	Award no marks if more than one transformation is given
			(B1	for 2 correct aspects)	
19	(a)	$5w(3w – 1)$	B2	for $5w(3w – 1)$	
			(B1	for $5(3w^2 – w)$ **or** $w(15w – 5)$ **or** $5w(aw – b)$ where a and b are integers or $(3w – 1)$ as a factor)	
	(b)		M1	for drawing a line from –2 to 4 or for an open circle at –2 or for a closed circle at 4	
			A1	cao	