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

Number Operations & Properties (N1)

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

151 questions · 278 marks · Mark schemes included

Past papers June 2017 - June 2025 · 4 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

151 questions · 278 marks · 4 sub-topics

SUB-TOPIC N1a

PLACE VALUE, ORDERING & THE FOUR OPERATIONS

Sub-topic N1a · 82 questions · 144 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 (a) Change 365 cm into metres.

..... m
(1)

- (b) Change 2.7 kg into grams.

..... g
(1)

(Total for Question 1 is 2 marks)

- 2 Work out $2 + 7 \times 10$

.....

(Total for Question 2 is 1 mark)

- 3 Solve $\frac{y}{4} = 10.5$

$y =$

(Total for Question 3 is 1 mark)

- 4 Here are four numbers.

−9 −2 2 9

Write one of these numbers in each box to make a correct calculation.

$$\boxed{\text{.....}} + \boxed{\text{.....}} = -7$$

(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 (a) Change 365 cm into metres.

..... m
(1)

- (b) Change 2.7 kg into grams.

..... g
(1)

(Total for Question 1 is 2 marks)

- 2 Work out $2 + 7 \times 10$

.....

(Total for Question 2 is 1 mark)

- 3 Solve $\frac{y}{4} = 10.5$

$y =$

(Total for Question 3 is 1 mark)

- 4 Here are four numbers.

−9 −2 2 9

Write one of these numbers in each box to make a correct calculation.

$$\begin{array}{|c|} \hline \\ \hline \end{array} + \begin{array}{|c|} \hline \\ \hline \end{array} = -7$$

(Total for Question 4 is 1 mark)



9 Jacqui wants to work out $3480 \div 5$

She knows that $3480 \div 10 = 348$

Jacqui writes $3480 \div 5 = 174$

because $10 \div 5 = 2$

and $348 \div 2 = 174$

What mistake did Jacqui make in her method?

(Total for Question 9 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 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 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 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)



- 5 Find the number that is exactly halfway between 7 and 15

(Total for Question 5 is 1 mark)

- 6 Harry is planning a holiday for 4 people for 7 days.

Here are the costs for the holiday for **each person**.

Travel	£150
Hotel	£50 for each day
Spending money	£250

Work out the total cost of the holiday for 4 people for 7 days.

£.....

(Total for Question 6 is 4 marks)



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)

- 5 Write the number two million in figures.

.....
(Total for Question 5 is 1 mark)

- 6 Dave goes into a cafe and buys 2 cups of coffee and a piece of cake.

Each cup of coffee costs £2.75

The cake costs £2.90

Dave pays with a £10 note.

He thinks he will get more than £1.50 in change.

Is Dave correct?

You must show how you get your answer.

(Total for Question 6 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 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 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 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 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** 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)



- 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.

.....

.....

.....

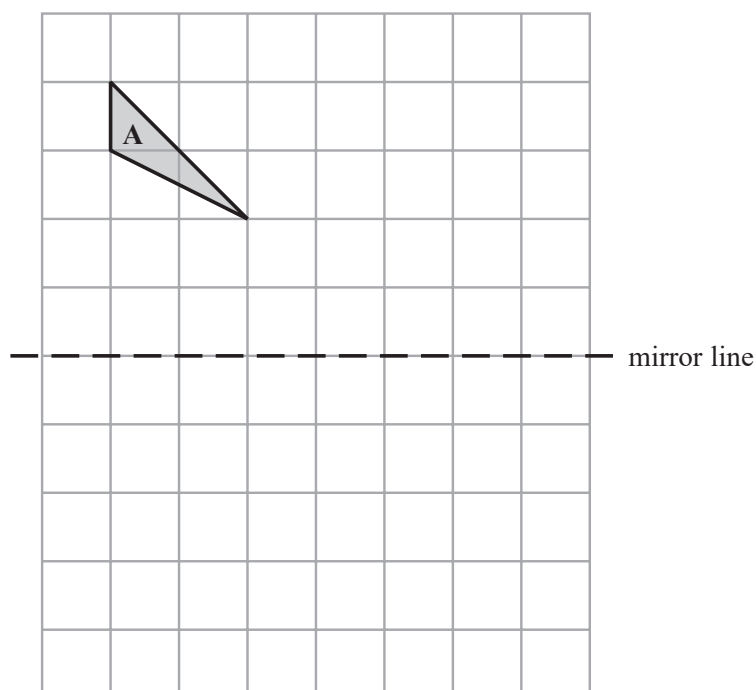
(Total for Question 9 is 1 mark)

- 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)

- 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

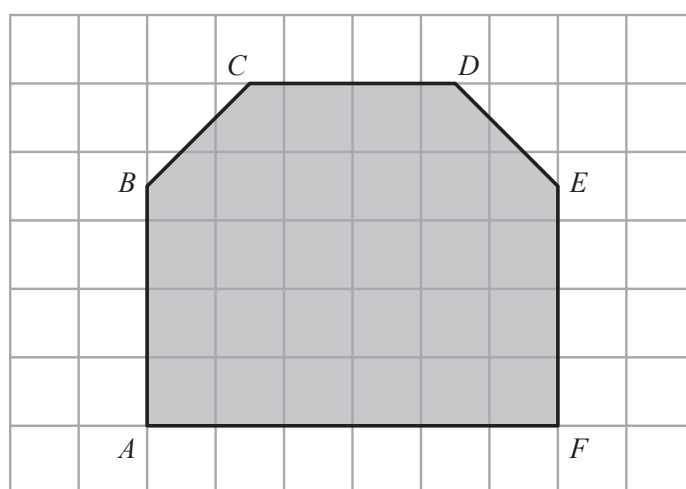
(Total for Question 6 is 1 mark)

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

-11 -2 8 -7 3 10

(Total for Question 6 is 1 mark)

- 7 Here is polygon $ABCDEF$ on a square grid.



- (a) Write down the mathematical name of the polygon.

(1)

- (b) Which side of the polygon is parallel to the side CD ?

(1)

- (c) Write down a side of the polygon that is perpendicular to the side AF .

(1)

(Total for Question 7 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 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.

-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)



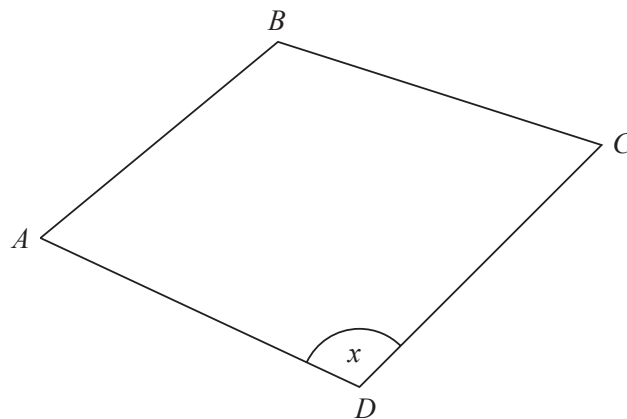
- 5 Here are four cards.
There is a number on each card.



Write down the smallest 4-digit even number that can be made using each card only once.

.....
(Total for Question 5 is 1 mark)

- 6 Here is a quadrilateral $ABCD$.



- (a) Measure the length of the side AB .
Give your answer in centimetres.

..... centimetres
(1)

- (b) Measure the size of the angle marked x .

.....
(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 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 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.

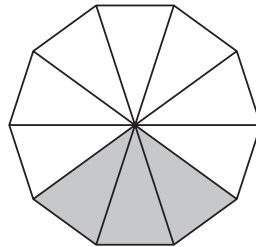
You must write down all the stages in your working.

- 1 Write 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.

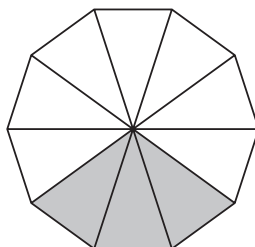
You must write down all the stages in your working.

- 1** Write 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 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** Here is a list of numbers.

2 4 4 7 8

Work out the range of these numbers.

.....
(Total for Question 1 is 1 mark)

- 2** Work out $120 - 89$

.....
(Total for Question 2 is 1 mark)

- 3** Simplify $3 \times a \times 4$

.....
(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 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 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.

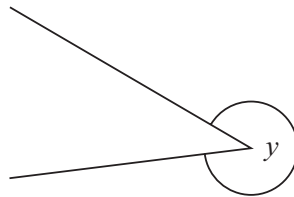
- 1 Write the number 18475 correct to the nearest thousand.

.....
(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 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 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.

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

.....
(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)



12 Olly was asked to work out $5 - 3 \times 4$

Olly wrote $5 - 3 = 2$

He then worked out 2×4

Explain what is wrong with Olly's method.

.....

.....

.....

(Total for Question 12 is 1 mark)

13 Here is a number machine.



(a) Find the output when the input is 11

.....
(2)

Here is a different number machine.



When the input is 10, the output is 28

(b) Complete this number machine.

.....
(2)

(Total for Question 13 is 4 marks)

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

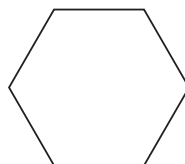
(Total for Question 2 is 1 mark)

- 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)

- 5 Find the number that is exactly halfway between -2 and 8

.....
(Total for Question 5 is 1 mark)

- 6 Jo uses beads to make bracelets.
For each bracelet she uses 5 red beads and 7 white beads.

Jo has 52 red beads and 80 white beads.

Work out the greatest number of bracelets Jo can make.
You must show all your working.

.....
(Total for Question 6 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 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 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** 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)



Daniel's height is 6 feet 3 inches.

1 foot = 12 inches

(b) What is Daniel's height in centimetres?

..... centimetres
(3)

(Total for Question 11 is 4 marks)

12 Find the value of $\frac{\sqrt{13.4 - 1.5}}{(6.8 + 0.06)^2}$

Write down all the figures on your calculator display.

.....
(Total for Question 12 is 2 marks)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1** The table shows the lengths of five rivers.

River	Length (km)
Trent	297
Don	112
Severn	354
Thames	346
Mersey	113

- (a) Write down the rivers in order of length.

Start with the shortest river.

(1)

Ami says,

“The River Thames is more than three times as long as the River Don.”

- (b) Show that Ami is correct.

(1)

(Total for Question 1 is 2 marks)



- 2 Cups are sold in packs and in boxes.

There are 12 cups in each pack.

There are 18 cups in each box.

Alison buys p packs of cups and b boxes of cups.

Write down an expression, in terms of p and b , for the total number of cups Alison buys.

.....
(Total for Question 2 is 2 marks)

- 3 Here are four digits.

5 6 1 9

- (i) Write down the smallest possible two digit number that can be made with two of the digits.

.....
(1)

- (ii) Write down the three digit number closest to 200 that can be made with three of the digits.

.....
(1)

(Total for Question 3 is 2 marks)



- 7 Priti is going to have a meal.
She can choose one starter and one main course from the menu.

Menu	
Starter	Main Course
Salad	Pasta
Fish	Rice
Melon	Burger

Write down all the possible combinations Priti can choose.

.....

.....

.....

(Total for Question 7 is 2 marks)

- 8 Joanne wants to buy a dishwasher.

The dishwasher costs £372

Joanne will pay a deposit of £36

She will then pay the rest of the cost in 4 equal monthly payments.

How much is each monthly payment?

£.....

(Total for Question 8 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 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)



5 Here are four digits.

7 3 4 9

(a) Use three of these digits to write down the largest possible 3-digit number.

.....
(1)

(b) Here are four different digits.

8 2 1 6

Put one of these digits in each box to give the smallest possible answer to the sum.
You must use each digit only once.

		+		
-------------	-------------	---	-------------	-------------

(1)

(Total for Question 5 is 2 marks)

6 Write down all the factors of 30

.....
(Total for Question 6 is 2 marks)



- 7 David has twice as many cousins as Becky.
Becky has twice as many cousins as Nishat.

Nishat has 6 cousins.

How many cousins does David have?

.....
(Total for Question 7 is 2 marks)

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

.....
(1)

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

.....
(2)

(Total for Question 8 is 3 marks)



15 Jenny is asked to find the value of $12 - 2 \times 4$

Here is her working.

$$12 - 2 \times 4 = 10 \times 4 = 40$$

Jenny's answer is wrong.

(a) Explain what Jenny has done wrong.

(1)

Rehan is asked to find the range of the numbers 3 1 8 7 5

Here is his working.

$$\text{Range} = 5 - 3 = 2$$

This is wrong.

(b) Explain why.

(1)

(Total for Question 15 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) $56.3 + \boxed{} = 100$

(1)

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

(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)



11 Work out 74×58

.....
(Total for Question 11 is 2 marks)



10 Here are three symbols.

<	>	=
---	---	---

Write one of these symbols in each box to make four true statements.

$14 \quad \square \quad 21$

$4 + 7 \quad \square \quad 103 - 92$

$2^2 \quad \square \quad 2 \times 2$

$-3 \quad \square \quad -5$

(Total for Question 10 is 2 marks)

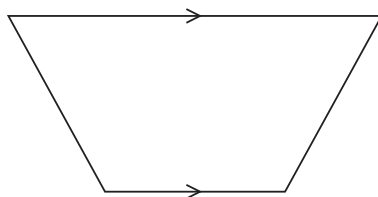
11 $P = 7r + 3q$

Work out the value of P when $r = 5$ and $q = -4$

(Total for Question 11 is 2 marks)

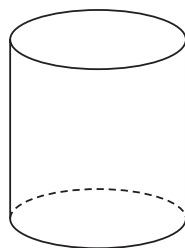


- 6 (a) Write down the mathematical name of this quadrilateral.



.....
(1)

- (b) Write down the mathematical name of this 3-D shape.



.....
(1)

(Total for Question 6 is 2 marks)

- 7 £42 is shared equally between 3 friends.

How much does each friend get?

£.....

(Total for Question 7 is 2 marks)

- 9 Danny buys,
- 1 loaf of bread for £1.20
 - 1 bottle of milk for 70p
 - 2 packets of cheese for £2.30 each packet

Danny pays with a £10 note.

He says,

“I should get £3.30 change.”

Is Danny correct?

You must show how you get your answer.

(Total for Question 9 is 3 marks)

- 10 Rachel records the temperature in her garden at noon each day.

On Monday, the temperature was 5°C .

On Tuesday, the temperature was 10° less than the temperature on Monday.

On Wednesday, the temperature was 3° greater than the temperature on Tuesday.

Find the difference between the temperature on Monday and the temperature on Wednesday.

You must show all your working.

..... $^{\circ}\text{C}$

(Total for Question 10 is 2 marks)



- 10** In Norway last year, the lowest temperature was -15°C .
In Norway last year, the highest temperature was 42°C greater than the lowest temperature.

Work out the highest temperature in Norway last year.

..... $^{\circ}\text{C}$

(Total for Question 10 is 2 marks)

- 11** At the end of October, Fiona's electricity meter reads 88 738 kWh.
At the end of November, her electricity meter reads 89 198 kWh.

Each kWh of electricity Fiona uses costs 16p

Work out how much Fiona had to pay for the electricity she used in November.

.....

(Total for Question 11 is 4 marks)



13 Sophie works in a bed shop.

During the last three months she sold 198 beds.

59 beds were sold without a mattress.

45 beds were double beds.

17 of the single beds were sold without a mattress.

67 of the 83 king size beds were sold with a mattress.

Use this information to complete the two-way table.

	Single	Double	King size	Total
With mattress				
Without mattress				
Total				

(Total for Question 13 is 3 marks)

14 The box below contains three mathematical symbols.

$=$ $<$ $>$

From the box, choose a symbol to make each of the following statements correct.

(i) $\frac{5}{8}$ $\frac{2}{8}$ (1)

(ii) -2×-3 $-3 + 9$ (1)

(Total for Question 14 is 2 marks)

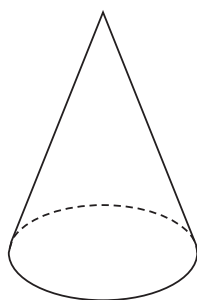
- 6 Lydia works for 4 hours.
She is paid £50

How much is Lydia paid per hour?

£.....

(Total for Question 6 is 2 marks)

- 7 Here is a 3-D shape.



- (a) Write down the name of this 3-D shape.

.....
(1)

- (b) In the space below, draw a sketch of a triangular prism.

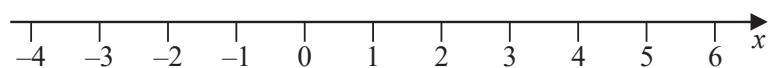
(1)

(Total for Question 7 is 2 marks)

19 (a) Factorise fully $15w^2 - 5w$

.....
(2)

(b) On the number line below, show the set of values of x for which $-2 < x \leq 4$



(2)

(Total for Question 19 is 4 marks)

20 Use your calculator to work out the value of

$$\sqrt{\frac{208.3 - 15.7}{5.694 + 1.8^2}}$$

Write down all the digits on your calculator display.

.....
(Total for Question 20 is 2 marks)

23 Work out 54.6×4.3

(Total for Question 23 is 3 marks)



- 11** There are 30 children in a nursery school.
At least 1 adult is needed for every 8 children in the nursery.

(a) Work out the least number of adults needed in the nursery.

.....
(2)

2 more children join the nursery.

- (b) Does this mean that more adults are needed in the nursery?
You must give a reason for your answer.

.....
(1)

(Total for Question 11 is 3 marks)

- 12** Emma has 45 rabbits.

30 of the rabbits are male.

8 of the female rabbits have short hair.

12 of the rabbits with long hair are male.

- (a) Use the information to complete the two-way table.

	Male	Female	Total
Long hair			
Short hair			
Total			

(3)

One of Emma's rabbits is chosen at random.

- (b) Write down the probability that this rabbit is a female with short hair.

.....
(1)

(Total for Question 12 is 4 marks)

23 Use your calculator to work out $\sqrt{\frac{\sin 25^\circ + \sin 40^\circ}{\cos 25^\circ - \cos 40^\circ}}$

(a) Write down all the figures on your calculator display.

.....
(2)

(b) Write your answer to part (a) correct to 2 decimal places.

.....
(1)

(Total for Question 23 is 3 marks)



Alex says,

“In 2017, more tablets were sold than desktop computers. This means the shop makes more profit from the sale of tablets than from the sale of desktop computers.”

(d) Is Alex correct?

You must justify your answer.

(1)

(Total for Question 12 is 7 marks)

13 A piece of wire is 240 cm long.

Peter cuts two 45 cm lengths off the wire.

He then cuts the rest of the wire into as many 40 cm lengths as possible.

Work out how many 40 cm lengths of wire Peter cuts.

(Total for Question 13 is 3 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)



12 Lucy uses a code to open a lock.

The code is a letter followed by a 2-digit number.

The letter is L or U.

The number is a prime number between 20 and 30

Write down all the possibilities for Lucy's code.

.....

.....

.....

(Total for Question 12 is 2 marks)

13 A machine fills bags with sweets.

There are 4275 sweets.

There are 28 sweets in each full bag.

The machine fills as many bags as possible.

How many sweets are left?

(Total for Question 13 is 3 marks)



9 (a) Work out the value of $\frac{300}{2 \times 5}$

.....
(1)

(b) Work out the value of $(6 - 2.5)(8 + 4)$

.....
(1)

(c) Write down the reciprocal of 20

.....
(1)

(Total for Question 9 is 3 marks)

6 Here is a list of whole numbers from 21 to 30

21 22 23 24 25 26 27 28 29 30

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

.....
(1)

(b) From the list, write down a multiple of 8

.....
(1)

(Total for Question 6 is 2 marks)

7 A baker has three bags of flour, **A**, **B** and **C**.

Bag **A** and bag **B** contain the same amount of flour.

Bag **C** contains 940 g of flour.

In the three bags, there is a total of 2500 g of flour.

Work out the amount of flour in bag **A**.

..... g

(Total for Question 7 is 3 marks)



12 (a) Work out $\sqrt{\frac{13.82}{4.06}}$

Write down all the figures on your calculator display.

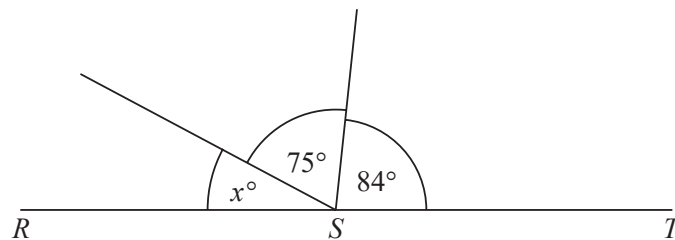
.....
(2)

(b) Give your answer to part (a) correct to 2 decimal places.

.....
(1)

(Total for Question 12 is 3 marks)

13



RST is a straight line.

(i) Work out the value of x .

.....
(2)

(ii) Give a reason for your answer.

.....
(1)

(Total for Question 13 is 3 marks)

- 9 Vadim has 56 clocks.
The clocks are only red, only blue or only black.

32 of the clocks are plastic.

5 of the 14 blue clocks are plastic.

8 of the 12 red clocks are **not** plastic.

Use this information to complete the two-way table.

	Red	Blue	Black	Total
Plastic				
Not plastic				
Total				

(Total for Question 9 is 3 marks)

- 10 Corina has £300 to spend on books.
Each book costs £4.85

Work out the greatest number of books Corina can buy.

(Total for Question 10 is 3 marks)

- 7 Simon buys some candles.
Each candle costs £2

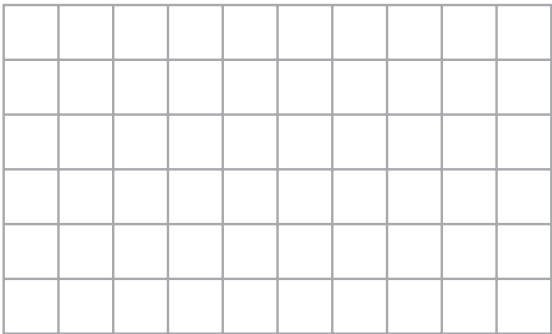
Simon pays with a £20 note.
He gets £6 change.

Work out the number of candles Simon buys.

.....
(Total for Question 7 is 3 marks)



6



On the grid, draw a quadrilateral with
no lines of symmetry
and rotational symmetry of order 2

(Total for Question 6 is 2 marks)

7 The table shows the total number of apples sold and the total number of oranges sold in a shop in each of three weeks.

	Week 1	Week 2	Week 3
Number of apples	86	75	92
Number of oranges	68	80	76

In total for the three weeks, more apples than oranges were sold.
How many more?

(Total for Question 7 is 3 marks)



- 8 Four students play a game.
The table shows the number of points each student has.

Student	Ali	Barbara	Calliope	Danesh
Number of points	143	121	45	19

Barbara has more points than Danesh.

- (a) How many more?

.....
(1)

- (b) Work out the mean number of points.

.....
(2)

(Total for Question 8 is 3 marks)



20 (a) Work out the value of $\frac{25 - \sqrt{43.87}}{6 + 2.1^2}$

Write down all the figures on your calculator display.

.....
(2)

(b) Work out the value of the reciprocal of 0.625

.....
(1)

(Total for Question 20 is 3 marks)



18 (a) Work out $\frac{9.8 + 6.8}{4.2 \times 2.1}$

Give your answer as a decimal.

Write down all the figures on your calculator display.

.....
(2)

(b) Write your answer to part (a) correct to 2 decimal places.

.....
(1)

(Total for Question 18 is 3 marks)



- 7 Miklos is swimming lengths of a swimming pool.
Each length of the pool is 25 m.

Miklos has swum 178 lengths of the pool.
He wants to swim a total distance of 8050 m.

Calculate how many more lengths Miklos needs to swim.

(Total for Question 7 is 3 marks)

- 8 Here are the first four terms of a number sequence.

97 91 85 79

- (a) Explain how to work out the next number of the sequence.

(1)

- (b) Work out the difference between the 5th term and the 7th term of the sequence.

(2)

- (c) Explain why 52 is **not** a number in this sequence.

(1)

(Total for Question 8 is 4 marks)



10 There are 24 cows and 36 sheep on a farm.

Write as a ratio the number of cows to the number of sheep.
Give your ratio in its simplest form.

.....
(Total for Question 10 is 2 marks)

11 (a) Work out $-12 \div -4$

.....
(1)

(b) Find the value of 2^5

.....
(1)

(c) Write **one** pair of brackets in this calculation so that the answer is correct.

$$30 \div 3 + 2 - 4 = 2$$

.....
(1)

(Total for Question 11 is 3 marks)



14 Work out 273×54

(Total for Question 14 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)



- 5 Find the number that is exactly halfway between -2 and 8

.....

(Total for Question 5 is 1 mark)

- 6 Jo uses beads to make bracelets.
For each bracelet she uses 5 red beads and 7 white beads.
- Jo has 52 red beads and 80 white beads.
- Work out the greatest number of bracelets Jo can make.
You must show all your working.

.....

(Total for Question 6 is 3 marks)



11 A total of 700 tickets were on sale for a football match.

452 of the tickets were sold.

(a) How many tickets were **not** sold?

.....
(2)

For a different football match,

297 tickets were sold for £9.50 each.

399 tickets were sold for £19.50 each.

(b) Work out an estimate for the total amount of money paid for these tickets.
You must show all your working.

£.....
(3)

(c) Is your answer to part (b) an underestimate or an overestimate?
Give a reason for your answer.

.....
.....
.....
(1)

(Total for Question 11 is 6 marks)



SUB-TOPIC N1b

FACTORS, MULTIPLES & PRIMES

Sub-topic N1b · 59 questions · 112 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)



- 4 Here is a list of four fractions.

$$\frac{4}{16}$$

$$\frac{2}{8}$$

$$\frac{15}{60}$$

$$\frac{3}{9}$$

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 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 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 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 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 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 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 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)



- 5 Here is a list of numbers.

3 4 9 18 27 30 36

From the numbers in the list, write down a cube number.

(Total for Question 5 is 1 mark)

- 6 Liz is watching a film at the cinema.

The film started at 14 30

The film is 105 minutes long.

When the film ends, Liz takes 20 minutes to get to the bus stop.

A bus leaves the bus stop at 16 45

Does Liz get to the bus stop in time to get this bus?

You must show all your working.

(Total for Question 6 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 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.

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

.....

.....
(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 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.

-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 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 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** 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 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 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** 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)



- 5 Write down two factors of 32

..... , ...

(Total for Question 5 is 1 mark)

- 6 Abi has some £10 notes and some £20 notes.
The notes have a total value of £400

Abi has six £20 notes.

Work out the number of £10 notes Abi has.

.....

(Total for Question 6 is 3 marks)



On the same day, in another British town, the maximum temperature was 16.4°C .

(c) Estimate the number of hours of sunshine in this town on this day.

..... hours
(2)

A weatherman says,

“Temperatures are higher on days when there is more sunshine.”

(d) Does the scatter graph support what the weatherman says?
Give a reason for your answer.

.....
.....
(1)

(Total for Question 21 is 5 marks)

22 Express 56 as the product of its prime factors.

.....
(Total for Question 22 is 2 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)



6 Annie and Lily share some money in the ratio 4 : 3

(a) What fraction of the money does Lily get?

.....
(1)

Rosie and Dan share some sweets.

Dan gets $\frac{1}{4}$ of the sweets.

(b) Write down the ratio of the number of sweets Rosie gets to the number of sweets Dan gets.

.....
(1)

(Total for Question 6 is 2 marks)

7 Steve says,

“There are more prime numbers between 20 and 30
than there are between 10 and 20”

Is Steve right?

You must show how you get your answer.

(Total for Question 7 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 3758 correct to the nearest 1000

.....

(Total for Question 1 is 1 mark)

- 2** Simplify $y + 3y - 2y$

.....

(Total for Question 2 is 1 mark)

- 3** Write down all the factors of 18

.....

(Total for Question 3 is 2 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 Write down an example to show that each of the following two statements is **not** correct.

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

.....
(1)

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

.....
(1)

(Total for Question 11 is 2 marks)



5 Here are four digits.

7 3 4 9

(a) Use three of these digits to write down the largest possible 3-digit number.

.....
(1)

(b) Here are four different digits.

8 2 1 6

Put one of these digits in each box to give the smallest possible answer to the sum.
You must use each digit only once.

		+		
-------------	-------------	---	-------------	-------------

(1)

(Total for Question 5 is 2 marks)

6 Write down all the factors of 30

.....
(Total for Question 6 is 2 marks)



9 $g = 9$
 $h = 4$

Work out the value of $2g + 3h$

.....
(Total for Question 9 is 2 marks)

10 Write down two prime numbers that have a sum of 32

..... , ...
(Total for Question 10 is 2 marks)



24 Find the highest common factor (HCF) of 72 and 90

(Total for Question 24 is 2 marks)



6 Here is a list of whole numbers from 21 to 30

21 22 23 24 25 26 27 28 29 30

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

.....
(1)

(b) From the list, write down a multiple of 8

.....
(1)

(Total for Question 6 is 2 marks)

7 A baker has three bags of flour, **A**, **B** and **C**.

Bag **A** and bag **B** contain the same amount of flour.

Bag **C** contains 940 g of flour.

In the three bags, there is a total of 2500 g of flour.

Work out the amount of flour in bag **A**.

..... g

(Total for Question 7 is 3 marks)



23 Solve $7x - 27 < 8$

(Total for Question 23 is 2 marks)

24 Write 124 as a product of its prime factors.

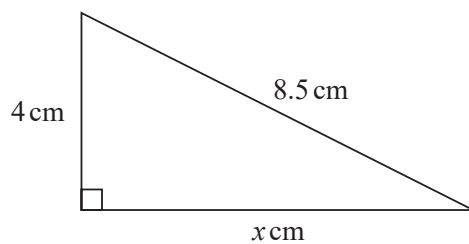
(Total for Question 24 is 2 marks)



21 Work out the lowest common multiple (LCM) of 24 and 56

(Total for Question 21 is 2 marks)

22 Here is a right-angled triangle.



Work out the value of x .

$x =$

(Total for Question 22 is 2 marks)

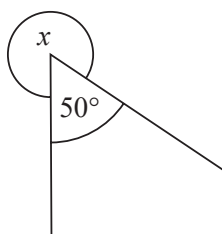


7 Write down **three** different factors of 20

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

(Total for Question 7 is 2 marks)

8



(a) Work out the size of the angle marked x .

(2)

A student says that an angle of 50° is an obtuse angle.

The student is wrong.

(b) Explain why.

(1)

(Total for Question 8 is 3 marks)



21 Write 60 as a product of its prime factors.

(Total for Question 21 is 2 marks)

22 There are 48 counters in a bag.
There are only red counters and blue counters in the bag.

$$\text{number of red counters} : \text{number of blue counters} = 1 : 2$$

Helen has to work out how many red counters are in the bag.

She says,

“There are 24 red counters in the bag because 1 is half of 2 and 24 is half of 48”

Is Helen correct?

You must give a reason for your answer.

(Total for Question 22 is 1 mark)



- 11 There are 8 episodes in a TV series.
Each episode lasts 45 minutes.

Work out the total time that the 8 episodes last.
Give your answer in hours.

..... hours

(Total for Question 11 is 2 marks)

- 12 Write down three prime numbers that are between 20 and 40

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

(Total for Question 12 is 2 marks)



21 (a) Factorise $6x - 15$

.....
(1)

(b) Factorise $m^2 + 5m$

.....
(1)

(Total for Question 21 is 2 marks)

22 Find the highest common factor (HCF) of 63 and 105

.....
(Total for Question 22 is 2 marks)



8 Junaid says that 20 is a square number because $10^2 = 20$

- (a) Is Junaid correct?
Give a reason for your answer.

(1)

Chloe says,

“When you divide an even number by an even number the answer is always an even number.”

- (b) Write down an example to show that Chloe is wrong.

(1)

(Total for Question 8 is 2 marks)

9 There are 90 red counters and 150 yellow counters in a bag.

Write down the ratio of the number of red counters to the number of yellow counters.
Give your ratio in its simplest form.

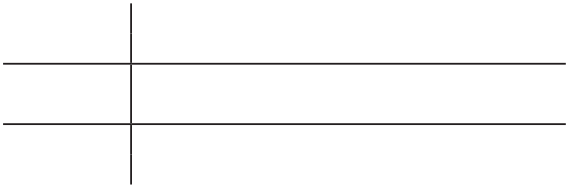
(Total for Question 9 is 2 marks)



18 Here are the heights, in cm, of 12 children.

146 135 142 150 138 149
 152 146 137 154 147 144

Show this information in a stem and leaf diagram.



Key:

(Total for Question 18 is 3 marks)

19 Find the highest common factor (HCF) of 54 and 120

(Total for Question 19 is 2 marks)



- 7 The probability that a new fridge has a fault is 0.015

What is the probability that a new fridge does **not** have a fault?

.....
(Total for Question 7 is 1 mark)

- 8 Here is a list of numbers.

21 22 23 24 25 26 27 28 29

- (a) From the numbers in the list, write down a square number.

.....
(1)

- (b) From the numbers in the list, write down a number that is a multiple of **both** 4 and 6

.....
(1)

- (c) Write down all the prime numbers in the list.

.....
(1)

(Total for Question 8 is 3 marks)



- 5 (a) Change 35 cm to mm.

..... mm
(1)

- (b) Change 7700 millilitres to litres.

..... litres
(1)

- (c) Change 0.32 kilograms to grams.

..... grams
(1)

(Total for Question 5 is 3 marks)

- 6 Margaret is thinking of a number.

She says,

“My number is odd. It is a factor of 36 and a multiple of 3”

There are two possible numbers Margaret can be thinking of.

Write down these two numbers.

.....

(Total for Question 6 is 3 marks)



9 Emily drives 186 miles in 3 hours.

(a) What is her average speed?

..... mph
(2)

Sarah drives at an average speed of 58 mph for 4 hours.

(b) How many miles does Sarah drive?

..... miles
(2)

(Total for Question 9 is 4 marks)

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

.....
(2)

Catherine says,

“2 is the only even prime number.”

(b) Is Catherine right?

You must give a reason for your answer.

.....
.....
(1)

(Total for Question 10 is 3 marks)



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

.....
(2)

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

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

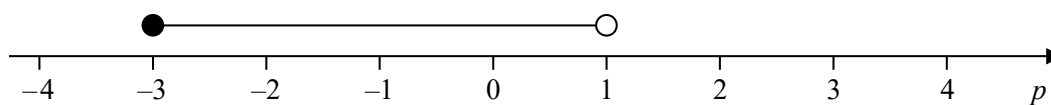
(b) Write down the highest common factor (HCF) of A and B .

.....
(1)

(Total for Question 21 is 3 marks)



19 Here is a number line.



Write down the inequality shown on the number line.

(Total for Question 19 is 2 marks)

20 Find the Lowest Common Multiple (LCM) of 108 and 120

(Total for Question 20 is 3 marks)



19 Write 500 as a product of powers of its prime factors.

(Total for Question 19 is 3 marks)



24 A and B are numbers such that

$$A = 2^2 \times 3^4 \times 7$$

$$B = 3^2 \times 7^2$$

(a) Find the highest common factor (HCF) of A and B .

.....
(1)

(b) Find the lowest common multiple (LCM) of A and B .

.....
(2)

(Total for Question 24 is 3 marks)



24 Ali buys packs of balloons and boxes of pencils.

There are 30 balloons in each pack.

There are 24 pencils in each box.

Ali buys exactly the same number of balloons and pencils.

Work out how many packs of balloons and how many boxes of pencils she could have bought.

You must show all your working.

..... packs of balloons

..... boxes of pencils

(Total for Question 24 is 3 marks)

25 A company orders a large number of plates from a factory.

It would take 30 hours to make all the plates using 4 machines.

How many machines are needed to make all the plates in 6 hours?

.....
(Total for Question 25 is 2 marks)



21 (a) Write 90 as a product of its prime factors.

.....
(2)

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

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

(b) Write down the lowest common multiple (LCM) of A and B .

.....
(1)

(Total for Question 21 is 3 marks)



8 Aisha was born in 1993

There was an election in the year of Aisha's 18th birthday.

There is an election every 5 years.

Will there be an election in 2030?

You must show how you get your answer.

(Total for Question 8 is 3 marks)



21 (a) Write 84 as a product of its prime factors.

.....
(2)

(b) Find the lowest common multiple (LCM) of 60 and 84

.....
(2)

.....
(Total for Question 21 is 4 marks)



22 (a) Find the Highest Common Factor (HCF) of 60 and 84

.....
(2)

(b) Find the Lowest Common Multiple (LCM) of 24 and 40

.....
(2)

(Total for Question 22 is 4 marks)



20 (a) Write 156 as a product of its prime factors.

.....
(2)

(b) Find the highest common factor (HCF) of 156 and 130

.....
(2)

.....
(Total for Question 20 is 4 marks)



16 (a) Write 126 as a product of its prime factors.

.....
(2)

(b) Find the highest common factor (HCF) of 126 and 210

.....
(2)

(Total for Question 16 is 4 marks)



20 (a) Express 250 as a product of its prime factors.

.....
(2)

(b) Find the lowest common multiple (LCM) of 30 and 25

.....
(2)

(Total for Question 20 is 4 marks)



SUB-TOPIC N1c

COUNTING & SYSTEMATIC LISTING

Sub-topic N1c · 7 questions · 14 marks · lowest tariff first



- 7 Priti is going to have a meal.
She can choose one starter and one main course from the menu.

Menu	
Starter	Main Course
Salad	Pasta
Fish	Rice
Melon	Burger

Write down all the possible combinations Priti can choose.

.....

.....

.....

(Total for Question 7 is 2 marks)

- 8 Joanne wants to buy a dishwasher.

The dishwasher costs £372

Joanne will pay a deposit of £36

She will then pay the rest of the cost in 4 equal monthly payments.

How much is each monthly payment?

£.....

(Total for Question 8 is 2 marks)



7 Mohsin, Yusuf and Luke are going to play a game.
At the end of the game, one of them will be in First place, one of them will be in Second place and one of them will be in Third place.

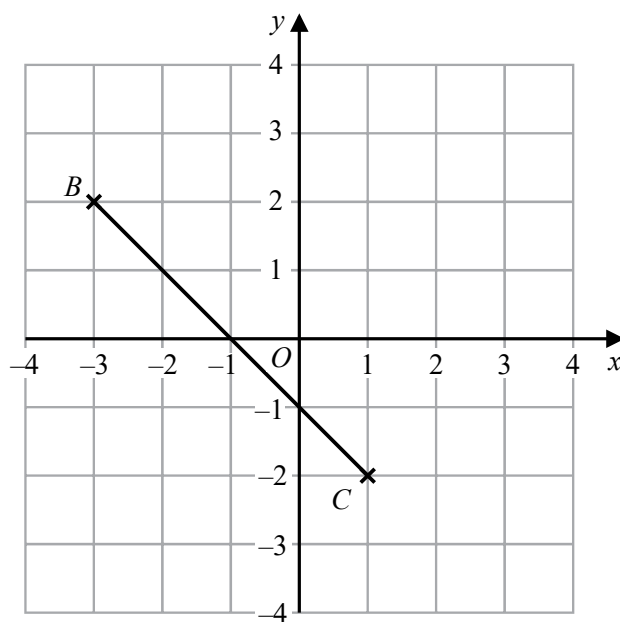
Use the table below to list all the possible outcomes of the game.

First place	Second place	Third place

(Total for Question 7 is 2 marks)



10



- (a) Plot the point with coordinates (3, 2)
Label this point *A*.

(1)

- (b) Write down the coordinates of the midpoint of *BC*.

(....., ...)

(1)

(Total for Question 10 is 2 marks)

- 11 Mason throws a coin 3 times.
The outcome of each throw is either Heads or Tails.
List all the possible outcomes of the 3 throws.

.....

.....

.....

(Total for Question 11 is 2 marks)



12 Lucy uses a code to open a lock.

The code is a letter followed by a 2-digit number.

The letter is L or U.

The number is a prime number between 20 and 30

Write down all the possibilities for Lucy's code.

.....

.....

.....

(Total for Question 12 is 2 marks)

13 A machine fills bags with sweets.

There are 4275 sweets.

There are 28 sweets in each full bag.

The machine fills as many bags as possible.

How many sweets are left?

.....

(Total for Question 13 is 3 marks)



- 9 Harris is buying a shirt and a tie.
He has a choice of three colours of shirt and a choice of three styles of tie.

Shirt	Tie
White (W)	Plain (P)
Blue (B)	Striped (S)
Grey (G)	Checked (C)

Harris is going to choose one shirt and one tie.
List all the possible combinations Harris can choose.

(Total for Question 9 is 2 marks)

- 10 There are 24 red counters and 40 blue counters in a bag.
Write down the ratio of the number of red counters to the number of blue counters in the bag.
Give your ratio in its simplest form.

(Total for Question 10 is 2 marks)

- 10 Anita throws a coin 3 times.
Each time the coin can land on heads (H) or tails (T).

List all the possible outcomes.

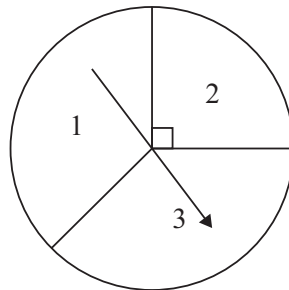
.....

.....

.....

(Total for Question 10 is 2 marks)

- 11 Majid has a spinner.



Majid is going to spin the arrow.
The arrow can land on 1 or on 2 or on 3

Majid says,

“The probability that the arrow will land on 2 is $\frac{1}{3}$ because the spinner has three sections.”

Is Majid correct?
You must give a reason for your answer.

.....

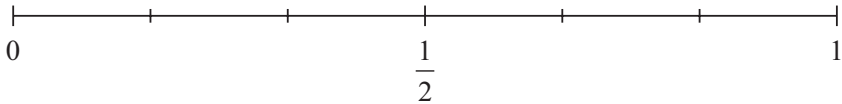
.....

.....

(Total for Question 11 is 1 mark)

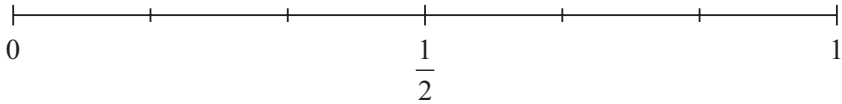
7 Tom has a fair ordinary dice.
He rolls the dice once.

(a) On the probability scale below, mark with a cross (×) the probability that Tom gets the number 2



(1)

(b) On the probability scale below, mark with a cross (×) the probability that Tom gets a number greater than 4



(1)

(Total for Question 7 is 2 marks)

8 Here is a menu.

Drink	Cake
Coffee (C)	Brownie (B)
Tea (T)	Flapjack (F)
Lemonade (L)	Scone (S)

Asma can choose one drink and one cake.
Write down all the possible combinations Asma can choose.

.....

.....

.....

(Total for Question 8 is 2 marks)

SUB-TOPIC N1d

SETS & VENN DIAGRAMS (SET NOTATION)

Sub-topic N1d · 3 questions · 8 marks · lowest tariff first

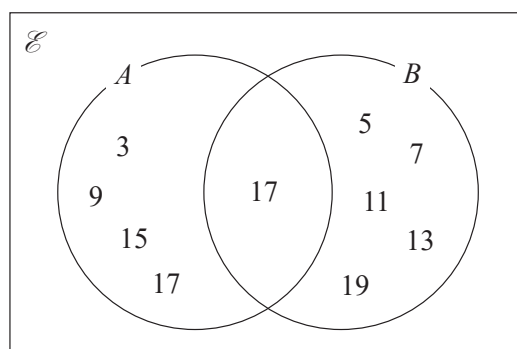


23 $\mathcal{E} = \{\text{odd numbers between 0 and 20}\}$

$$A = \{3, 9, 15, 17\}$$

$$B = \{5, 7, 11, 13, 17, 19\}$$

Tom was asked to draw a Venn diagram for this information.
Here is his answer.



Write down two things Tom should do to make his answer fully correct.

1.....

.....

2.....

.....

(Total for Question 23 is 2 marks)



18 $A = \{\text{multiples of 5 between 14 and 26}\}$

$B = \{\text{odd numbers between 14 and 26}\}$

(a) List the members of $A \cup B$

(2)

(b) Describe the members of $A \cap B$

(1)

(Total for Question 18 is 3 marks)

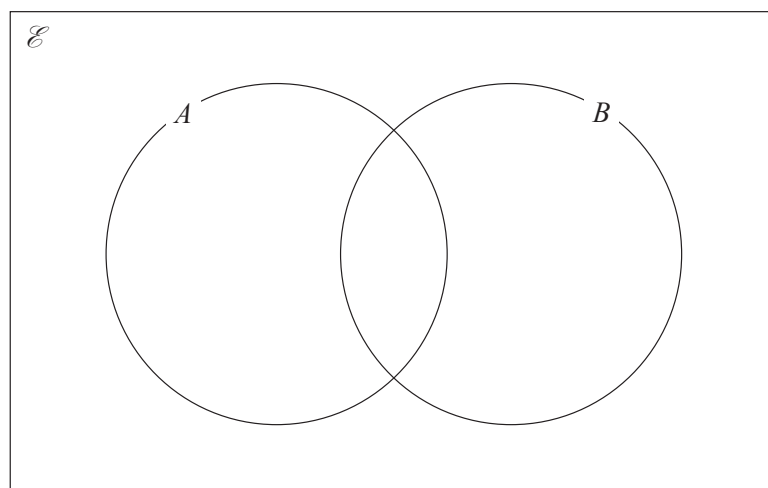


21 $\mathcal{E} = \{\text{even numbers less than 19}\}$

$$A = \{6, 12, 18\}$$

$$B = \{2, 6, 14, 18\}$$

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)



MARK SCHEMES

official mark schemes, in the same order as the questions



Paper 1MA1: 1F				
Question	Working	Answer	Mark	Notes
1 (a)		3.65	B1	cao
(b)		2700	B1	cao
2		72	B1	cao
3		42	B1	cao
4		-9 , 2	B1	cao accept either order.
5		47	B1	cao
6		$L = 5a + 3$	M1 M1 A1	for expression $a - 1 + a + a + a + a + 4$ or $L =$ an expression in a for $5a + 3$ or $L = a + a + a - 1 + a + a + 4$ oe for $L = 5a + 3$
7 (a)		(6 , - 2)	B1	cao
(b) i		Correct point	B1	cao for point marked at (2, 9)
(b) ii		Yes with reasoning	B1	Yes with correct substitution $4 \times 2 + 1 = 9$ or by drawing correct line on diagram
(c)		Correct line	B1	for drawing line $x = -2$ cao



Paper 1MA1: 1F				
Question	Working	Answer	Mark	Notes
8		4×8 rectangle drawn	M1 A1	Draws a rectangle with side lengths in the ratio 2:1 or lists possible dimensions in the ratio 2:1 or gives two numbers which multiply to 32 for correct diagram on grid
9		Identifies error in method	C1	Explanation of error eg she should have multiplied 348 by 2 not divided
10 (a)		Jake with reason	C1	Explanation referring to spread eg range or Jakes figures are closer together or highest and lowest values for both.
(b)		Reason	C1	Reason eg stem not used or it should be 26
11 (a)	$30 \div 8$	4	P1 A1	for $30 \div 8$ or 3.75 or 3 or counting up 8s towards 30 to at least 3 lots of 8 or $4 \times 8 (=32)$ oe cao
(b)		No with reason	C1	No with $32 \div 8$ or ft from (a)
12 (a)	12 7 19 18 8 26 30 15 45	Correct table	B3 (B2) (B1)	Fully correct table for 5, 6, 7 or 8 figures correct for given values entered correctly in the table or for a correct row or column)
(b)		$\frac{8}{45}$	B1	for $\frac{8}{45}$ or ft from values in table eg $\frac{8}{45}$



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	Allow alternative correct statements, eg $[7 \times (2 + 3)] = 35$
(b)	8	B1	cao	
(c)	$7 \times (2 + 3) = 35$	B1	for correct placement of brackets	

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: IMA1/1F				
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 $4 \times 150 (=600)$ or $4 \times 250 (=1000)$ or $150 + 250 (=400)$ for an appropriate step with the hotel price eg $7 \times 50 (=350)$ or $4 \times 50 (=200)$ for combining at least two "costs" for 4 people for 7 nights eg $4 \times 150 + 4 \times 250 (=1600)$ or $4 \times 150 + 7 \times 4 \times 50 (=2000)$ cao	Can be embedded eg $4 \times 7 \times 150$ Can be $4 \times 7 \times 50$ Must be correct process for two costs eg not $4 \times 150 \times 7$ but may be 2 correct costs and one incorrect

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. $2 \times 2.75 (= 5.5)$ 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. $2 \times 2.75 + 2.9 + 1.5 (= 9.90)$ or $10 - (2 \times 2.75 + 2.9) (= 1.60)$ OR $2 \times 2.75 + 2.9 (= 8.40)$ 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	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	Shapes can come from a combination of shapes, but must sum to 12. Any orientation. 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
(b)		C1	for showing diagrams that represent 12 pictorially	
(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)	
		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: 1MA1/2F				
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 $14 \times 15 (= 210)$ or $14 \times 15 \times 6.50 (= 1365)$ or $1274 \div 6.50 (= 196)$ or $14 \times 15 \times 6.50 - 1274 (= 91)$ for a complete process eg $(14 \times 15 \times 6.50 - 1274) \div 6.50$ or $14 \times 15 - (1274 \div 6.50)$ 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 $\div 3$	B1	for $\div 3$ or - 20 or $\times \frac{1}{3}$ or + -20	

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 $\frac{1}{2}$	B1	Cross (or mark) at $\frac{1}{2}$	Accept any mark near to $\frac{1}{2}$ 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: 1MA1/3F				
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	
6 (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 $200 \div 25 (=8)$ or to find the cost of each tile, eg $9.75 \div 25 (=0.39)$ for complete process, eg "8" $\times 9.75$, "0.39" $\times 200$ cao	Could work in £ or in pence for P marks

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 Accept incorrect spelling provided intention is clear
(b)	Cylinder	B1	for cylinder	
7	14	M1 A1	for $42 \div 3$ 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: 1MA1/2F				
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 $35 \div 5 (=7)$ and $20 \div 5 (=4)$ 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 $2500 \div 2 (=1250)$ and $940 \div 2 (=470)$ for "1560" $\div 2$ or "1250" – "470" cao	

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” $\div 5$ 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 $2 + (3 \times 4)$ Because you always do multiplication or division first Not acceptable examples Because the answer is wrong It is $2 + (3 \times 4) = 15$ 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: 1MA1/1F				
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 " $\div 2 (= 7)$ 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	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	Allow reasonable hand-drawn attempts
	(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)	

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	15tw	B1	for 15tw	May be seen in different order
6	60	P3 (P2) (P1) A1	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 for process to find the total cost of all theme park tickets, eg $33 + 2 \times 24.5(0) (= 33 + 49 = 82)$ or for process to find the total cost of all meals, eg $15 + 2 \times 10 (= 15 + 20 = 35)$ or for process to find the total cost for the children, eg $2 \times 24.5(0) + 2 \times 10 (= 49 + 20 = 69)$ or for process to find total costs with just one child, eg $23 + 33 + 24.5(0) + 15 + 10 (= 105.5(0))$ for a start to a correct process, considering at least 2 costs eg $33 + 24.5(0) (= 57.5(0))$ or $2 \times 24.5(0) (= 49)$ or for start to a process to find money left, eg $200 - 23 (= 177)$ or $200 - 33 (= 167)$	All processes may be seen as part of subtractions to find money left Additions may include other elements for process marks, eg. $23 + 33 + 2 \times 24.5(0)$ May be any start to a correct process

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 P1 B1 A1	for process to work with the number of miles, eg $12845 - 12468 (= 377)$ or $12845 \times 13 (= 166985)$ or $12468 \times 13 (= 162084)$ for process to find the cost, eg $377 \times 13 (= 4901)$ or $166985 - 162084 (= 4901)$ (indep) for converting from pence to pounds, eg $4901 \div 100$ or $13 \div 100$ or miles divided by 100 eg $377 \div 100 (= 3.77)$ or $12845 \div 100 (= 128.45)$ and $12468 \div 100 (= 124.68)$ 49 or 49.01	This mark can be awarded at any stage in the process
8	315	M1 A1	for 45×7 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 P1 A1	for a process to work out the value of the large bars eg $208 \div 4 (=52 \text{ or } 5200)$ for a process to work out the value of the small bars eg $(208 - "52") \times 60$ or $(1 - \frac{1}{4}) \times 208 \times 60 (=9360 \text{ or } 93.6(0))$ or for 145.6 for 145.60 cao (must be correct money notation)	units may be ignored for the process marks work could be in pence or £
8 (a)	102	B1	cao	
(b)	82	M1 A1	for a method of extracting the correct 4 numbers from the table, adding all 4 numbers and then dividing by 4 eg $(143+121+45+19) \div 4$ or "328" $\div 4$ cao	

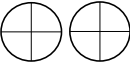


Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
1	0.38	B1	cao	
2	$\frac{3}{10}$	B1	or any equivalent fraction	3 : 10 or 0.3 or 30% get no marks
3	0.5	B1	cao	
4	−4	B1	cao	
5	5	B1	cao	
6	Explanation	C1	for a correct explanation. Acceptable examples he has labelled the radius incorrectly 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	for at least three from 1, 2, 4, 5, 10, 20	No incorrect factors No repeats (within the chosen 3) Ignore extra correct factors. Accept factor pairs, eg. 1×20 as two factors
		(B1)	for two correct factors from 1, 2, 4, 5, 10, 20 and no more than one incorrect factor)	



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	Accept 60% or an equivalent fraction eg $\frac{6}{10}$
(b)	certain	C1	oe	
(c)	0.6	B1	oe	
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	6	B1	cao	
2	31	B1	cao	
3	12a	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 $3 \times 1000 (= 3000)$ or $700 \div 1000 (= 0.7)$ 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 $700 \div 1000$ 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: 1MA1/1F				
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 $4 \times 1.30 (= 5.2(0))$ or $10 - 1.80 (= 8.2(0))$ for $10 - 1.80 - "5.20" (= 3)$ oe for $"3" \div 2$ cao SCB2 for answer (£)2.4(0)	Working could be in pence Condone answer £1.5(0)p



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	eg 11 quarter squares drawn separately 3 quarters may be seen as one half square and one quarter square 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 $4\frac{1}{2}$ squares drawn for May gets P2 18 must be seen for full marks
(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	
(c)	18	P1	for process to find houses sold in February = $4 + 4 + 1 (= 9)$ or March = $4 + 4 + 4 (= 12)$ or $60 - ((\text{Jan} + \text{Feb} + \text{Mar}) + 11)$	
		P1	for a complete process, eg. $60 - ((\text{answer to part (a)}) + "9" + "12" + 11)$ or $60 - (2\frac{1}{2} + 2\frac{1}{4} + 3) \times 4 - 11$	
		A1	cao	
7 (a)	8.7	B1	for answer in the range 8.5 to 8.9	Allow free hand drawing
(b)	67	B1	for answer in the range 65 to 69	
(c)	6-sided shape	B1	for a 6-sided shape	

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	Must include correct units
		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	
7 (a)	Bus	B1	cao	
(b)	5	B1	cao	

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 $50 \times 10 - "480"$ cao SCB1 for answer 250 or -250 if P0 scored.	P1P1 for $500 - 450 - 30$ may be seen in stages
7	(a) 9.5 (b) acute (c) 32	B1 C1 B1	for answer in the range 9.3 to 9.7 for acute for answer in the range 30 to 34	Accept answer on the diagram Accept interior angle Do not accept co-interior angle Accept answer on the diagram
8	(a) (3, 1) (b) B at (3, - 4) (c) (0, 2)	B1 B1 B1	cao cao cao	Accept a cross without label as long as unambiguous. Accept letter B or dot in place of cross.

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 $52 \div 5 (= 10(.4))$ or $80 \div 7 (= 11(.4..))$ for process to find greatest number of bracelets for both colours, eg $52 \div 5 (= 10(.4))$ and $80 \div 7 (= 11(.4..))$ 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 $(14 + 10 + 10 + 13 + 15 + 9 + 15 + 10) \div 8$ or $96 \div 8$ 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 $\frac{1}{4}$	B1	for cross (or mark) at $\frac{1}{4}$	Accept any mark near to $\frac{1}{4}$ if the intention is clear; do not accept if additional marks are shown

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	Allow 88 – 92° for the right angle
	(b) Drawn	B1	for a right-angled triangle drawn	

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 " $\div 3$ or $(76 - 13) \div 3 (= x)$ 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 $330 \div 55$ cao	Build up methods are allowed Condone one error in build up method $55 \times 6 = 330, 330$ or 55 on answer line scores M1A0 ignore use of £ eg £6
8 (a)	6	B1	cao	



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 $6 \times 20 (= 120)$ 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
11 (a)		29	B1	answer in the range 29 to 30
			M1	for changing 6ft 3 inches to inches e.g. $6 \times 12 + 3 (= 75)$ or changing 1ft to 30 cm
			M1	for a method to convert to cm, e.g. $25 \rightarrow 63$ then $\times 3$, $6 \times 30 + \frac{1}{4} \times 30$
			A1	for answer in the range 186 to 195 or ft from correct use of graph
12		0.0733(03...)	M1 A1	for correct numerator (3.4496.....) or correct denominator (47.0596) or 0.073 for 0.0733(03.....)
13 (a)		Rotation	B2	for a fully correct rotation at $(-4,-1)$, $(-3,-1)$, $(-4,-4)$, $(-1,-2)$
			[B1	for the quadrilateral in correct orientation and size or rotated 90° anticlockwise about the origin]
			B1	for reflection
			B1	for y-axis (or $x=0$)
(b)		Reflection in the y-axis		[A combination of transformations scores 0 marks]

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 $(112 \times 3 =) 336$ (and 346) or $112 + 112 + 112 + 10 = 346$ or $346 \div 3 = 115(.3..)$ (and 112) or $346 \div 112 = 3.089..$ 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 $32 \div 4 (= 8)$ or $32 \times 5 (= 160)$ or complete method eg $32 \div 4 \times 5$ oe $(= 40)$ cao
5 (a)		1 : 3	B1	oe
(b)		42	M1 A1	ft $56 \div 4 (= 14)$ or complete method to find number of grey tiles eg $56 - (56 \div 4)$, $56 \div 4 \times 3$ oe $(= 42)$ for 42 or ft



Paper: 1MA1/3F				
Question	Working	Answer	Mark	Notes
6 (a)		Reason	C1	reason, eg must order numbers first
(b)		10	M1 A1	for $22 - 12$ or $12 - 22$ or 12 to 22 cao
(c)		16	M1 A1	for adding the numbers and dividing by 7 cao
7		SP, SR, SB, FP, FR, FB MP, MR, MB	B2 (B1)	all 9 combinations given with no extras or repeats at least 6 correct combinations given, condone repeats and incorrect combinations
8		84	M1 A1	for $(372 - 36) \div 4$ cao
9		No (supported)	P1 P1 C1	for finding a time difference e.g. length of day ($=7$ h or 420 min) or adding at least two of the five times on to 9 am or adding all the room times given ($= 5$ h 55 min or 355 min) or adding all five times given ($=7$ h 10 min or 430 min) for a complete process to inform final decision eg finds length of day ($= 7$ h) and total of all five times ($=7$ h 10 min) or starts at 9am and adds on all five times to find finishing time ($= 4.10$ pm) NO supported by correct values eg 4.10 pm or 7 h and 7 h 10 min or 420 min and 430 min



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

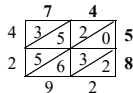


Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
1	0.9	B1	cao	Accept with trailing 0s eg 0.90
2	30	B1	cao	Accept 30.0
3	2500	B1	cao	
4	(a)(i) 30 (ii) Explanation (b) 65	B1 C1 B1	cao for explanation, eg increase by 7, add 7, states $7n - 5$ cao	
5	(a) 974 (b) 16,28 or 18,26	B1 B1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



Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
13	D, F, A	C2 (C1)	for all 3 correct for 1 or 2 correct)	
14 (a)	6 4799 7 0015667 8 0011247 9 14	B2 (B1) B1	for correct ordered stem and leaf for fully correct unordered or ordered with one error or omission) (indep) for key (units not required but must be correct if stated) eg $6 \mid 4 = 64$ (marks)	
(b)	Explanation	C1 C1	for identifying "6" students failed (ft their diagram) OR for $20 \div 4 (= 5)$ for comparing $\frac{1}{4}$ with $\frac{6}{20}$ or $\frac{3}{10}$ (ft their diagram) OR for comparing "6" with 5	Explanation does not need to state that Omar is wrong, but just needs to provide two comparable values (that are not the same) unless ft values show that Omar is not wrong in which case a statement is needed.
15 (a)	Incorrect order of operation	C1	for identifying an incorrect order of operation, eg should be $12 - 8$ or "should multiply first"	Showing that $12 - 2 \times 4$ is 4 (and not 40) is insufficient for this mark; the explanation should focus on what Jenny has done wrong.
(b)	Statement	C1	for stating that the range is the difference between the greatest and least values, or stating that he didn't put numbers in order	Stating the correct calculation for the range $(8 - 1)$ or stating the (correct) range as 7 is sufficient for this 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 $\frac{1}{2}$ 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 A1	for 188 or 0.06 or 194 or 1.94 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									
11	4292	M1	for complete method with relative place value correct including addition of all the appropriate elements of the calculation	Working 592 <u>3700</u> 4292  <table border="1" data-bbox="1080 1081 1254 1146"><tr><td></td><td>70</td><td>4</td></tr><tr><td>50</td><td>3500</td><td>200</td></tr><tr><td>8</td><td>560</td><td>32</td></tr></table> 3500 + 560 + 200 + 32 = 4292		70	4	50	3500	200	8	560	32
	70	4											
50	3500	200											
8	560	32											
		A1	cao										

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
8	(a) $7ab$	B1	for $7ab$	
	(b) y^3	B1	cao	
	(c) $\frac{e}{f}$	M1	for a correct first step, eg. numerator of $e^3 \times f$ or denominator of $e^2 \times f^2$ OR $e \div f$ or $e \times f^{-1}$ OR relevant crossings out for all the e 's and all the f 's	
		A1	for $\frac{e}{f}$ or ef^{-1}	
9	(a)(i) 24	B1	cao	Fully correct diagram with no method shown gets all 3 marks SC: B2 for 4 full circles for Wed and half a circle for Thursday SC: B1 for either Wed correct or for Thurs correct in the diagram if M0 scored
	(ii) 18	B1	cao	
	(b) Diagram	M1	for $36 \div 9$ or for using ratio 1 : 8 or setting up $w + 8w (=36)$	
		A1	for 4 and 32	
		C1	for correct diagram or ft (dep on M1) for drawing "4" and "32"	
10	$14 < 21$ $4+7 = 103 - 92$ $2^2 = 2 \times 2$ $-3 > -5$	B2	for all 4 correct	
		(B1	for 2 or 3 correct)	

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
9	No with correct figures	P1 P1 A1	for $1.20 + 0.70 + 2.30 + 2.30 (= 6.5(0))$ or for adding 3 correct costs or for 2 correct costs plus change or for 10 – 2 correct costs for a complete correct method, eg $10 - "6.50"$ or $10 - 1.20 - 0.70 - 2.30 - 2.30 (= 3.50)$ or $1.20 + 0.70 + 2.30 + 2.30 + 3.30 (= 9.80)$ for No with correct figures, eg 3.5(0) or 9.8(0)	Could work in £ or p for P marks Accept $2.30 + 2.30 (= 4.60)$ as 2 costs Accept absence of "0" in pence column
10	7	P1 A1	for process to find temperature on Wednesday, eg $5 - 10 + 3 (= -2)$ or $-10 + 3$ or $10 - 3$ for 7, accept -7	Be aware of correct use of a number line
11	(a) 16 (b) 12 (c) Pictogram	B1 M1 A1 C3 (C2) (C1)	cao for 22 or 10 or $(11 - 5) \times 2$ oe or 1.5×8 oe cao for Thursday = 8 drawn oe and Friday = 24 drawn oe (C2) for Thursday = 8 drawn oe or for Friday = 24 drawn oe or Thursday = 8 and Friday = 24 or for Thursday = 24 drawn oe and Friday = 8 drawn oe (C1) for $32 \div 4 (= 8)$ or $32 \div 4 \times 3 (= 24)$ or $32 \div 8$ or for a total of 32 drawn for Thursday and Friday)	If the scale is misread in part (a), allow ft marks in parts (b) and (c) for all marks provided consistently used. Some interpretation of shapes will be needed

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
8	(a) Completed bar chart	B2 (B1)	for a fully correct bar chart for one bar correct eg May plotted at 35 or June plotted at 20 OR May plotted at 20 and June plotted at 35)	Condone bars of unequal width Condone no gaps or inconsistent gaps
	(b) Explanation	C1	Acceptable examples Half a square is worth 2.5 (not 0.5) It goes to 17.5 Halfway between 15 and 20 is not 15.5 It is between 17 and 18 It could/would be 17 or 18 It goes up in 5s (not 1s) Not acceptable examples The bar is in the middle It could/would be 16 (or 19 or 15.6) You can't have half a cm of rain The answer would be a whole number	
9	(a) Shape drawn	B1	cao	Ignore any subsequent values
	(b) 9 and 11	B1	cao	
10	27	M1 A1	for $-15 + 42 (=27)$ oe cao	SC: B1 for answer of 26 if M0 scored

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
12 (a)	9	B1	cao	÷11 and -8 could be seen in a flow diagram Evidence could be provided by algebraic statement, numerical statements or by diagram
(b)	6	M1	starts to find input using inverse operations eg $154 \div 11 (= 14)$ or indicates $\div 11$ and $- 8$ or derivation of equation eg $(8 + n) \times 11 = 154$ or starting to solve for unknown eg $154 - 8 \times 11 (= 66)$	
		A1	cao	
13	53 19 67 139 17 26 16 59 70 45 83 198	B3 (B2) (B1)	for a fully correct table for at least 7 figures correctly placed for the 4, 5 or 6 values correctly placed	
14 (i)	>	B1	cao	
(ii)	=	B1	cao	
15 (a)	774	M1	for at least three of $0 \times 3 (= 0)$ or $1 \times 57 (= 57)$ or $2 \times 84 (= 168)$ or $3 \times 75 (= 225)$ or $4 \times 81 (= 324)$ or for $0 \times 3 + 1 \times 57 + 2 \times 84 + 3 \times 75 + 4 \times 81$	Note if 2 non zero products are seen award M1 Use of the figure 777 is enough for M1
(b)	3	A1 M1 A1	cao for method to begin to work with the median, eg $300 \div 2 (= 150)$ cao	Accept 301 in place of 300 NB mean = 2.58

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
20	4.643(069317)	M1 A1	for 192.6 or 8.934 or 21.558(09268) or answer of 4.64 or digits 4643... for 4.643(069317)	Answer must be given to at least 3 decimal places rounded or truncated Check first 3 decimal places only If given to 3 dp or better ignore subsequent rounding
21 (a)	positive	C1	cao	Ignore any description of a relationship and any reference to strength of correlation
(b)	lobf drawn	C1	for straight line passing between (140, 20) and (140, 22.5) and between (220, 30) and (220, 32.5)	
(c)	26.5 to 29.5	C1	for answer in range 26.5 – 29.5 or ft single line with positive gradient	



Paper: 1MA1/1F																
Question	Working	Answer	Mark	Notes												
23	21840 1638 23478	234.78	M1	for complete method with relative place value correct including addition of all the appropriate elements of the calculation e.g. two lines of 1 st method, internal numbers of grids, or complete structure shown of partitioning methods												
	546 20 16 24 15 12 18 478															
	<table><tr><td></td><td>500</td><td>40</td><td>6</td></tr><tr><td>40</td><td>20000</td><td>1600</td><td>240</td></tr><tr><td>3</td><td>1500</td><td>120</td><td>18</td></tr></table>					500	40	6	40	20000	1600	240	3	1500	120	18
					500	40	6									
	40				20000	1600	240									
3	1500	120	18													
20000 + 1600 + 240 + 1500 + 120 + 18 = 23478																
			A1	for digits 23478												
			A1	(ft dep M1) for correct placement of the decimal point into their final answer												
24		$x^2 + 6x = 1$	M1	writes the area using algebraic terms e.g. $(x + 3) \times (x + 3)$ or at least two correct area expressions, may be written on the diagram or x given as $\sqrt{10} - 3$												
			M1	expands and includes the given 10 e.g. $x^2 + 3x + 3x + 9 = 10$; condone one error in the four terms when expanding or $10 - 3\sqrt{10} - 3\sqrt{10} + 9 + 6\sqrt{10} - 18 (=1)$ condone 1 error in the 6 terms												
			A1	rearranges to give the given equation or shows surd expression simplifies to 1												

Paper: 1MA1/2F				
Question	Working	Answer	Mark	Notes
22		32.3	P1	for using Pythagoras to find length of third side of triangle, eg $7.5^2 - 6^2$ or $6^2 + x^2 = 7.5^2$
			P1	or uses trigonometry to find angle in triangle eg $\sin A = \frac{6}{7.5}$ or $\cos B = \frac{6}{7.5}$
			P1	(dep P1) for complete process to find length of third side of triangle eg $\sqrt{7.5^2 - 6^2}$ or $\sqrt{56.25 - 36}$ or $\sqrt{20.25}$ (=4.5)
			P1	or uses trigonometry to find base length of triangle eg $7.5 \times \cos "A"$ or $7.5 \times \sin "B"$ or $\frac{6}{\tan "A"}$
			P1	(dep P2) for $24 - 10 - "4.5"$ (=9.5)
			P1	(indep) for process to find angle CDA , eg $\tan CDA = \frac{6}{base}$ from right-angled triangle
			A1	for answer in the range 32.2 to 32.3
23 (a)		2.7560...	M1	for 1.0654(059...), 0.1402(633...), 7.5957(541...), 2.756 truncated or rounded to no less than 2dp
			A1	for 2.7560(....)
(b)		2.76	B1	for 2.76 ft from (a)



Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
13	3	P1	for a start to the process eg $240 - (2 \times 45) (= 150)$ oe or $(2 \times 45) + 40 (= 130)$ oe	Considering just one piece of 45 cm is not a misread but $(240 - 45) \div 40 (= 4.875)$ oe should be awarded P1 only
		P1	for complete process eg “150” $\div 40 (= 3.75)$ – can be implied by $40 + 40 + 40 = 120$ or “130” $+ 40 + 40 (= 210)$	
		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) $\times 3 \div 4 (= 750)$	
		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) $\div (3+7) (= 100)$	
		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: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
11	600 cm ³	M1	for a complete method to find the volume eg $4 \times 10 \times 15$	If extra steps are shown do not award this mark
		A1	for 600	Ignore incorrect or absent units for this mark
		B1	(indep) cm ³	Ignore incorrect or absent numerical answer for this mark
12	L23, U23, L29, U29	B2 (B1)	for all 4 outcomes with no extras or repeats for at least 2 correct outcomes out of at most 8 different outcomes or for indicating 23 and 29 are the only prime numbers between 20 and 30)	Pairs must be unambiguous and in the correct order of letter number
13	19	P1	for $4275 \div 28 (= 152.678\ldots)$ or 153 or a build up to at least $150 \times 28 (=4200)$	Division may be seen as a build up method
		P1	for “152” $\times 28 (= 4256)$ or “153” $\times 28 (=4284)$ or (“152.678..” – 152) (=0.678..) or $4275 \div \text{“152”} - 28(= 0.125)$ or $4275 - \text{“4200”} (=75)$ oe	Use of 150×28 or better for “4200”
		A1	cao	
14	Correct pie chart	M1	for a method to find at least one angle eg $\frac{50}{(50+45+25)} \times 360 (= 150)$ or $\frac{45}{(50+45+25)} \times 360 (= 135)$ or $\frac{25}{(50+45+25)} \times 360 (= 75)$ oe	
		A1	for at all 3 angles correctly calculated OR at least one correct and accurately drawn angle (from no more than 3 sectors)	Do not award for drawing if the intention is to show more than 3 sectors 3 angles correct in table is enough for this mark irrelevant of diagram
		A1	for a fully correct labelled pie chart	Labels as “City” from table not just angle size.



Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
9 (a)	30	B1	cao	
	(b) 42	B1	cao	
	(c) $\frac{1}{20}$	B1	for $\frac{1}{20}$ or any equivalent fraction or 0.05	
10 (a)	80	B1	cao	
	(b) 8	B1	cao	
	(c) Yes and reason	C1	for yes and reason Acceptable examples Yes, because 27 is greater than 7 Yes, because the drop is 20 more Yes, the gradient is steeper (in the first 3 mins) and is then less steep (in the last 3 mins) Yes, because the drop is 20 less in the last 3 mins Yes, because the drop is more Not acceptable examples No Yes, because the drop is 20 less	
11	110	M1	for use of angles in a quadrilateral add to 360° , eg $360 - 130 - 95 - 65 (= 70)$	May be seen in diagram or as a sum to 360°. $(130 + 95 + 65) - 180$ gains M2
		M1	for $180 - "70"$ or for $(130 + 95 + 65) - 180$	
		A1	cao	

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
		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
		C1	for reason that <u>Angles</u> on a straight <u>line</u> 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	
		M1	for a complete method, eg $30 \times (36 \div 2)$ or $45 \times (36 \div 3)$ or $60 \times (36 \div 4)$ or ft "hourly rate from (a)" $\times 36$	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 $75 \times 7 + 16 = 541$
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
9	4 5 23 32 8 9 7 24 12 14 30 56	B3 (B2) (B1)	for a fully correct table for at least 7 figures correctly placed) for the given values correctly placed in the table or one correct row or column)	Given values in bold Given values: 5, 32, 8, 12, 14, 56
10	61	P1 A1 A1	for $300 \div 4.85 (= 61.8\dots)$ for 61.8... or 62 61	This mark may be awarded for build-up methods that get to figures that are before or after 300 Embedded answers get –1 mark.
11 (a)	3 hrs 16 mins	P1 A1	$196 - 60 - 60 - 60 (=16)$ or $196 \div 60 (= 3.26\dots \text{ or } 3.27\dots)$ or states 3 hours in their answer (with an incorrect number of minutes or minutes left blank) 3 hours 16 minutes	
(b)	$\frac{x}{2}$	B1	$\frac{x}{2}$ or	
12 (a)	50	M1 A1	$[2.5] \times 20 (=50)$ for an answer in the range 46 to 54	[2.5] a number in the range 2.3 to 2.7 or identified as the distance from Shelton to Trilby
(b)	60	M1 A1	$5 \times 1200 (=6000)$ or $1200 \div 100 (=12)$ or conversion $5 \div 100 (=0.05)$ cao	

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	6m	B1	for 6m	
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	

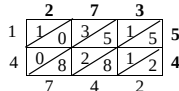
Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
20 (a)	1.765(2...)	M1	for fully evaluating the numerator or denominator, eg 18.3... or 10.4(1) or answer of 1.76 or 1.77 or digits 1765(2...)	Answer must be given to at least 3 decimal places rounded or truncated. Check first 4 significant figures only.
		A1	for 1.765(2.....)	
	(b) 1.6	B1	for 1.6 oe	
21	$2 \times 2 \times 3 \times 5$	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 or for 2, 2, 3, 5 (1)	Condone the inclusion of 1 for the method mark Accept $2^2 \times 3 \times 5$
		A1	for $2 \times 2 \times 3 \times 5$ oe	
22	No with reason	C1	for No and valid reason, eg compares $\frac{1}{3}$ with $\frac{1}{2}$ or 16 (with 24) Acceptable examples No, $\frac{1}{3}$ are red not $\frac{1}{2}$ There are 16 red counters (not 24) No as she has used the ratio 1:1 (not 1:2) Incorrect as it is 16 : 32 No as she should divide by 3 (as $1 + 2 = 3$) No as they would both be 24 so it doesn't fit in the ratio 1 : 2 No because $24 + 48 = 72$ Not acceptable examples Yes, ... No as the number of red counters would be lower There is 1 red for every 2 blue	

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
17	16 0 2 8	B2	for a fully correct ordered diagram	Accept stem of 160, 170, 180, 190 Can be in reverse vertical order (with matching leaves) eg 19, 18, 17, 16 Errors can be omissions; one number in the wrong position is one error. Key must be consistent with the stem.
	17 2 2 3 7 8	(B1)	for a complete unordered diagram or for an ordered diagram with at most one error or omission)	
	18 0 0 3 4 6 8			
	19 1 7	B1	(indep) for correct key, eg 16 0 or 160 0 represents 160	
	Key: 16 0 = 160 or 160 0 = 160			
18 (a)	1.882(0861678...)	B2	1.882(0861678...)	Condone 1.882(0861668...) for both marks
		(B1)	for 16.6 or 8.82 or $\frac{830}{441}$ or 1.88)	
(b)	1.88	B1	for 1.88 or ft their answer to part (a) correctly rounded to 2 dp, providing part (a) has at least 3 dp	Condone 1.88 Do not accept trailing 0, eg 1.880
19	78	M1	for finding one angle within the triangle is $180 \div 3 (= 60)$	Angles must be clearly labelled on the diagram or otherwise identified. Correct method can be implied from angles on the diagram if no ambiguity or contradiction. If x is clearly identified as 78 award M2 (implied) Underlined words need to be shown; reasons need to be linked to their method, which can be implied from correctly identified angles (stated or written on the diagram).
		M1	for method to use parallel lines, eg $BDE = DBC$ or $BCD + CDE = 180$	
		C2	(dep M2) for (x =) 78 with a correct reason relating to parallel lines and one other correct reason given, with no unused reasons.	
		(C1)	(dep M1) for one correct reason given for their chosen method, angles in an <u>equilateral triangle</u> are equal <u>alternate angles</u> are equal <u>angles</u> in a <u>quadrilateral</u> add up to 360 <u>angles</u> in a <u>triangle</u> add up to 180 <u>Allied angles</u> / <u>Co-interior angles</u> add up to 180	

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
7	144	P1	for process to begin to work with length, eg $8050 \div 25 (= 322)$ or $178 \times 25 (= 4450)$	3600 implies the first P1 mark
		P1	for full process to find number of lengths remaining, eg $"322" - 178$ or $(8050 - "4450") \div 25$ or $3600 \div 25$	
		A1	cao	
8 (a)	Explanation	C1	for explanation, eg subtract 6, decrease by 6, going down by 6	At least one term must be correct and intention to subtract shown Accept -12
	(b) 12	M1	for $73 - 61$ or 6×2	
		A1	cao	
(c)	Explanation	C1	for explanation relating to odd and/or even numbers Acceptable 52 is even the sequence is odd numbers it goes to 55 (and you cannot reach 52) it goes to 49 (which has gone past 52) nth term is $103 - 6n = 52$ which has no integer solutions 52 is between the 8 th and 9 th terms Not acceptable subtracting 6 each time will not lead to 52 it goes past 52	

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
9 (a)	16	B1	cao	
	19	M1	starts method to find input using inverse operations eg $28 + 10 (=38)$ or sight of $+10$ and $\div 2$	$+10$ and $\div 2$ could be seen in a flow diagram Working may be next to number machine.
		A1	cao	
	Shown	M1	for carrying out at least one trial or for forming a suitable equation, eg $2x - 10 = x$ or for identifying 10	Trial can be for any value, must be correctly evaluated. Accept correct inverse function trial, correctly evaluated. If working seen on the number machine provided in the question allow for a trial other than input 13 or output 28.
10	2 : 3	C1	for showing that an input of 10 gives an output of 10	Allow $10 \times 2 = 20 - 10 = 10$ for M1C1
		M1	for $24 : 36$ oe $3 : 2$ or $1.5 : 1$	
11 (a)	3	A1	2 : 3 or 1 : 1.5	Do not ISW from 2:3
	32	B1	cao	
	$30 \div (3 + 2) - 4$	B1	for brackets correctly placed	



Paper: 1MA1/1F																
Question	Answer	Mark	Mark scheme	Additional guidance												
14	14742	M1	for complete correct method with relative place value correct eg two lines of 1st method, internal numbers of grids, or complete structure shown of partitioning methods	13650 <u>1092</u> 14742  <table border="1" data-bbox="1035 1037 1264 1099"><tr><td></td><td>200</td><td>70</td><td>3</td></tr><tr><td>50</td><td>10000</td><td>3500</td><td>150</td></tr><tr><td>4</td><td>800</td><td>280</td><td>12</td></tr></table> $10000 + 3500 + 150 + 800 + 280 + 12 = 14742$		200	70	3	50	10000	3500	150	4	800	280	12
	200	70	3													
50	10000	3500	150													
4	800	280	12													
		M1	(dep on M1) for addition of all the appropriate elements of the calculation													
		A1	cao													

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
19 (a)	0.517(0189759)	M1	for any correct partial calculation, eg 40.113 or 6.333(482454) or 12.25 or answer of 0.51 or 0.52 or digits 517...	Answer must be given to at least 3 decimal places rounded or truncated. Check first 3 significant figures only. Do not accept trailing 0, eg 0.520
		A1	for 0.517(...)	
	(b) 0.52	B1	for 0.52 or ft their answer to part (a) correctly rounded to 2 sf, provided part (a) has at least 3 sf	
20	16.2	M1	for a correct first step to find BC , eg $19^2 = 10^2 + BC^2$ or $19^2 - 10^2 (= 261)$ or $\sqrt{19^2 - 10^2}$ or $\sqrt{261}$ or $3\sqrt{29}$	Can use alternative letter for BC provided intention is clear If using an alternative method using trigonometry must have BC as the only unknown ISW incorrect rounding if answer given in range
		A1	for answer in the range 16.1 to 16.2	
21 (a)	$2 \times 3 \times 3 \times 5$	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 or for 2, 3, 3, 5	Condone the inclusion of 1 for this mark Accept $2 \times 3^2 \times 5$ Accept $2^2 \times 3^2$ or $2 \times 2 \times 3 \times 3$
		A1	for $2 \times 3 \times 3 \times 5$ oe	
	(b) 36	B1	for 36	
22	4	M1	for method to use formula, eg $72 \div 6 (= 12)$ or $72 \div 9 (= 8)$	Can be implied by $\frac{72}{6}$ or $\frac{72}{9}$ cao
		A1	cao	

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
11 (a)	248	P1	for 700 – 452	
		A1	cao	
	11000	P1	for evidence of rounding values to 1 significant figure, eg 300 or 400 or 10 or 9 or 20	
		P1	(dep on P1) for beginning a process to work with ticket sales, eg. $300 \times 10 (= 3000)$ or $290 \times 10 (= 2900)$ or $297 \times 10 (= 2970)$ or $300 \times 9 (= 2700)$ or $300 \times 9.5 (= 2850)$ or $290 \times 9 (= 2610)$ or $297 \times 9 (= 2673)$ OR $400 \times 20 (= 8000)$ or $390 \times 20 (= 7800)$ or $399 \times 20 (= 7980)$ or $400 \times 19.5 (= 7800)$ or $400 \times 19 (= 7600)$	
	Overestimate with reason	A1	for using correct values giving an answer in the range 10 200 to 11 000 from calculations using their rounded values	
(c)		C1	(dep on P2 in (b)) for overestimate and reason, eg (ft from (b)) true total amount of money paid will be less as all values were rounded up	
12	7	M1	for $(13 + 4 + 5 + 9 + 3 + 8) \div 6$ or “42” $\div 6$	Condone missing brackets for M1
		A1	cao	

Paper: 1MA1/2F				
Question	Working	Answer	Mark	Notes
1		0.07	B1	cao
2		42 or 48	B1	42 or 48
3 (a)		$15/g$	B1	cao
(b)		t^2	B1	cao
(c)		$4n$	B1	cao
4 (a)	1785–1245 = 540 540 ÷ 90	6	P1 P1 A1 SC B1 for answer of 15	for process to find the total weight of one type of fruit eg $4 \times 125 (=500)$ or $2 \times 170 (=340)$ or $3 \times 135 (=405)$ or 1245 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 cao
(b)(i)		No	P1	Starts process, eg $1000 \div 75$ (digits 13(.3..) seen) or $15 \times 75 (= 1125)$ or 1.125 or showing $1000 \div 15 (=66(.6..))$ 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	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 $52 \div 4 (= 13)$ 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 $"13" \times 3$ OR for $"\frac{3}{4}" \times 52$ cao	Accept equivalent decimals or percentages

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 $4 \times 8 (=32)$ cao	Award this mark if used ambiguously eg $4 \times 8 + 3 = 4 \times 11$ 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: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
1	$\frac{37}{100}$	B1	or any other equivalent fraction	
2	29000	B1	cao	
3	6e	B1		
4	25	B1	cao	
5	27	B1	cao	
6	Yes with supporting calculations	M1 M1 C1	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) 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) 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)	May be implied by a correct calculation 1 hr = 60 mins is not enough for this mark Intention to do the correct calculation or calculations is enough for this mark Accept any sensible time notation throughout (pm is not required) Yes may be implied by a statement

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 (B1)	fully correct list with no repeat for at least 4 correct	Allow letters in either order
8	2540 shown	M1 M1 A1	for finding the cost of one item eg $2 \times 600 (=1200)$ or $7 \times 120 (=840)$ or $2 \times 250 (=500)$ full process eg " 1200 " + " 840 " + " 500 " ($=2540$) or $2500 - "1200" - "840" - "500" (= \pm 40)$ 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	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 $8 \times 4 (= 32)$ or $16 \times 4 (= 64)$ or $[PR] \times 4$	where [PR] is 12 or 13 or is clearly stated
		A1	cao	

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
1	5e	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 $"49" \times 2 (= 98)$ or $33 + 40 + 27 (= 100)$ and $20 + 14 + 15 (= 49)$ and $"100" \div 2 (= 50)$ or $33 + 40 + 27 (= 100)$ and $20 + 14 + 15 (= 49)$ and $"100" - "49" (= 51)$ or $33 + 40 + 27 (= 100)$ and $20 \times 2 + 14 \times 2 + 15 \times 2 (= 98)$ 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: 1MA1/1F				
Question	Working	Answer	Mark	Notes
21 (a)		10,19	B1	cao
(b)		Positive	C1	positive (correlation)
(c)		12 to 13	M1 A1	for an appropriate line of best fit drawn, or a point marked at (x, 16.4) or a horizontal line drawn from 16.4 across to (x, 16.4) where x is in the range 12 to 13 hours given in the range 12 to 13
(d)		explanation	C1	(yes) e.g. as the majority of points for high temperature appear when there are more hours of sunshine (positive correlation)
22		$2 \times 2 \times 2 \times 7$	M1 A1	for complete method to find prime factors; could be shown on a complete factor tree with no more than 1 arithmetic error accept $2^3 \times 7$

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
			B1	Accept 0.125
(b)		$\frac{1}{8}$		
23		$2 \times 2 \times 3 \times 3$	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 $2 \times 2 \times 3 \times 3$ 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: 1MA1/2F				
Question	Working	Answer	Mark	Notes
7		No	B1	for showing 11 or 13 or 17 or 19 with no non-prime numbers between 10 and 20, or for showing 23 or 29 with no non-prime numbers between 20 and 30. Ignore any numbers shown below 11.
		(supported)	C1	“No” supported by listing 11, 13, 17, 19 and 23, 29 and no non-prime
8 (a)		Statement	C1	States one thing wrong eg vertical scale is not linear oe
		Trend described	C1	eg the trend is upwards, positive (trend) oe
9 (a)		2.75	M1	for accurately measuring the distance between Backley and Cremford as 5.3 cm – 5.7 cm oe or their measurement $\times 0.5$ oe
			A1	for answer in the range 2.65 to 2.85
		130	B1	for answer in the range 128 to 132
10 (a)		12 cm ²	B1	for numerical answer of 12
			B1	for units shown as cm ²
		kite	B1	cao



Paper: 1MA1/3F				
Question	Working	Answer	Mark	Notes
1		4000	B1	for 4000
2		2y	B1	for 2y
3		1, 2, 3, 6, 9, 18	B2 [B1]	for all 6 factors with no incorrect for at least 3 factors with no more than one error]
4 (a)	$5.80 \times 3 + 7.80 = 25.20$	90p or £0.90	M1 M1 A1	for a correct first step from which a complete method could be developed, eg. $5.8(0) \times 3 (= 17.4(0))$ or $24.3(0) - 7.8(0) (= 16.5(0))$ for complete method, eg. $7.8(0) + 5.8(0) \times 3 - 24.3(0) (= 0.9(0))$ for answer in correct notation with correct units, eg. 90p or £0.90 (accept £0.90p and £0.9) [SC: B1 for an answer of £2.90]
(b)		8.27pm	M1 A1	for using 60 mins = 1 hour in the conversion of 102 minutes, eg. 1 h 42 mins or 1.42 or 1.7 or (60 + 42) mins or 102 – 60 or 102 ÷ 60 or for an answer of 8.27am or 08.27 for 8.27(pm) oe
5		13	M1 M1 A1	for the start of a method, eg. $2 \times 1000 (= 2000)$ or $150 \div 1000 (= 0.15)$ or $1000 \div 150 (= 6.66\dots)$ for a fully correct method, eg. $2000 \div 150$ or $2 \div 0.150$ or $13.3(\dots)$ cao



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 <u>isosceles triangle</u> are equal <u>angles</u> in a <u>triangle</u> add up to 180°]
8		30	M1 A1	for $12\text{ m} = 1.9$ 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. answer in range 27 to 33
9		2, 7 or 3, 13 or 5, 11 or 2, 23	M1 A1	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. for two correct prime numbers
10		60	M1 A1	for method to find the number, eg. $48 \times \frac{3}{2} (=72)$ or to find $\frac{1}{6}$ th of the number, eg. $48 \div 4 (=12)$ cao



Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
10	535	P1 P1 A1	for a start to the process eg $1280+640+220 (=2140)$ or $1280 \div 4 (=320)$ or $640 \div 4 (=160)$ or $220 \div 4 (=55)$ for a full process to find cost per adult eg " $2140 \div 4$ " or " 320 " + " 160 " + " 55 " cao SC: B1 for answer of 1495 if P0 scored	Can have arithmetical error as long as the complete processes, in the correct order, are present.
11 (a)	Example	C1	for a correct example, eg $3 \times 4 = 12$ or $12 \div 3 = 4$ or a statement eg '3 is a factor of 12' or '1 is a factor of every number'	This may be seen, for example, in a factor tree or in a list of factors, but there must be no incorrect factors on the tree or in the list
(b)	Example	C1	for an example, eg 23 or a statement eg 'the tens digit may be even' or 'the last digit only needs to be odd'	



Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
8	(a) -2, -1	B1	cao	Allow without label provided unambiguous; allow if the cross is nearer to (2, 3) than other points. Label not required; allow hand-drawn line. Allow any length provided intention is clear.
	(b) Point at (2, 3)	B1	cao	
	(c) Line drawn	B1	cao	
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	Accept any equivalent fraction
	(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 $\frac{11}{12}$ or	

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
23 (a)	600	P1	for starting process to calculate amount of flour eg $60 \div 15 (= 4)$ or $3 \times 50 (= 150)$	4 implied by 200g of sugar
		P1	for complete process eg $\frac{60}{15} \times "150"$	
		A1	cao	
(b)	2	P1	for process to calculate amount of butter eg $\frac{60}{15} \times 2 \times 50 (= 400)$	[butter] must be clearly stated or calculated, may be seen in part (a)
			OR for process to calculate the number of packs of butter needed eg [butter] $\div 250$	
		A1	cao	
24	18	M1	for listing factors of 72 and 90, at least 4 correct for each (with no more than 1 incorrect in each list), could be in factor pairs	Factors of 72: 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72 Factors of 90: 1, 2, 3, 5, 6, 9, 10, 15, 18, 30, 45, 90
			OR for the prime factors of 72 (2, 2, 2, 3, 3) or 90 (2, 3, 3, 5)	
		A1	for 18 or 2×3^2 oe	
			SC B1 for answer of 6 or 9 if M0 scored	
25	sketch	M1	for sketch of a cylinder	Hidden edges may or may not be shown
		A1	sketch of cylinder, with dimensions shown	
				2 (cm) for radius or 4 (cm) for diameter and 5 (cm) for height



Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
23	$x < 5$	M1 A1	for adding 27 to both sides or dividing throughout by 7 (in an inequality or an equation) as a first step or showing 5 as the critical value cao	Can be written as $x = 5$
24	$2 \times 2 \times 31$	M1 A1	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 or for 2, 2, 31, (1) for $2 \times 2 \times 31$ oe	Condone the inclusion of 1 for this mark Accept $2^2 \times 31$

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
21	168	M1 A1	for a list of at least 3 multiples of each number or for factors 3,2,2,2 oe and 7,2,2,2 oe (could be shown in a factor tree or Venn diagram or table) cao	Condone the use of 1 as a factor
22	7.5	M1 A1	for correct use of Pythagoras, eg. $8.5^2 - 4^2 (= 56.25)$ or $4^2 + x^2 = 8.5^2$ for 7.5 or $7\frac{1}{2}$ or $\frac{15}{2}$	Must have values substituted Trigonometry may be used but M1 only awarded when complete method shown.
23	(a) 25 (b) $p = \frac{d-4}{3}$ oe	M1 A1 M1 A1	for $(T \Rightarrow) 4 \times (-3)^2 - 11$ or $4 \times (-3)^2 = 36$ cao for a correct first step, eg. $d - 4 = 3p$ or $\frac{d}{3} = p + \frac{4}{3}$ or for $\frac{d-4}{3}$ as answer for $p = \frac{d-4}{3}$ oe	Can accept missing brackets May be in unsimplified form, eg $d - 4 = 3p + 4 - 4$



Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
9	Shown	P1 P1 C1	for a start to process of finding the total cost, eg $5 \times 26 (= 130)$ or $4 \times 45 (= 180)$ or $8 \times 23.50 (= 188)$ or $26 + 45 + 23.50 (= 94.5(0))$ or for a start to process of finding money left after paying costs, eg $500 - 26 (= 474)$ or $500 - 45 (= 455)$ or $500 - 23.50 (= 476.5(0))$ or $500 - 5 \times 26 (= 370)$ or $500 - 4 \times 45 (= 320)$ or $500 - 8 \times 23.50 (= 312)$ for complete process, eg “130” + “180” + “188” (= 498) or $500 - “130” - “180” - “188” (= 2)$ Shown with a complete process and correct figures.	
10 (a)	radius drawn	B1	for radius drawn	May be drawn freehand provided intention is clear
(b)	chord	B1	cao	
11	6	M1 A1	for start to method, eg $45 \times 8 (= 360)$ or $(45 \text{ mins} =) 0.75 \text{ oe (hours)}$ cao	
12	3 of 23, 29, 31, 37	M1 A1	for two correct and not more than one incorrect, eg 23, 27, 29 for three correct and no incorrect	May be shown in working space. Ignore numbers less than 20 or greater than 40 Accept 4 correct and no incorrect



Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
20	1 : 3	M1	for method to find angle ABC , eg $180 - 2 \times 81 (= 18)$ oe	Award first 3 marks for angles 18, 72, 54 marked on diagram provided not ambiguous Accept $n = 3$ $1 : 3$ or $n = 3$ without working scores 0 marks
		M1	for method to find angle BCD , eg $"18" \times 4 (= 72)$	
		M1	for method to find angle CBD , eg $\frac{180 - "72"}{2} (= 54)$	
		M1	(dep M3) for writing as ratio, eg $"18" : "54"$ or for an answer of $1 : 3n$ or $3 : 1$	
		A1	(dep M3) for $1 : 3$ from correct working	
21	(a)	B1	for $3(2x - 5)$	
	(b)	B1	for $m(m + 5)$	
22	21	M1	for a complete factor tree for 63 or 105 with no more than one arithmetic error or for listing at least 4 correct factors (with no more than 1 incorrect) of 63 or 105, could be in factor pairs or for the prime factors of 63 (3, 3, 7) or 105 (3, 5, 7)	Condone the inclusion of 1 for this mark May be seen in different ways, 1, 3, 7, 9, 21, 63 1, 3, 5, 7, 15, 21, 35, 105 Prime factors may be seen in a diagram eg a Venn diagram
		A1	cao SCB1 for answer of 3 or 7 or 3×7 if M0 scored	

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
8 (a)	No and reason	C1	No and reason Acceptable examples No, because $10^2 = 100$ or 10^2 is 10×10 $4^2 = 16$ and $5^2 = 25$ so 20 is not a square number Junaid is wrong because $\sqrt{20} \neq 10$ or $\sqrt{20} = 4.47...$ Incorrect because 20 is 2×10 not 10×10 No she multiplied by 2 instead of squaring or 10^2 is not 10×2 Wrong as she added instead of multiplying Not acceptable examples Yes.... No because 20 is 10×2 Incorrect because 20 is not a square number No because 10^2 is not 20 No because she added No because a square number is when a number is multiplied by itself	
(b)	example	C1	for a correctly evaluated example, eg $12 \div 4 = 3$ or $10 \div 2 = 5$ or $2 \div 4 = 0.5$	Accept rounded and truncated values, eg $2 \div 6 = 0.3(..)$, $100 \div 6 = 16.6(..)$
9	3 : 5	M1 A1	for 90 : 150 oe ratio or 5 : 3 cao	eg 30 : 50, 15: 25, 9 : 15 Accept 3 : 5 in the form $n : 1$, eg 0.6 : 1 or 1 : n , eg 1 : 1.66(...)

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
18	$\begin{array}{r} 13 \overline{) 578} \\ 14 \overline{) 246679} \\ 15 \overline{) 024} \end{array}$ Key: 13l5 = 135 or 130l5 = 135	B2 (B1 B1	for a fully correct ordered diagram for a complete unordered diagram or for an ordered diagram with at most one error or omission) for a correct key (units not required but must be correct if stated) eg. 13l5 or 130l5 represents 135 (cm)	Any comment on the other ingredients must be correct. Accept stem of 130, 140, 150 Can be in reverse vertical order (with matching leaves) Errors can be omissions; one number in the wrong position is one error Key must be consistent with the stem
19	6	M1 A1	for a complete factor tree for 54 or 120 with no more than one arithmetic error or for listing at least 4 correct factors (with no more than 1 incorrect) of 54 or 120, could be in factor pairs or for the prime factors of 54 (2, 3, 3, 3) or 120 (2, 2, 2, 3, 5) cao SCB1 for an answer of 2 or 3 or 2×3 if M0 scored	Condone the inclusion of 1 for this mark Factors of 54: 1, 2, 3, 6, 9, 18, 27, 54 Factors of 120: 1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120 Prime factors may be seen in a diagram eg a Venn diagram

Paper 1MA1: 2F				
Question	Working	Answer	Mark	Notes
5 (a)		Monday wrong	C1	for seeing difference in tally marks and frequency for Monday
		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. $495 \div 3 (= 165)$ or $495 \times 0.33...$ or of the 50p coins, eg. $124 \div 2 (= 62)$
			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. $(("165") + (124 \div 2) + ("206" \times 0.2))$ or $165 + 62 + 41.2$
			A1	cao (accept 268.2)
7		0.985	B1	oe
8 (a)		25	B1	for 25 (accept 5^2)
		24	B1	cao
		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: 1MA1/2F				
Question		Answer	Mark	Mark scheme
10	(a)	23, 29	B2	for 23 and 29 and no extras
	(b)	Explanation	C1	for decision and explanation eg yes and because all other even numbers have 2 as a factor
11	(a)	17	B1	cao
	(b)	12	B1	cao
	(c)	5.5	B1	Accept $\frac{11}{2}$, $5\frac{1}{2}$ oe
12		Correct pie chart	M1	for method to find at least one angle eg B: $360 \div "36" \times 11 (= 110)$ or P: $360 \div "36" \times 17 (= 170)$ or HD: $360 \div "36" \times 8 (= 80)$
			A1	for at all 3 angles correctly calculated OR at least one accurately drawn angle
			A1	for a fully correct labelled pie chart

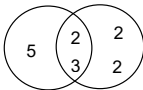


Paper: 1MA1/2F					
Question		Answer	Mark	Mark scheme	Additional guidance
20	(a)	m^7	B1	cao	
	(b)	$125n^3p^9$	B2	cao	Allow multiplication signs
			(B1)	for 2 of 3 terms correct in a single product)	$125n^3p^x$ or $125n^x p^9$ where $x \neq 0$ or an^3p^9 where a is a number
	(c)	$8q^6r^3$	B2	cao	Allow multiplication signs
			(B1)	for 2 of 3 terms correct in a single product)	$8q^6r^x$ or $8q^x r^3$ where $x \neq 0$ or aq^6r^3 where a is a number
21	(a)	280	M1	for listing at least 3 multiples of both 40 and 56 OR finds the prime factors of both 40 and 56	40, 80, 120, ... 56, 112, 168, ... OR 2,2,2,5 and 2,2,2,7
			A1	cao	
	(b)	60	B1	60 or $2^2 \times 3 \times 5$ oe	2^2 , 3, 5 not enough ie must be a product
22		$y = 3x - 6$	M1	for a correct method to find the gradient of the line, or $m = 3$ OR identifies -6 as the intercept in words or in a partial equation OR $y - b = m(x - a)$ where $m \neq 3$ and (a, b) is a correct coordinate	Just ringing -6 is insufficient
			M1	for $y = 3x + c$ or (L=) $3x - 6$ or $y = "3"x - 6$ OR $y - y_1 = 3(x - x_1)$ or $y - b = "3"(x - a)$ where (a, b) is a correct coordinate	Award of this mark implies the first M1 c must be seen either as a letter or a number
			A1	accept $y = 3x + -6$ oe	

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
20	1080	M1	for method to write one number as a product of prime factors (condone one division error in method chosen), eg. one complete factor tree or 2, 2, 3, 3, 3 or 2, 2, 2, 3, 5 or for listing at least 5 multiples of either number (condone one error) or for any common multiple ($\neq 1080$), eg. 12960 ($= 108 \times 120$)	Accept first 5 multiples if all correct or one error in first 6 multiples
		M1	for method to write both numbers as a product of prime factors (condone a total of one division error) eg. two complete factor trees or 2, 2, 3, 3, 3 and 2, 2, 2, 3, 5 or lists of multiples of the two numbers, at least 5 of each, one of which includes 1080	For the list not containing 1080, accept first 5 multiples if all correct or one error in first 6 multiples
		A1	cao SC B2 for any product that would lead to 1080, eg $2^3 \times 3^3 \times 5$ or $12 \times 9 \times 10$	

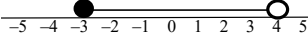
Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
19	$2^2 \times 5^3$	M1 M1 A1	for a complete method to find prime factors; could be shown on a complete factor tree with no more than one error or by division by prime factors with no more than one error for complete factorisation,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

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
24 (a)	63	B1	for 63, accept $3 \times 3 \times 7$ or $3^2 \times 7$	(A =) $2^2 \times 3^4 \times 7$ scores 0 marks
		M1	for at least two of 2^2 , 3^4 , 7^2 or shows at least 3 multiples of 2268, eg 2268, 4536, 6804 and at least 3 multiples of 441, eg 441, 882, 1323	
		A1	for 15876 or $2^2 \times 3^4 \times 7^2$ oe	
25	65	P1	for a correct process to find the number of seconds, eg $67\,205\,600 \div 11.9$ (= 5 647 529.4...) or for a correct process to convert between seconds and days, eg $24 \times 60 \times 60$ (= 86 400) oe, may be seen in stages or $11.9 \times 60 \times 60 \times 24$ (= 1 028 160)	Note that this mark may be awarded at any stage in the working. If a correct answer within the range is shown in working but incorrectly rounded award full marks.
		P1	for a complete process, eg “5 647 529.4...” $\div$ “86 400” or $67\,205\,600 \div$ “1 028 160”	
		A1	accept answers in the range 65 to 65.4 or 66	
26 (a)	(1, -3)	B1	cao	
		B1	for an answer in the range -0.8 to -0.6 or 2.6 to 2.8	

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
(b)	4	M1	for a correct first step, eg for adding 7 to both sides $5y - 7 + 7 < 16 + 7$ or for dividing throughout by 5 eg $\frac{5y}{5} - \frac{7}{5} < \frac{16}{5}$ or for showing 4.6 (oe) as the critical value or for $5 \times 4 - 7$ with 13 seen as answer	Allow use of any inequality or as an equation for the first mark Award 1 mark for 4.6 oe, eg $y = \frac{23}{5}$ or $y < 4.6$
		A1	for 4 or $y = 4$ with no incorrect working	An answer of 4 from incorrect working can score 1 mark at most.
24	4 packs and 5 boxes,	P1	for start of a process to find common multiples of 30 and 24, eg writes down at least 3 multiples of 30 and at least 3 multiples of 24 or draws factor trees for both 30 and 24 with no more than 1 error in total or draws a correct Venn diagram	30, 60, 90, 120, 150, 180, 210, 240 ... 24, 48, 72, 96, 120, 144, 168, 192, 216, 240, ... Condone the inclusion of 1 in factor trees or Venn diagrams for this mark 
	or any multiple	P1	for identifying a common multiple eg 120 or 240 or $5 \times 3 \times 2 \times 2 \times 2$ oe	May use any common multiple, 120, 240, 360...
		A1	for 4 packs and 5 boxes or any multiple of this pairing eg 8, 10	Award 0 marks for a correct answer without correct supportive working.
25	20	M1	for $30 \times 4 \div 6$ oe	
		A1	cao	

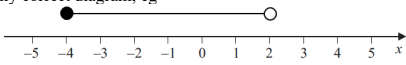
Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
8	No from correct figures	P1	for process to find year of Aisha's 18th birthday, eg $1993 + 18 (= 2011)$ or for process to find Aisha's age in 2030, eg $2030 - 1993 (= 37)$	
		P1	for process to find years of future elections, eg writes down 2011, 2016, 2021, 2026, 2031 or for $2011 + 4 \times 5 (= 2031)$ oe or for process to find Aisha's age in years when there is an election, eg writes down 18 in 2011, 23 in 2016, 28 in 2021, 33 in 2026 and 38 in 2031 or for process to find years between 18th birthday and election eg $2030 - 2011 (= 19)$	At least 3 correct values needed
		A1	for No with correct figures eg 2011 and 2026 or 2031 or for No with eg 37 and 33 or 38 or for No with 2011 (2016, 2021, ...) and explanation that election years end in 1 or 6, not 0 or for No with 2011 and explanation that 19 is not divisible by 5	At least 3 correct values needed, condone years missing eg 18, 23, 28,... without 2011, 2016, 2021...

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
19	$\frac{3}{10}$	P1 A1	for a process to find three amounts in the correct proportions, eg $R = 1$, $L = 3 \times 1 = 3$, $A = 2 \times 3 = 6$, or $R : L : A = \frac{1}{6} : 0.5 : 1$ oe or $L=3R$, $L=\frac{A}{2}$ or $L=3R$, $2L=A$ for $\frac{3}{10}$ or equivalent fraction	Relationship could be given in algebraic form or in ratio form, using fractional comparison or using their own figures Award P1 for correct answer not given as a fraction
20	1.75	P1 P1 P1 A1	for an initial process eg $1.80 \div 12 (=0.15)$ or $1.80 \div 3 (=0.6)$ for a correct second step eg " 0.15 " $\div 3 (=0.05)$ or " 0.6 " $\times 7 (=4.2)$ or $3 \div "0.15"(=20)$ or $7 \div 3 (=2.3..)$ or " 0.15 " $\times 7 (=1.05)$ for finding the price of one pen eg " 0.05 " $\times 7 (=0.35)$ or " 4.2 " $\div 12 (=0.35)$ or $7 \div "20"(=0.35)$ or " $2.3....$ " $\times "0.15" (=0.35)$ or " 1.05 " $\div 3 (=0.35)$ cao	Accept $1.8 \div 12 = 15$ (p) They can work in pounds or pence
21 (a)	$2 \times 2 \times 3 \times 7$	M1 A1	for a complete method to find prime factors, could be shown on a factor tree, with no more than one arithmetic error or for 2, 2, 3, 7 for $2 \times 2 \times 3 \times 7$ oe	Condone the use of 1 Accept $2^2 \times 3 \times 7$
(b)	420	M1 A1	for at least 3 multiples of both 60 and 84 (can include 60 and 84) or finds the prime factors of both 84 (may be seen in (a)) and 60, may be seen in factor trees 420 or $2 \times 2 \times 3 \times 5 \times 7$ oe	60, 120, 180, 240, 300, 360, 420 84, 168, 252, 336, 420 $60 = 2 \times 2 \times 3 \times 5$ or $2^2 \times 3 \times 5$ If factor tree in (a) is incorrect fit this factor tree in part (b) for M1 only

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
20	(a) c^3	B1	cao	
	(b) d^{12}	B1	cao	
21	(a) $x > -1$	B1	cao	
	(b) Diagram drawn	C2 (C1)	for a fully correct diagram, eg 	
22	(a) 12	M1	for a correct factor tree for either 60 or 84 with no more than one arithmetic error or for listing factors of 60 or 84, at least 4 correct for either (with no more than 1 incorrect in either list), could be in factor pairs or for the prime factors of 60 (2, 2, 3, 5) or 84 (2, 2, 3, 7)	Condone the use of 1 in any factor tree 60: 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60 84: 1, 2, 3, 4, 6, 7, 12, 14, 21, 28, 42, 84
		A1	for 12 or $2 \times 2 \times 3$ oe SC B1 for answer of 4 or 6, if M0 scored	
	(b) 120	M1	for a correct factor tree for either 24 or 40 with no more than one arithmetic error or for at least 3 multiples of both 24 and 40 (can include 24 and 40) or for the prime factors of either 24 (2, 2, 2, 3) or 40 (2, 2, 2, 5) or for a common multiple from their lists ($\neq 120$)	Condone the use of 1 in any factor tree 24: 24, 48, 72, 96, 120, ... 40: 40, 80, 120, ... For the list not containing 120, accept the first 3 correct multiples or one error in the first 4 multiples
		A1	for 120 or $2 \times 2 \times 2 \times 3 \times 5$ oe	

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
20 (a)	$2^2 \times 3 \times 13$	M1	for a complete method to find prime factors; could be shown in a complete factor tree with no more than one error or by division by prime factors with no more than one error or for 2, 2, 3, 13 (1)	Condone the inclusion of 1 for this mark
(b)	26	A1	$2^2 \times 3 \times 13$ or $2 \times 2 \times 3 \times 13$ oe	
		M1	for a correct factor tree for 130 (or 156 if not credited in part (a)) with no more than one arithmetic error or for listing factors of 156 or 130, at least 4 correct for either (with no more than 1 incorrect in either list), could be in factor pairs or for the prime factors of 130 (2, 5, 13) (or 156 if not credited in part (a)). or identifies a common factor other than 1 (2 or 13)	Condone the inclusion of 1 for this mark 1, 2, 3, 4, 6, 12, 13, 26, 39, 52, 78, 156 1, 2, 5, 10, 13, 26, 65, 130
		A1	cao	

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
16 (a)	$2 \times 3^2 \times 7$	M1	for a complete factor tree with no more than one arithmetic error or 2, 3, 3, 7	Condone the inclusion of 1 for this mark
(b)	42	A1	accept $2 \times 3 \times 3 \times 7$	
		M1	for a complete factor tree for 210 (or 126 if not credited in part (a)) with no more than one arithmetic error or for listing factors of 126 or 210, at least 4 correct for either (with no more than 1 incorrect in either list), could be in factor pairs or for the prime factors of 210 (2, 3, 5, 7) (or 126 if not credited in part (a))	Condone the inclusion of 1 for this mark 1, 2, 3, 6, 7, 9, 14, 18, 21, 42, 63, 126 1, 2, 3, 5, 6, 7, 10, 14, 15, 21, 30, 35, 42, 70, 105, 210 Prime factors may be seen in a diagram eg a Venn diagram
		A1	accept $2 \times 3 \times 7$ SCB1 for answer of 2 or 3 or 6 or 7 or 14 or 21 if M0 scored	
17	Points plotted at (130, 12) (150, 28) (170, 30) (190, 22) (210, 8) and joined with line segments	B2 (B1)	for correct plotting of 5 points and joining with line segments for points plotted correctly at midpoints or for a frequency polygon with one point incorrect or for a frequency polygon with first and last point joined directly or for joining the points with line segments at the correct heights consistent within intervals (including end points))	Ignore any histogram drawn Ignore any part of the frequency polygon outside of the range of the first and last point plotted. for example, at 120, 140, 160, 180, 200 or at 140, 160, 180, 200, 220

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
18	384	P1 P1 A1	for $\sqrt[3]{512} (= 8)$ or $512 \div 8 (= 64)$ for $"8" \times 6$ $"\sqrt[3]{512}" \times "\sqrt[3]{512}" \times 6$ cao	A correct answer coming from an incorrect method, eg $512 \div 4 = 128$ and $128 \times 3 = 384$ will score no marks
19 (a)	-2	B1	cao	
(b)	Inequality shown	C2 (C1)	for a fully correct diagram, eg  for drawing a line from -4 to 2 or (indep) for an open circle at 2 or (indep) for a closed circle at -4	Condone arrow heads or line ending to denote the 'end' of the line
20 (a)	2×5^3	M1 A1	for a complete method to find prime factors; could be shown on a complete factor tree with no more than one arithmetic error or by division by prime factors with no more than one error or for 2, 5, 5, 5 accept $2 \times 5 \times 5 \times 5$ oe	Condone the inclusion of 1s for this mark

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
20 (b)	150	M1	for at least 3 multiples of both 30 and 25 (can include 30 and 25) or for the prime factors 2, 3, 5 and 5, 5 (could be shown in a factor tree with no more than 1 arithmetic error or Venn diagram or table) or identifies the factors 5, 5 and 6 (may be seen in a grid) or for a different common multiple, eg 300	30, 60, 90, 120, 150, 180, 210, 240 25, 50, 75, 100, 125, 150, 175 $30 = 2 \times 3 \times 5$ $25 = 5 \times 5$ Condone the inclusion of 1s for this mark
		A1	150 or $2 \times 3 \times 5 \times 5$ oe	
21	1380 2070 3450	M1	for beginning to work with ratio, eg $6900 \div (2 + 3 + 5) (= 690)$ or $6900 \div 2 (= 3450)$ or $6900 \div 5 (= 1380)$ or one accurate value correctly assigned	Award M0 for a correct value assigned to an incorrect person
		M1	for full method to find the value for two people, eg two of : " 690 " $\times 2 (= 1380)$ or " 690 " $\times 3 (= 2070)$ or " 690 " $\times 5 (= 3450)$ or $(6900 - "3450") \div 5 \times 2 (= 1380)$ or $(6900 - "3450") \div 5 \times 3 (= 2070)$ or $(6900 - "1380") \div 8 \times 3 (= 2070)$ or $(6900 - "1380") \div 8 \times 5 (= 3450)$ or $6900 \div 2 (= 3450)$ and $6900 \div 5 (= 1380)$	Award M0 for a correct value assigned to an incorrect person
		A1	for Sid (£) 1380 Tam (£) 2070 Musa (£) 3450 If M1M0, award SCB2 for Sid (£) 3450 Tam (£) 2070 Musa (£) 1380	Correct values not assigned or assigned to an incorrect person, coming from an incorrect method, eg (Sid $\Rightarrow$) $6900 \div 2 = 3450$ and (Tam $\Rightarrow$) $6900 \div 3 = 2300$ and (Musa $\Rightarrow$) $6900 \div 5 = 1380$ will score no marks

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
8	400	P1 P1 A1	for finding the total weight of 4 blocks, eg $650 \times 4 (= 2600)$ or $0.65 \times 4 (= 2.6)$ or for using $1 \text{ kg} = 1000\text{g}$ eg $650 \div 1000 (= 0.65)$ or $3 \times 1000 (= 3000)$ for subtraction, eg. $3 \times 1000 - "2600"$ or $3 - "2.6" (= 0.4)$ cao SC B1 for 2350	Writing 1 kg as 1000g is insufficient without it being used in a calculation
9	45	M1 A1	for $180 - (100 + 35)$ oe cao	Answer may be written on the diagram.
10	(a) A plotted at (3, 2) (b) (-1, 0)	B1 B1	cao cao	Accept a cross or dot or A written at (3, 2) with or without labelling provided not ambiguous Could be shown on the diagram
11	HHH HHT HTH HTT THH THT TTH TTT	M1 A1	for at least 4 correct different combinations for fully correct list with no extras or repeats	Accept words or unambiguous abbreviations For M1 ignore extras or repeats;

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
8	Shown	M1	for a method to find the total cost for footballs, hockey sticks or cricket bats, eg $9.5 \times 5 (= 47.5)$ or $(6 \div 2) \times 30 (= 90)$ or $23 \times 2 (= 46)$ OR begins to work with budget, eg $200 - 5 (= 195)$	Can be done with addition or subtraction, or combination
		M1	for a method to find the total cost for two of footballs, hockey sticks or cricket bats, eg two from $9.5 \times 5 (= 47.5)$ or $(6 \div 2) \times 30 (= 90)$ or $23 \times 2 (= 46)$ OR works with budget and total cost for one of footballs, hockey sticks or cricket bats, eg $200 - "47.5"$	
		M1	for a complete method to find comparable figures, eg $9.5 \times 5 + (6 \div 2) \times 30 + 23 \times 2 + 5$ or $"47.5" + "90" + "46" + 5$ or $200 - (9.5 \times 5 + (6 \div 2) \times 30 + 23 \times 2 + 5)$ or $200 - "188.5"$	
		C1	shows correct figures for a conclusion eg (£)188.5(0) or (£)11.5(0)	Figures need not be supported by words but must not be contradicted.
9	WP WS WC BP BS BC GP GS GC	B2	for all correct and no incorrect or repeats	
		(B1	for at least 4 correct)	Ignore repeats
10	3 : 5	M1	for 24 : 40 or for any ratio equivalent to 24 : 40 or 5 : 3	
		A1	for 3 : 5	Accept 3 : 5 in the form $n : 1$, eg 0.6 : 1 or 1 : n , eg 1 : 1.66(..)
11 (a)	Unlikely	B1	cao	
(b)	Evens	B1	cao	
12	111	M1	for a complete method, eg 37×3 oe	
		A1	cao	



Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
8	(a)	B1	cao	
	(b)	M1	for an answer of $(0, y)$ where $y \neq -2$ or $(x, -2)$ where $x \neq 0$ or the correct midpoint identified on the grid or $(2 + -2) \div 2$ or $(1 + -5) \div 2$	
		A1	cao SCB1 if M0 scored for $-2, 0$	
	(c)	C1	cao	
9	379.86	P1	for process to work with number of miles or cost, eg $47879 - 47241 (= 638)$ or $47879 \times 47 (= 2250313)$ or $47241 \times 47 (= 2220327)$ or [mileage] $\times 47$	working may be seen in £ or pence throughout [mileage] is any value they consider to be mileage
		P1	for process to work with miles and cost, eg " 638 " $\times 47 (= 29986)$ or " 638 " $\times 0.47 (= 299.86)$ or " 2250313 " – " 2220327 " $(= 29986)$	
		B1	(indep) for converting between pence and pounds, eg " 29986 " $\div 100$ or $47 \div 100 (= 0.47)$ or 80×100 OR miles divided by 100, eg " 638 " $\div 100 (= 6.38)$ or $47879 \div 100 (= 478.79)$ and $47241 \div 100 (= 472.41)$	
		A1	for 379.86	
10	HHH, HHT, HTH, HTT, THH, THT, TTH, TTT	M1	for at least 3 correct outcomes from HHH, HHT, HTH, HTT, THH, THT, TTH, TTT ignoring extras and repeats	May be written in words
		A1	for all 8 outcomes with no extras or repeats	

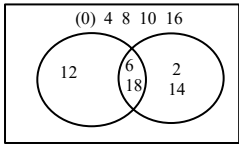
Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
8	CB, CF, CS, TB, TF, TS, LB, LF, LS	B2 (B1)	for fully correct list with no repeats for at least 4 correct combinations, condone repeats and incorrect combinations)	Accept unambiguous abbreviations Accept CB or BC etc
9 (a)	-2, 1	B1	cao	Accept without label provided unambiguous, ignore any lines drawn Accept without label provided unambiguous, ignore any lines drawn
(b)	Point marked at (1, 2)	B1	cao	
(c)	Point marked at (5, 0)	B1	cao	
10	No with reason	C1	No with reason Acceptable reasons: No, the cube root of 27 is 3 (not 9) No, the answer is 3 No, $9 \times 9 \times 9$ is not 27 No, $9 \times 9 \times 9$ is 729 No, $3 \times 3 \times 3$ is 27 No, $27 \div 3 = 9$ and $9 \div 3 = 3$ No, he needs to divide by 3 again No, because you don't divide by 3 for cube root No, 9×9 is 81 which is already more than 27 Not acceptable reasons: No, the cube root is not 9 3 divided by 27 is 9 No because a cube number is a number times by itself 3 times No, because you don't divide by 3	'No' may be implied by an equivalent statement eg 'Jason is wrong' or 'He is not correct'



Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
23	statements	C1	for identifying that the number 17 should only be in the intersection Acceptable examples 17 should only be in the middle Take 17 out of (set) A only appropriate 17 crossed out on the Venn diagram Not acceptable examples Tom should put 17 in B Should have two 17's in the middle Take 17 out of (set) A Needs to remove a 17 17 is on twice	Accept correct descriptions using correct set notation for both marks Diagram may be used to support statements
		C1	for identifying that the number 1 is missing from the diagram Acceptable examples 1 should be in the outside region He should put 1 outside the circles Tom needs to put the number 1 on the diagram include 1 (outside $A \cup B$) 1 added to the diagram in the correct region Not acceptable examples Add the remaining numbers There are missing odd numbers between 0 and 20 put all the odd numbers outside the circles add the odd numbers in the $\mathcal{E}$ box include the even numbers 1 should be outside the Venn diagram	

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) If repeats (but no incorrect numbers) award M1 only.
		A1	15,17,19,20,21,23 and 25 with no repeats	
	(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 (fit 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 Use of decimals gets no credit unless it leads to a correct fraction
		A1	$\frac{95}{28}$ oe $3\frac{11}{28}$	
	$1\frac{3}{5}$	M1	for $\frac{6}{5} \times \frac{4}{3}$ or $\frac{24}{20} \div \frac{15}{20}$ or $\frac{8}{5}$ oe eg $1\frac{9}{15}$	
		A1	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