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

Measures, Accuracy & Estimation (N4)

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

131 questions · 349 marks · Mark schemes included

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

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HOW TO USE THIS BOOKLET

Questions are grouped by sub-topic and run from the lowest to the highest mark tariff, then oldest paper first.

Click any row below to jump straight to that sub-topic or question.

On every question page, click ANSWER in the top-right corner to jump to its mark scheme; < QUESTION brings you back.

A gold bar in the left margin marks exactly where the question sits on the original page.

Diagrams, graphs, grids and tables are printed exactly as they appear in the original papers.

Each question is filed under its main topic; longer questions may also test skills from other topics.

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QUESTIONS

131 questions · 349 marks · 3 sub-topics

SUB-TOPIC N4a

ROUNDING & ESTIMATION

Sub-topic N4a · 37 questions · 76 marks · lowest tariff first



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 Work out the value of 2^4

(Total for Question 1 is 1 mark)

- 2 Write 7.26451 correct to 3 decimal places.

(Total for Question 2 is 1 mark)

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

(1)

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

$x =$
(1)

(Total for Question 3 is 2 marks)

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

..... %

(Total for Question 4 is 1 mark)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 (a) Simplify $5p - 3p + p$

.....
(1)

(b) Simplify $m^3 + m^3$

.....
(1)

(c) Simplify $10 + 3c + 5d - 7c + d$

.....
(2)

.....
(Total for Question 1 is 4 marks)

2 Write 56.78 correct to one significant figure.

.....
(Total for Question 2 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 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)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1** Write 6324 correct to the nearest thousand.

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

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

−6 6 −5 0 12

.....
(1)

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

0.078 0.78 0.87 0.708

.....
(1)

(Total for Question 2 is 2 marks)

- 3** Write 20% as a fraction.

.....
(Total for Question 3 is 1 mark)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

.....%

(Total for Question 1 is 1 mark)

- 2** Write 1.59 correct to 1 decimal place.

.....

(Total for Question 2 is 1 mark)

- 3** Work out the value of 3^5

.....

(Total for Question 3 is 1 mark)

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

.....

(Total for Question 4 is 1 mark)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

.....

(Total for Question 1 is 1 mark)

- 2 Write 0.3 as a percentage.

.....%

(Total for Question 2 is 1 mark)

- 3 Write the number 2538 correct to the nearest hundred.

.....

(Total for Question 3 is 1 mark)

- 4 Here are the first 4 terms of a sequence.

2 9 16 23

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

.....
(1)

- (ii) Explain how you got your answer.

.....
(1)

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

.....
(1)

(Total for Question 4 is 3 marks)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

0.4 0.02 0.37 0.152 0.2

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

- 2** Write 0.6 as a percentage.

..... %

(Total for Question 2 is 1 mark)

- 3** Here is a list of numbers.

3 5 7 12 15 18 20

From the list, write down a factor of 10

.....
(Total for Question 3 is 1 mark)

- 4** Write 7829 to the nearest 1000

.....
(Total for Question 4 is 1 mark)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1** Write 478 to the nearest hundred.

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

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

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

- 3** Change 1.5 kilometres to metres.

..... metres
(Total for Question 3 is 1 mark)

- 4** Here is a list of numbers.

4 6 9 10 15 27 30 40

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

.....
(Total for Question 4 is 1 mark)

- 5** Write 19% as a fraction.

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



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

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

- 2** Write 4.58 correct to 1 decimal place.

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

- 3** Work out 31.7×100

.....
(Total for Question 3 is 1 mark)

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

.....
(Total for Question 4 is 1 mark)

- 5** Write 15% as a decimal.

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



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

8 -4 1 -7 -2

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

- 2** Write the number 8375 correct to the nearest thousand.

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

- 3** Write 0.23 as a percentage.

..... %
(Total for Question 3 is 1 mark)

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

.....
(Total for Question 4 is 1 mark)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

0.32 0.4 0.35 0.309

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

- 2** Here is a list of numbers.

5 11 18 22 29

From the list, write down a multiple of 3

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

- 3** Write 4.666 correct to the nearest whole number.

.....
(Total for Question 3 is 1 mark)

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

.....
(Total for Question 4 is 1 mark)

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

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



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 Write 0.37 as a fraction.

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

- 2 Write 29 381 correct to the nearest 1000

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

- 3 Simplify $3e - e + 4e$

.....
(Total for Question 3 is 1 mark)

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

..... %
(Total for Question 4 is 1 mark)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

.....%

(Total for Question 1 is 1 mark)

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

8 -7 -10 1 0 -2

.....

(Total for Question 2 is 1 mark)

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

.....

(Total for Question 3 is 1 mark)

- 4 Write 327 correct to the nearest ten.

.....

(Total for Question 4 is 1 mark)

- 5 Write down the value of 7^2

.....

(Total for Question 5 is 1 mark)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 Write 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 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 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.

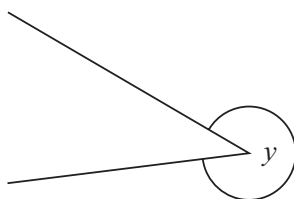
- 1** Write the number 18475 correct to the nearest thousand.

.....
(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

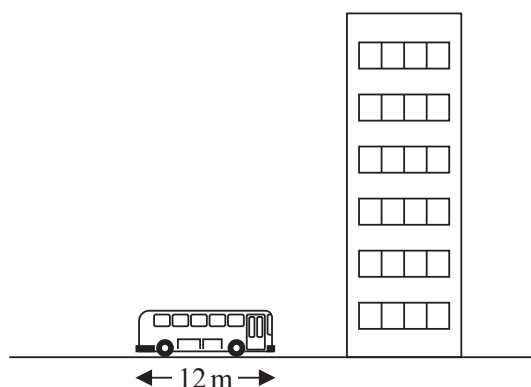
.....
(Total for Question 4 is 1 mark)

- 5** Find the square root of 64

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



8



The picture shows a bus next to a building.
The bus has a length of 12 m.

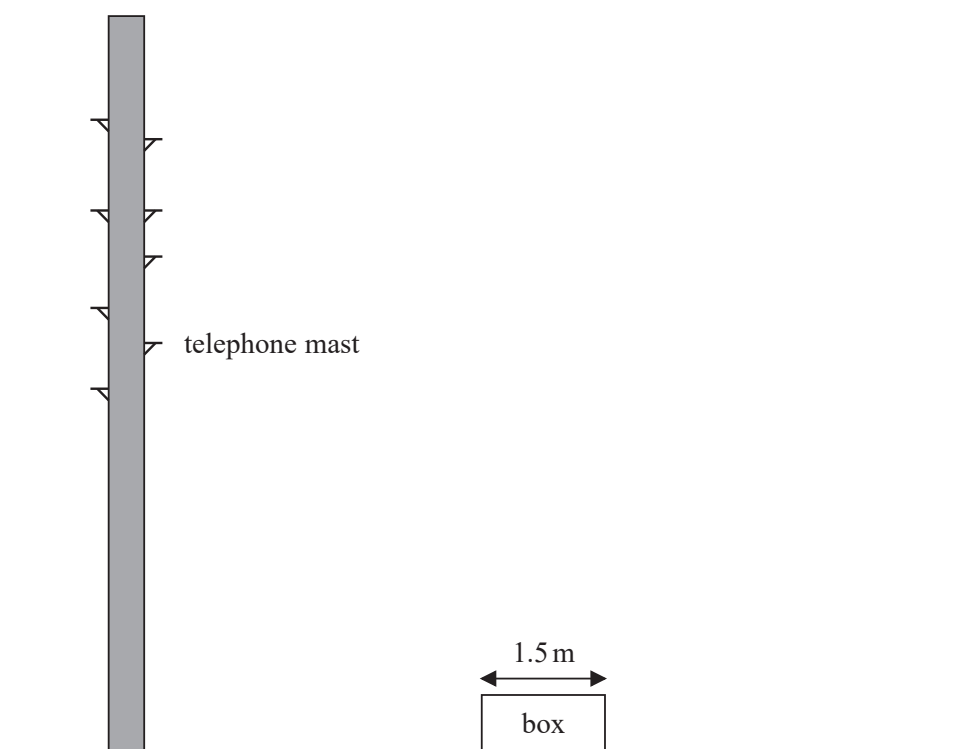
The bus and the building are drawn to the same scale.

Work out an estimate for the height, in metres, of the building.

..... m

(Total for Question 8 is 2 marks)

17 The accurate scale diagram shows a telephone mast and a box.



The box has a real width of 1.5 metres.

Find an estimate for the real height, in metres, of the telephone mast.

..... metres

(Total for Question 17 is 2 marks)

14 Here is the shoe size of each of 12 boys in a class.

4 5 6 6 6 7 7 8 8 8 8 9

(a) Find the median.

.....
(1)

(b) Work out the range.

.....
(1)

For the shoe sizes of each of 12 girls in the class,

the median size is 6

the range is 3

(c) Compare the distribution of the shoe sizes of the boys with the distribution of the shoe sizes of the girls.

.....
(2)

(Total for Question 14 is 4 marks)

15 Work out $\frac{2.75 \times 14.6}{10 - 1.97}$

.....
(Total for Question 15 is 2 marks)



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

.....
(1)

(b) Write 0.0874 correct to 1 significant figure.

.....
(1)

(Total for Question 18 is 2 marks)

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

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

82 of the counters are yellow.

What percentage of the counters are green?

.....%

(Total for Question 19 is 4 marks)



- 12 There are only 7 blue pens, 4 green pens and 6 red pens in a box.

One pen is taken at random from the box.

Write down the probability that this pen is blue.

(Total for Question 12 is 2 marks)

- 13 The diagram shows a tree and a man.



The man is of average height.

The tree and the man are drawn to the same scale.

- (a) Write down an estimate for the real height, in metres, of the man.

..... metres
(1)

- (b) Find an estimate for the real height, in metres, of the tree.

..... metres
(2)

(Total for Question 13 is 3 marks)

20 Ami and Josh use a calculator to work out $\frac{595}{4.08^2 + 5.3}$

Ami's answer is 27.1115

Josh's answer is 271.115

One of these answers is correct.

Use approximations to find out which answer is correct.

(Total for Question 20 is 3 marks)

21 Work out $\frac{0.06 \times 0.0003}{0.01}$

Give your answer in standard form.

(Total for Question 21 is 3 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)



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

.....
(1)

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

Write down all the figures on your calculator display.

.....
(2)

(Total for Question 20 is 3 marks)

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

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

..... %

(Total for Question 21 is 3 marks)



22 (a) Expand and simplify $(x + 5)(x - 9)$

.....
(2)

(b) Factorise fully $9x^2 + 6x$

.....
(2)

(Total for Question 22 is 4 marks)

23 (a) Use your calculator to work out $\frac{29^2 - 4.6}{\sqrt{35 - 1.9^3}}$

Write down all the figures on your calculator display.

.....
(2)

(b) Write your answer to part (a) correct to 4 significant figures.

.....
(1)

(Total for Question 23 is 3 marks)

18 Work out an estimate for $\frac{790 \times 289}{49}$

(Total for Question 18 is 3 marks)

19 (a) Expand $x(x - 4)$

(1)

(b) Factorise $15y - 10$

(1)

(c) Solve $7(f - 5) = 28$

$f =$
(2)

(Total for Question 19 is 4 marks)



- 15 (a) Work out an estimate for the value of 92×1.63
You must show all your working.

.....
(2)

Given that

$$2.96 \times 3.2 = 9.472$$

- (b) find the value of 29.6×32

.....
(1)

(Total for Question 15 is 3 marks)



17 (a) Write 87 569 correct to 3 significant figures.

.....
(1)

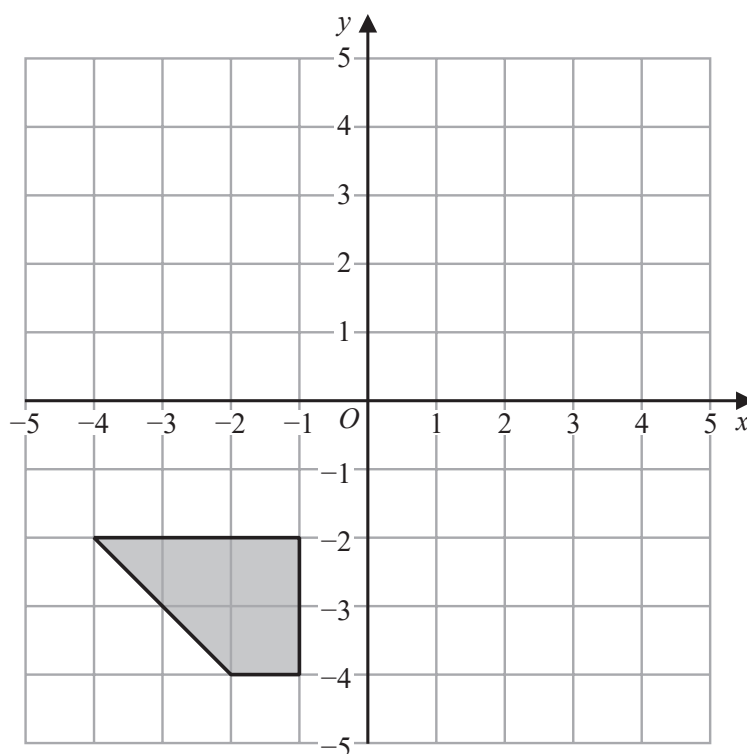
(b) Work out $\frac{(3.2 + 3.7) \times 4.9}{5.3 - 2.8}$

Give your answer as a decimal.

.....
(2)

(Total for Question 17 is 3 marks)

18



Rotate the shaded shape 90° anticlockwise about (0,0)

(Total for Question 18 is 2 marks)

25 A piece of glass has a mass of 27 g and a volume of 10 cm^3

Work out the density of the piece of glass.

..... g/cm^3

(Total for Question 25 is 2 marks)

26 Work out an estimate for $\frac{5.7 \times 8.2}{0.26}$

.....

(Total for Question 26 is 3 marks)



10 (a) Write 23 619 to the nearest 1000

.....
(1)

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

.....
(2)

(Total for Question 10 is 3 marks)

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

.....
(2)

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

.....
(2)

(Total for Question 11 is 4 marks)



20 (a) Use your calculator to work out the value of

$$\frac{42.1 - 29.53}{9.82 + 37.6}$$

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 significant figures.

.....
(1)

(Total for Question 20 is 3 marks)



23 It would take 120 minutes to fill a swimming pool using water from 5 taps.

(a) How many minutes will it take to fill the pool if only 3 of the taps are used?

..... minutes
(2)

(b) State one assumption you made in working out your answer to part (a).

.....
(1)

(Total for Question 23 is 3 marks)

24 A plane travels at a speed of 213 miles per hour.

(a) Work out an estimate for the number of seconds the plane takes to travel 1 mile.

..... seconds
(3)

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

.....
(1)

(Total for Question 24 is 4 marks)



24 Sophie drives a distance of 513 kilometres on a motorway in France.
She pays 0.81 euros for every 10 kilometres she drives.

(a) Work out an estimate for the total amount that Sophie pays.

..... euros
(3)

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

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

(Total for Question 24 is 4 marks)



22 A car travelled 4.96 miles at an average speed of 30.4 miles per hour.

- (a) Work out an estimate for the time taken by the car.
Give your answer in minutes.

..... minutes
(3)

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

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

(Total for Question 22 is 4 marks)



16 Berenika wants to buy 35 T-shirts.

Each T-shirt costs £5.80

Berenika does the calculation $40 \times 6 = 240$ to estimate the cost of 35 T-shirts.

(a) Explain how Berenika's calculation shows the actual cost will be less than £240

(1)

There is a special offer.

T-shirts £5.80 each.

Buy 30 or more T-shirts.
Get 10% off the total cost.

(b) Work out the actual cost of buying 35 T-shirts using the special offer.

£.....
(4)

(Total for Question 16 is 5 marks)



SUB-TOPIC N4b

BOUNDS & ERROR INTERVALS

Sub-topic N4b · 12 questions · 28 marks · lowest tariff first



22 Anil wants to invest £25 000 for 3 years in a bank.

Personal Bank

Compound Interest

2% for each year

Secure Bank

Compound Interest

4.3% for the first year
0.9% for each extra year

Which bank will give Anil the most interest at the end of 3 years?
You must show all your working.

(Total for Question 22 is 3 marks)

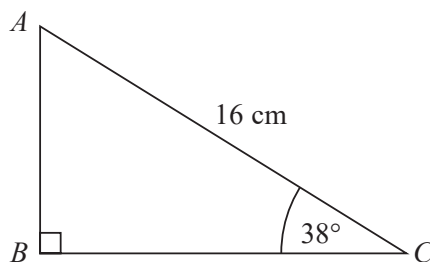
23 A number, n , is rounded to 2 decimal places.
The result is 4.76

Using inequalities, write down the error interval for n .

(Total for Question 23 is 2 marks)



24 ABC is a right-angled triangle.



Calculate the length of AB .

Give your answer correct to 2 decimal places.

.....cm

(Total for Question 24 is 2 marks)

25 Sally used her calculator to work out the value of a number y .

The answer on her calculator display began

8.3

Complete the error interval for y .

..... $\leq y <$

(Total for Question 25 is 2 marks)



- 22** The length of a pencil is 128 mm correct to the nearest millimetre.

Complete the error interval for the length of the pencil.

..... mm $\leq$ length < mm

(Total for Question 22 is 2 marks)

- 23** Tom and Adam have a total of 240 stamps.

The ratio of the number of Tom's stamps to the number of Adam's stamps is 3 : 7

Tom buys some stamps from Adam.

The ratio of the number of Tom's stamps to the number of Adam's stamps is now 3 : 5

How many stamps does Tom buy from Adam?

You must show all your working.

.....
(Total for Question 23 is 4 marks)



- 24 Andy cycles a distance of 30 km at an average speed of 24 km/h.
He then runs a distance of 12 km at an average speed of 8 km/h.

Work out the total time Andy takes.
Give your answer in hours and minutes.

..... hours minutes

(Total for Question 24 is 3 marks)

- 25 A number, m , is rounded to 1 decimal place.
The result is 9.4

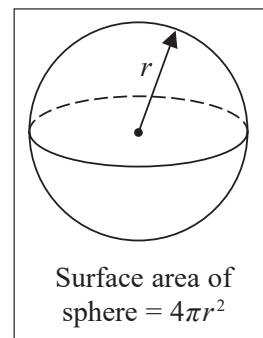
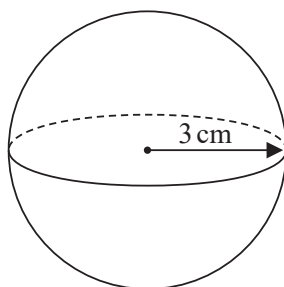
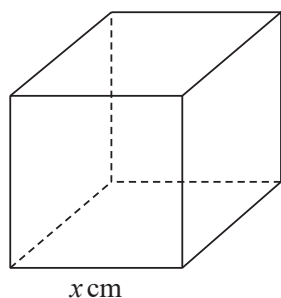
Complete the error interval for m .

..... $\leq m <$

(Total for Question 25 is 2 marks)



26 The diagram shows a cube with edges of length x cm and a sphere of radius 3 cm.



The surface area of the cube is equal to the surface area of the sphere.

Show that $x = \sqrt{k\pi}$ where k is an integer.

(Total for Question 26 is 4 marks)

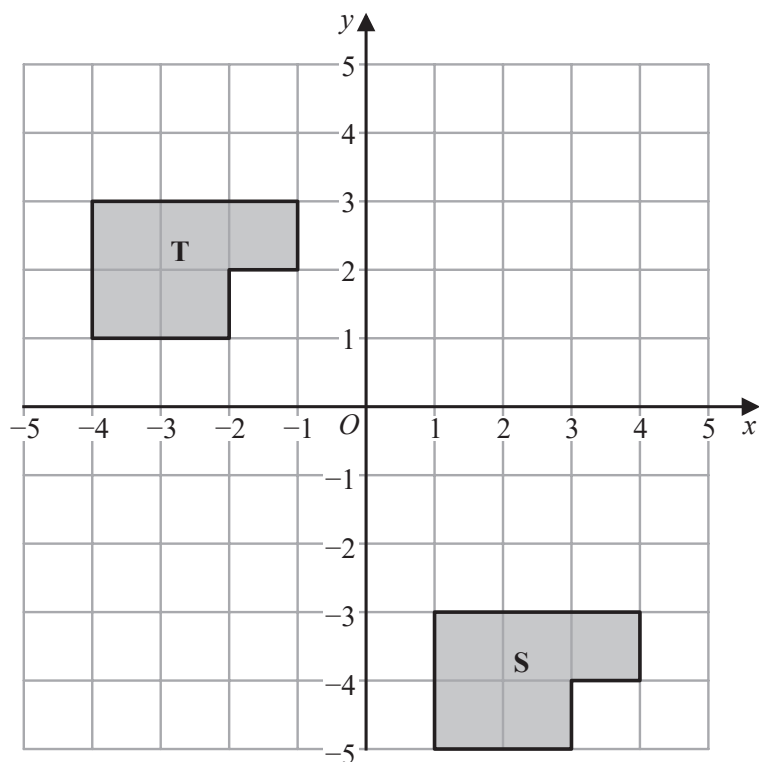
27 Freddie measured the length of a pencil as 7.2 cm correct to 1 decimal place.

Complete the error interval for the length, p cm, of the pencil.

..... $\leq p <$

(Total for Question 27 is 2 marks)

22



Describe fully the single transformation that maps shape S onto shape T.

.....

.....

.....

(Total for Question 22 is 2 marks)

23 The length of a football pitch is 90 metres, correct to the nearest metre.

Complete the error interval for the length of the football pitch.

..... m $\leq$ length < m

(Total for Question 23 is 2 marks)



- 26 A number, d , is rounded to 1 decimal place.
The result is 12.7

Complete the error interval for d .

$$\dots\dots\dots \leq d < \dots\dots\dots$$

(Total for Question 26 is 2 marks)

- 27 Tamsin buys a house with a value of £150 000
The value of Tamsin's house increases by 4% each year.

Rachel buys a house with a value of £160 000
The value of Rachel's house increases by 1.5% each year.

At the end of 2 years, whose house has the greater value?
You must show how you get your answer.

(Total for Question 27 is 4 marks)



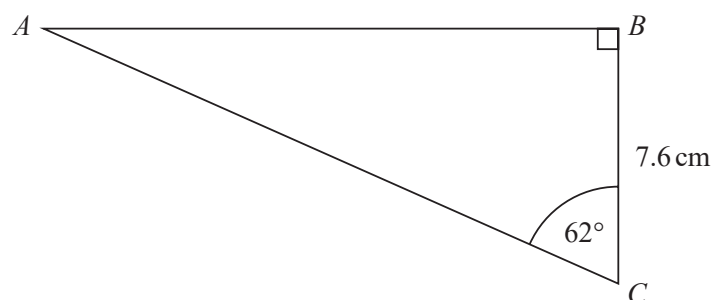
- 23 Jana used her calculator to find the value of a number t .
The answer on her calculator began 10.2

Complete the error interval for t .

..... $\leq t <$

(Total for Question 23 is 2 marks)

- 24 ABC is a right-angled triangle.



Calculate the length of AB .
Give your answer correct to 1 decimal place.

..... cm

(Total for Question 24 is 2 marks)



- 26 Karim rounds a number, n , to 1 decimal place.
The result is 23.8

Complete the error interval for n .

..... $\leq n <$

(Total for Question 26 is 2 marks)

- 27 A plane takes 2 hours 24 minutes to fly from Luton to Alicante.
The plane flies a distance of 1512 kilometres.

Work out the average speed of the plane.
Give your answer in kilometres per hour.

..... kilometres per hour

(Total for Question 27 is 3 marks)



22 There are only blue pens, green pens and red pens in a box.

The ratio of the number of blue pens to the number of green pens is 2 : 5

The ratio of the number of green pens to the number of red pens is 4 : 1

There are less than 100 pens in the box.

What is the greatest possible number of red pens in the box?

.....
(Total for Question 22 is 3 marks)

23 (a) Find the value of the reciprocal of 1.6
Give your answer as a decimal.

.....
(1)

Jess rounds a number, x , to one decimal place.
The result is 9.8

(b) Write down the error interval for x .

.....
(2)

(Total for Question 23 is 3 marks)



25 (a) Find the value of the reciprocal of 0.8

.....
(1)

$x = 4700$ correct to 2 significant figures.

(b) Complete the error interval for x .

..... $\leq x <$
(2)

(Total for Question 25 is 3 marks)



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

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

£
(1)

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

£
(1)

The value of Rita's house increased by 5%.

Her house then had a value of £210 000

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

£
(2)

(Total for Question 23 is 4 marks)

TOTAL FOR PAPER IS 80 MARKS



SUB-TOPIC N4c

UNITS, TIME & MONEY

Sub-topic N4c · 82 questions · 245 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 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)

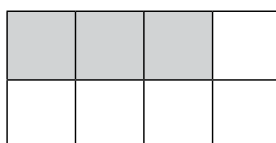


- 5 Change 4 kilometres into metres.

..... metres

(Total for Question 5 is 1 mark)

- 6 Here is a grid of squares.



Write down the ratio of the number of shaded squares to the number of unshaded squares.

.....

(Total for Question 6 is 1 mark)

- 7 $w = 4u + 3$

Find the value of w when $u = 8$

.....

(Total for Question 7 is 2 marks)

- 8 Here are the first five terms of a sequence.

1 3 6 10 15

Write down the next two terms of the sequence.

..... , ...

(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 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 31% as a fraction.

.....

(Total for Question 1 is 1 mark)

- 2** Change 3 metres into centimetres.

..... centimetres

(Total for Question 2 is 1 mark)

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

1.02 0.12 1.20 0.21

.....

(Total for Question 3 is 1 mark)

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

.....

(1)

- (b) Simplify $12p \div 4$

.....

(1)

(Total for Question 4 is 2 marks)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1** Write 45% as a decimal.

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

- 2** Write down two factors of 35

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

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

..... am
(Total for Question 3 is 1 mark)

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

.....
(Total for Question 4 is 1 mark)



17 (a) Expand $y(y + 5)$

.....
(1)

(b) Factorise $4a - 6$

.....
(1)

(c) Solve $2(5x - 4) = 21$

$x =$
(3)

(d) Simplify $4e^2f \times 5ef^3$

.....
(2)

(Total for Question 17 is 7 marks)

18 Change 1 m^2 into cm^2

..... cm^2

(Total for Question 18 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 40 centimetres into millimetres.

..... millimetres

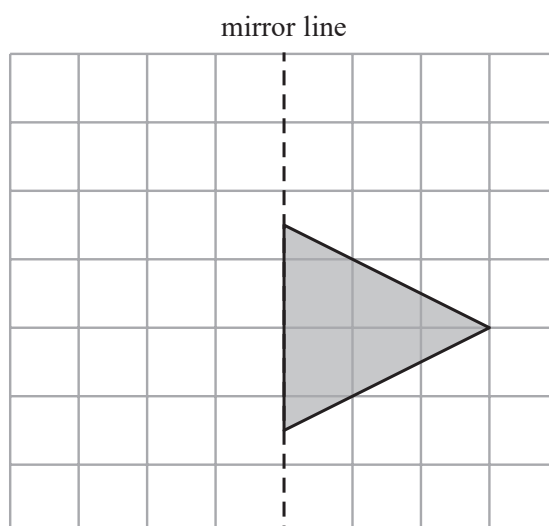
(Total for Question 1 is 1 mark)

- 2** Simplify $e + e + e + e$

.....

(Total for Question 2 is 1 mark)

- 3** On the grid, reflect the shaded triangle in the mirror line.



(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 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 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 the number three thousand one hundred and seven in figures.

.....

(Total for Question 1 is 1 mark)

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

.....%

(Total for Question 2 is 1 mark)

- 3** Simplify $m + m + m + m$

.....

(Total for Question 3 is 1 mark)

- 4** Change 4000 grams into kilograms.

..... kilograms

(Total for Question 4 is 1 mark)

- 5** 7 -5 3 9 -2

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

.....

(Total for Question 5 is 1 mark)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1** Write down two factors of 18

..... , ...

(Total for Question 1 is 1 mark)

- 2** Write 0.9 as a fraction.

.....

(Total for Question 2 is 1 mark)

- 3** Change 7 metres to centimetres.

..... centimetres

(Total for Question 3 is 1 mark)

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

.....

(Total for Question 4 is 1 mark)

- 5** Work out 50% of 240

.....

(Total for Question 5 is 1 mark)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 Write 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)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1** Write 17% as a fraction.

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

- 2** Write 140 minutes in hours and minutes.

..... hours minutes

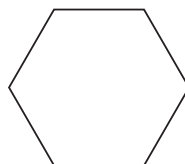
(Total for Question 2 is 1 mark)

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

0.57 0.507 0.5 0.05

.....
(Total for Question 3 is 1 mark)

- 4** Write down the mathematical name of this polygon.



.....
(Total for Question 4 is 1 mark)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 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)



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 (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** 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)



7 Shaun is 1.88 m tall.

David is 6 cm taller than Shaun.

How tall is David?

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

8 2 pens cost £2.38
5 folders cost £5.60

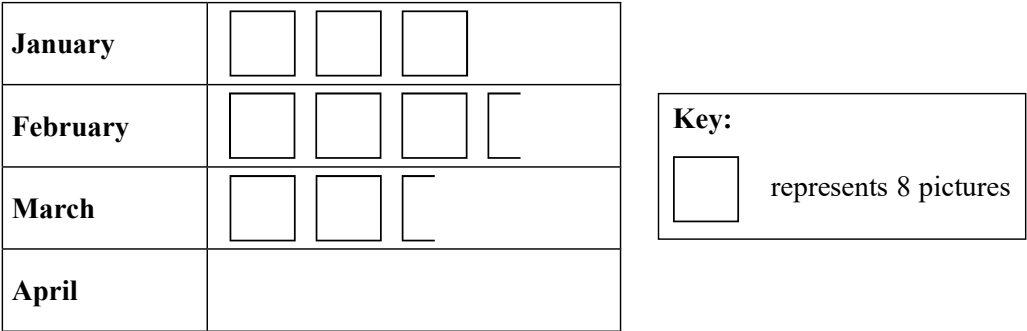
Ben wants to buy 20 pens and 20 folders.
He only has £50

Does Ben have enough money to buy 20 pens and 20 folders?
You must show how you get your answer.

(Total for Question 8 is 4 marks)



6 The pictogram shows information about the number of pictures sold in an art shop in each of January, February and March.



(a) Write down the number of pictures sold in January.

(1)

12 pictures were sold in April.

(b) Show this information on the pictogram.

(1)

(c) What was the total number of pictures sold in these four months?

(2)

(Total for Question 6 is 4 marks)

7 Work out the difference, in minutes, between 1 hour 25 minutes and $1\frac{1}{4}$ hours.

..... minutes

(Total for Question 7 is 2 marks)

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

The match finished at 14 10

At what time did the chess match start?

(Total for Question 12 is 2 marks)

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

(1)

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

(1)

(Total for Question 13 is 2 marks)

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

$$\frac{7}{12}$$

0.56

57%

$$\frac{6}{11}$$

0.558

(Total for Question 14 is 2 marks)



- 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)



5 Write down a sensible metric unit that could be used to measure

(i) the height of a mountain

.....
(1)

(ii) the weight of a button.

.....
(1)

(Total for Question 5 is 2 marks)

6 Four numbers add up to 76

One of the numbers is 13

The other three numbers are each the same number.

Work out the value of each of the other three numbers.

.....
(Total for Question 6 is 3 marks)



10 Jason says,

“The cube root of 27 is 9 because 27 divided by 3 is 9”

Is Jason correct?

You must give a reason for your answer.

(Total for Question 10 is 1 mark)

11 Elena’s height is 136 centimetres.
George’s height is 1.2 metres.

Elena’s height is greater than George’s height.

How many centimetres greater?

..... centimetres

(Total for Question 11 is 2 marks)

7 Fahima buys

2 packets of bread rolls costing £1.50 for each packet

1 bottle of ketchup costing £1.60

3 packets of sausages

Fahima pays with a £10 note.

She gets 30p change.

Fahima works out that one packet of sausages costs £2.30

Is Fahima right?

You must show how you get your answer.

(Total for Question 7 is 3 marks)

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

.....
(1)

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

.....
(2)

(Total for Question 8 is 3 marks)



9 Davos is a cleaner.

The table shows information about the time it will take him to clean each of four rooms in a house.

Room	Time
Kitchen	2 hours
Sitting room	1 hour 40 minutes
Bedroom	$1\frac{1}{2}$ hours
Bathroom	45 minutes

Davos wants to clean all four rooms in one day.
He will have breaks for a total time of 75 minutes.

Davos is going to start cleaning at 9 am.

Will he finish cleaning by 4 pm?
You must show all your working.

(Total for Question 9 is 3 marks)



13 Ellie makes hats.

She makes at least 17 hats per hour.

She is paid 46p for each hat she makes.

Reaze is a waiter.

He works 35 hours and is paid a total of £266

Show that Ellie's hourly rate of pay is more than Reaze's hourly rate of pay.

(Total for Question 13 is 3 marks)



- 5 Thais has a large bottle of shampoo.
There are 2 litres of shampoo in the large bottle.
- Thais also has some empty small bottles.
Each small bottle can be completely filled with 150 ml of shampoo.
- How many small bottles can be completely filled with shampoo from the large bottle?

(Total for Question 5 is 3 marks)

- 6 The incomplete pictogram shows information about the number of cycles sold in a shop on Tuesday, on Wednesday and on Thursday.

Tuesday	
Wednesday	  
Thursday	 
Friday	
Saturday	

Key:

A total of 20 cycles were sold on Tuesday, Wednesday and Thursday.

8 cycles were sold on Friday.

15 cycles were sold on Saturday.

Use this information to complete the pictogram.

(Total for Question 6 is 3 marks)

10 Tim and three friends go on holiday together for a week.

The 4 friends will share the costs of the holiday equally.

Here are the costs of the holiday.

£1280 for 4 return plane tickets

£640 for the villa

£220 for hire of a car for the week

Work out how much Tim has to pay for his share of the costs.

£

(Total for Question 10 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)



10 Bronwin works in a restaurant.

The table gives her rates of pay.

Day	Rate of pay
Monday to Friday	£8.40 per hour
Weekend	£11.20 per hour

Bronwin worked for a total of 20 hours last week.

She worked 8 of these 20 hours at the weekend.

Show that Bronwin was paid less than £200 last week.

(Total for Question 10 is 3 marks)



17 Adrian is going to make concrete.

He is going to use

180 kg of cement

375 kg of sand

1080 kg of stone

Cement, sand and stone are sold in bags.

1 bag cement	1 bag sand	1 bag stone
25 kg	22.5 kg	50 kg

Adrian already has

10 bags of cement

20 bags of sand

20 bags of stone

Work out what bags he needs to buy to make the concrete.

(Total for Question 17 is 3 marks)



- 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)



12 Here is part of a train timetable.

Brighton	07 22	07 29	07 32
London	09 00	08 32	08 48

Graham gets to the station in Brighton at 07 15

(a) Work out how many minutes he has to wait until 07 22

..... minutes
(1)

(b) Work out how long it will take the 07 22 train to get to London.

.....
(2)

(Total for Question 12 is 3 marks)



21 Liz goes on holiday to South Africa.

Liz wants to change £850 into South African rand.
She wants to get as many 200 rand notes as possible.

The exchange rate is £1 = 18.53 rand.

Work out the greatest number of 200 rand notes that Liz can get for £850

.....
(Total for Question 21 is 3 marks)

22 In October Sally drove 560 miles in her car.

The car travelled 34.5 miles for each gallon of petrol used.

Petrol cost £1.08 per litre.

1 gallon = 4.55 litres.

Work out the cost of the petrol the car used in October.

£.....

(Total for Question 22 is 4 marks)



- 8 Prasha has five blocks of wood.

The total weight of all five blocks of wood is 3 kilograms.

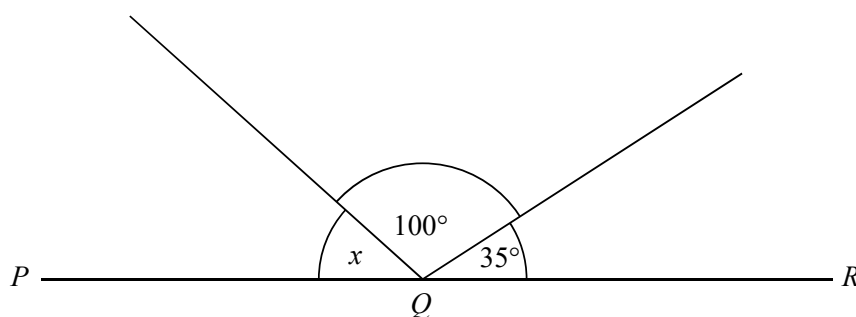
4 of the blocks of wood each have a weight of 650 grams.

Work out the weight, in grams, of the other block of wood.

..... grams

(Total for Question 8 is 3 marks)

- 9 PQR is a straight line.



Work out the size of angle x .

.....

(Total for Question 9 is 2 marks)



- 5 Find the value of 6^5

.....

(Total for Question 5 is 1 mark)

- 6 There are 14 rows of seats in a cinema.
There are 15 seats in each row.
- A film was shown in the cinema on Saturday.
Each ticket for the film cost £6.50
- The tickets that were sold cost a total of £1274
- How many tickets were **not** sold?

.....

(Total for Question 6 is 3 marks)



10 Here is the charge at a car park in Spain.

Car park

0.024 euros per minute

Jon parked his car in this car park.

Jon drove into the car park at 10 45

When he drove out of the car park he had to pay 8.40 euros.

At what time did Jon drive out of the car park?

(Total for Question 10 is 3 marks)



12 Cornflakes are sold in two sizes of box.

Size of box	Weight of cornflakes
small	450 g
large	750 g

Rae buys 3 small boxes of cornflakes and some large boxes of cornflakes.
In total she buys 5850 g of cornflakes.

Work out the number of large boxes of cornflakes Rae buys.

(Total for Question 12 is 3 marks)



- 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

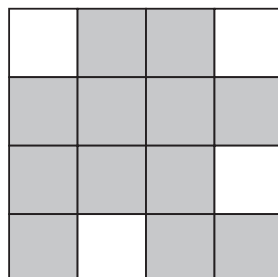
Does Liz get to the bus stop in time to get this bus?

You must show all your working.

(Total for Question 6 is 3 marks)



7



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

(Total for Question 7 is 2 marks)

8 Karim buys 200 tiles.

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

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

£

(Total for Question 8 is 3 marks)



- 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.

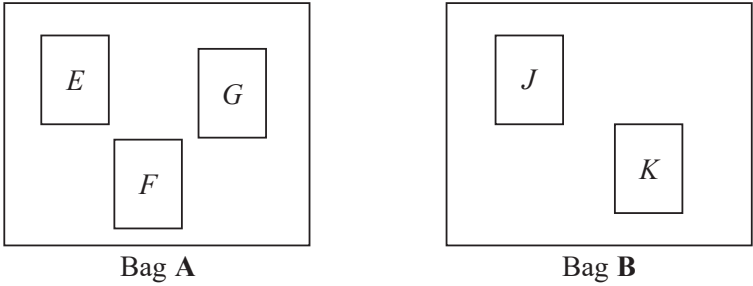
You must show all your working.

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

(Total for Question 10 is 2 marks)



- 7 There are three cards in bag A and two cards in bag B.
There is a letter on each card.



James takes a card from bag A and then a card from bag B.
List all the possible outcomes.

(Total for Question 7 is 2 marks)

- 8 On Monday, Sandy pays for 2 plane tickets, 7 nights in a hotel and 2 theme park tickets.

	dollars
each plane ticket	600
each night in a hotel	120
each theme park ticket	250

Show that Sandy pays more than 2500 dollars on Monday.

(Total for Question 8 is 3 marks)

10 Sonia wants to book a holiday.
The holiday will cost £1428

Sonia will pay a deposit of £150
She will then pay the rest of the cost in 6 equal monthly payments.

How much is each monthly payment?

£.....

(Total for Question 10 is 3 marks)



- 10** A shop sells jars of coffee.
Each jar of coffee costs £4

Michael has £23

- (a) Work out the greatest number of jars of coffee Michael can buy.

.....
(2)

In a sale on Wednesday, jars of coffee are sold at half price.

Michael thinks that he can now buy exactly twice the number of jars of coffee for £23

- (b) Is Michael correct?
You must give a reason for your answer.

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

(Total for Question 10 is 3 marks)



- 6 There are 3 litres of oil in a can.
Jermaine uses 700 millilitres of the oil.

Work out the amount of oil left in the can.
Give your answer in millilitres.

..... millilitres

(Total for Question 6 is 3 marks)



16 Solve $\frac{x}{7} + 9 = 4$

$x = \dots\dots\dots$

(Total for Question 16 is 2 marks)

- 17 Blake works 32 hours a week in the UK.
She is paid £473.28 per week.

Blake applies for a job in Australia.
The rate of pay is 26.40 Australian dollars per hour.

£1 = 1.796 Australian dollars

Blake thinks the rate of pay in Australia is greater than the rate of pay in the UK.

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

(Total for Question 17 is 3 marks)



9 Lucia is going on a skiing holiday.

The cost of ski hire is £26 per day.

The cost of a lift pass is £45 per day.

The cost of ski lessons is £23.50 per hour.

Lucia will pay for

ski hire for 5 days

a lift pass for 4 days

ski lessons for 8 hours.

Lucia has £500

Show that Lucia has enough money to pay for the total cost of ski hire, the lift pass and the ski lessons.

(Total for Question 9 is 3 marks)



- 6 Javid hires a car for 10 days.
He pays £45 for each day.
He also pays £30 for insurance.

Javid pays with ten £50 notes.
Work out how much change he should get.

£.....

(Total for Question 6 is 3 marks)



- 9 Sean works for a company.
His normal rate of pay is £12 per hour.

When Sean works more than 8 hours a day, he is paid overtime for each hour he works more than 8 hours.

Sean's rate of overtime pay per hour is $1\frac{1}{4}$ times his normal rate of pay per hour.

On Monday Sean worked for 10 hours.

Work out the total amount of money Sean earned on Monday.

£.....

(Total for Question 9 is 4 marks)

- 10 A farmer has 20 boxes of eggs.
There are 6 eggs in each box.

Write, as a ratio, the number of eggs in two boxes to the total number of eggs.
Give your answer in its simplest form.

.....

(Total for Question 10 is 2 marks)



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

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

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

..... minutes
(1)

Daniel goes from Whitefield to Manchester by bus.

Daniel takes 17 minutes to get from his house to the bus stop in Whitefield.

He takes 15 minutes to get from the bus stop in Manchester to work.

Daniel has to get to work by 10 am.

He leaves his house at 8.45 am.

- (b) Does Daniel get to work by 10 am?
You must show all your working.

(3)

(Total for Question 9 is 4 marks)



13 Annie sold

45 books at £1.20 each
34 candles at £1.50 each
some calendars at 90p each

She got a total of £150

Work out how many calendars Annie sold.

(Total for Question 13 is 4 marks)



- 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)



11 The table shows the costs of sending a parcel by the Express service and by the Rapid service.

Type of service	Cost
Express	£15.25
Rapid	£35.38

Brendan has to send 12 parcels.

It will be cheaper to send the parcels by the Express service than by the Rapid service.

(a) How much cheaper?

£.....
(3)

Luke wants to send 21 parcels by the Express service.

He does the calculation $20 \times £15 = £300$ to estimate the cost.

(b) Explain why Luke's calculation shows the actual cost will be more than £300

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

(Total for Question 11 is 4 marks)



21 Liz goes on holiday to South Africa.

Liz wants to change £850 into South African rand.
She wants to get as many 200 rand notes as possible.

The exchange rate is £1 = 18.53 rand.

Work out the greatest number of 200 rand notes that Liz can get for £850

.....
(Total for Question 21 is 3 marks)

22 In October Sally drove 560 miles in her car.

The car travelled 34.5 miles for each gallon of petrol used.

Petrol cost £1.08 per litre.

1 gallon = 4.55 litres.

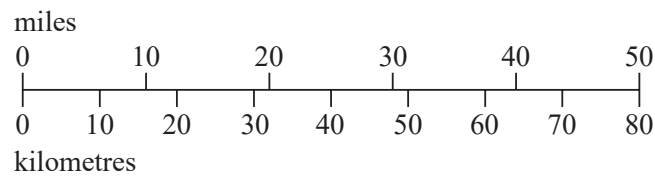
Work out the cost of the petrol the car used in October.

£.....

(Total for Question 22 is 4 marks)



- 9 This scale can be used to change between kilometres and miles.



- (a) Use the scale to change 40 kilometres to miles.

..... miles
(1)

Here is an approximate rule to change from kilometres to miles.

Divide the distance in kilometres by 10 and then multiply by 6

- (b) Use this approximate rule to change 40 kilometres to miles.

..... miles
(2)

- (c) Compare your answer to part (b) with your answer to part (a).

.....

 (1)

(Total for Question 9 is 4 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)



- 27 In Spain, Sam pays 27 euros for 18 litres of petrol.
In Wales, Leo pays £40.80 for 8 gallons of the same type of petrol.

$$\begin{aligned}1 \text{ euro} &= \text{£}0.85 \\ 4.5 \text{ litres} &= 1 \text{ gallon}\end{aligned}$$

Sam thinks that petrol is cheaper in Spain than in Wales.

Is Sam correct?

You must show how you get your answer.

(Total for Question 27 is 4 marks)



5 Simplify $3 \times w \times 5 \times t$

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

6 Fay is planning a trip to a theme park for 1 adult and 2 children.

These are the costs for the trip.

Total cost of petrol	£23
Tickets to theme park	£33 each adult £24.50 each child
Meals	£15 each adult £10 each child

Fay has £200 to spend.
She pays all the costs.

How much money does she have left?

£.....

(Total for Question 6 is 4 marks)



- 7 Myles writes down the distance readings from his car at the start and end of a journey.

Start of journey

1	2	4	6	8
---	---	---	---	---

miles

End of journey

1	2	8	4	5
---	---	---	---	---

miles

Myles knows that the cost of petrol for this journey is 13p per mile.

Work out the total cost of the petrol used for this journey.

Give your answer in pounds.

£.....

(Total for Question 7 is 4 marks)

- 8 Safiya wants to hire a van.
She uses this rule to work out the cost of hiring a van for a number of days.

$\text{Cost} = £45 \times \text{number of days}$
--

Safiya is going to hire the van for 7 days.

Work out the cost.

£.....

(Total for Question 8 is 2 marks)



27 (a) Change 8000 cm^3 to m^3

..... m^3
(1)

(b) Change a speed of 180 km per hour to metres per second.

..... metres per second
(3)

(Total for Question 27 is 4 marks)

28 There are 30 women and 20 men at a gym.

The mean height of all 50 people is 167.6 cm

The mean height of the 20 men is 182 cm

Work out the mean height of the 30 women.

..... cm

(Total for Question 28 is 3 marks)



- 10** Wayne begins walking at 8 30 am.
He walks for 1 hour and 45 minutes.

Wayne then rests for 15 minutes.
He then walks for 85 minutes to a cafe.

Does Wayne get to the cafe before 12 noon?
You must show how you get your answer.

(Total for Question 10 is 4 marks)



13 Chloe is making scrunchies.

Chloe has a large number of hair bands.

Each hair band costs 8p.

She buys 100 g of wool for £3

Chloe uses 1 hair band and 5 g of wool to make each scrunchy.

She makes as many scrunchies as she can.

Work out the total cost of each scrunchy that she makes.

Give your answer in pence.

.....p

(Total for Question 13 is 4 marks)

8 Curtis needs to buy some items for his sports club.

Here are the prices.

Item	Price
Footballs	£9.50 each
Hockey sticks	£30 for 2
Cricket bats	£23 each
Tennis balls	£5 for 4

Curtis needs to buy

5 footballs
6 hockey sticks
2 cricket bats
4 tennis balls.

Curtis has £200 to spend.

Show that Curtis can buy all the items he needs.

(Total for Question 8 is 4 marks)

6 Ryan buys

4 cakes at £1.30 each
2 identical tins of soup.

Ryan pays with a £10 note.
He gets £1.80 change.

How much does Ryan pay for each tin of soup?

£.....

(Total for Question 6 is 4 marks)



9 Anil has a job as a driver.
He is paid for each mile he drives.
He is also paid expenses.

One week Anil writes down the distance readings from his car.

Start of week:	4	7	2	4	1	miles
End of week:	4	7	8	7	9	miles

For this week, Anil is paid 47p for each mile he drives.
He is also paid expenses of £80

Work out the total amount that Anil is paid.
Give your answer in pounds.

£.....

(Total for Question 9 is 4 marks)

14 Harry works in a shop.
From Monday to Friday his basic rate of pay is £8 per hour.

On Saturday and Sunday, Harry’s rate of pay is $1\frac{1}{2}$ times his basic rate of pay.

The table shows the number of hours Harry worked each day last week.

Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Hours worked	6	6	6	6	6	4	3

Work out Harry’s total pay last week.

£.....

(Total for Question 14 is 4 marks)



15 Mr Page uses oil to heat his home.

At the beginning of November there were 1000 litres of oil in his oil tank.

Mr Page bought enough oil to fill the tank completely.

He paid 50p per litre for this oil.

He paid a total amount of £750

At the end of February Mr Page had 600 litres of oil in the tank.

He bought enough oil to fill the tank completely.

The cost of oil had increased by 4%.

Work out the total amount Mr Page paid for the oil he bought in February.

£.....

(Total for Question 15 is 5 marks)



- 4 The table gives information about the prices of cinema tickets.

Cinema ticket	Price
adult ticket	£7.80
child ticket	£5.80
family ticket (for 4 people)	£24.30

Mr Edwards and his 3 children go to the cinema.

It is cheaper for Mr Edwards to buy 1 family ticket rather than 4 separate tickets.

- (a) How much cheaper?

.....
(3)

The film starts at 6.45 pm.

The film lasts 102 minutes.

- (b) What time does the film finish?

.....
(2)

(Total for Question 4 is 5 marks)

- 8 Neil buys 30 pens, 30 pencils, 30 rulers and 30 pencil cases.

Price list

pens	6 for 82p
pencils	15 for 45p
rulers	10 for £1.25
pencil cases	37p each

What is the total amount of money Neil spends?

£.....

(Total for Question 8 is 5 marks)



12 Rehan is on holiday in the USA.

He has \$200 to spend on clothes.

Rehan buys

1 pair of trainers costing \$60

3 T-shirts costing \$25 each.

He also wants to buy a jacket costing \$80

(a) Has Rehan got enough money to buy the jacket?

You must show how you get your answer.

(3)

The trainers cost \$60

The exchange rate is $\$1 = \pounds 0.749$

Rehan says,

“The trainers cost less than £40”

Rehan is wrong.

(b) Using a suitable approximation, show working to explain why.

(2)

(Total for Question 12 is 5 marks)



12 Elena spent 120 minutes at a sports centre.

She played badminton for 50 minutes.

She used the swimming pool for $\frac{1}{6}$ of the 120 minutes.

She used the gym for 20% of the 120 minutes.

She then spent the rest of the 120 minutes in the cafe.

(a) Work out the total time, in minutes, that Elena spent in the cafe.

..... minutes
(4)

Elena got to the sports centre at 1.30 pm.

She had asked her friend to meet her in the cafe at 3 pm.

(b) Did Elena get to the cafe by 3 pm?
Give a reason for your answer.

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

(Total for Question 12 is 5 marks)



10 Here is part of a bus timetable between Wigan and Bolton.

Wigan	07 20		07 40		07 55
Blackrod	07 49		08 09		08 24
Horwich	08 00	08 14	08 20	08 29	08 36
Lostock	08 09	08 20	08 29	08 37	08 44
Park Road	08 14	08 34	08 41	08 48	08 58
Bolton	08 32	08 51	08 58	09 05	09 15

(a) How many minutes should the 07 20 bus take to go from Wigan to Lostock?

..... minutes
(2)

Alison goes from Blackrod to Bolton by bus.

One day Alison leaves her house at 08 00

She takes 7 minutes to walk to the bus stop in Blackrod.

She takes 15 minutes to walk from the bus stop in Bolton to work.

Alison needs to be at work for 09 20

(b) Will Alison get to work for 09 20?

You must show how you get your answer.

(3)

(Total for Question 10 is 5 marks)



- 9 Mandy buys a 12 kilogram bag of dog food.

Mandy's dog has 3 meals a day.

She gives her dog 105 grams of dog food for each of these meals.

How many complete weeks will the bag of dog food last?

You must show all your working.

(Total for Question 9 is 5 marks)



10 Here is part of a train timetable between Horwich and Manchester.

Horwich	07 13	07 46	08 14	08 44	09 14
Lostock	07 16		08 17		09 17
Bolton	07 21	07 54	08 22	08 52	09 22
Salford	07 36	08 05	08 36	09 05	09 36
Manchester	07 47	08 15	08 45	09 15	09 45

(a) How long should the 07 46 train from Horwich take to get to Salford?

..... minutes
(1)

Barnie has a job interview in Manchester.

Barnie takes 6 minutes to walk from his home to the station in Lostock.
He will take 8 minutes to walk from the station in Manchester to his interview.

Barnie needs to be at the interview no later than 09 00

(b) (i) What is the latest time Barnie can leave his house and be on time for the interview?

.....
(3)

The time of Barnie’s interview is changed.
Now he has to be at the interview no later than 09 15

(ii) What effect does the change of time have on the latest time Barnie can leave his house?

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

(Total for Question 10 is 5 marks)

12 Here is part of a train timetable from Liverpool to Birmingham.

Liverpool	08 07	08 47	09 07
Runcorn	08 25	09 03	09 26
Crewe	08 53	09 22	09 55
Stafford	09 11	09 51	10 14
Wolverhampton	09 30	–	10 31
Birmingham	09 50	10 34	10 50

- (a) Which train should take the least time to go from Liverpool to Crewe?
You must show how you get your answer.

(3)

Rose gets to the station in Wolverhampton at 09 25
She wants to catch the next train to Birmingham.

This train is delayed by 35 minutes.

- (b) How many minutes does Rose have to wait for the train?

..... minutes
(2)

(Total for Question 12 is 5 marks)

- 14** Andy went on holiday to Canada.
His flights cost a total of £1500

Andy stayed for 14 nights.
His hotel room cost \$196 per night.

Andy used wifi for 12 days.
Wifi cost \$5 per day.

The exchange rate was \$1.90 to £1

- (a) Work out the total cost of the flights, the hotel room and wifi.
Give your answer in pounds.

£
(5)

- (b) If there were fewer dollars to £1, what effect would this have on the total cost, in pounds, of Andy's holiday?

.....
(1)

(Total for Question 14 is 6 marks)

4 Ken buys some fruit.

He buys apples, bananas, peaches and oranges.

Ken buys

4 apples weighing 125 g each

2 bananas weighing 170 g each

3 peaches weighing 135 g each

Each orange has a weight of 90 g.

The fruit has a total weight of 1.785 kg.

(a) Work out how many oranges Ken buys.

.....
(3)

Jane wants to buy 15 tomatoes.

She asks for 1 kg of tomatoes at a shop.

Jane assumes that each tomato has a weight of 75 g.

(b) (i) If Jane's assumption is correct, will she get 15 tomatoes?
You must show how you get your answer.

(2)

(ii) If Jane's assumption is **not** correct, could she get 15 tomatoes?
Justify your answer.

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

(Total for Question 4 is 6 marks)



8 Nina orders some items from a DIY shop.
Here is her bill.

Item	Quantity	Cost of each item	Total
Pack of screws	4	£29.99	£119.96
Tin of paint	2	£24.95	£.....
Wooden plank		£7.75	£232.50
Delivery charge			£14.95
Total cost			£.....

(a) Complete all the missing information in the bill.

(3)

At the beginning of January, Jeff had £892.48 in his bank account.

During January, Jeff

- had £4.47 interest added to his account
- paid £240 into his account
- spent £365.50 from his account.

(b) How much money did Jeff have in his account at the end of January?

£.....

(3)

(Total for Question 8 is 6 marks)

MARK SCHEMES

official mark schemes, in the same order as the questions



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

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

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: 1MA1/1F				
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: 1MA1/2F					
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: 1MA1/3F				
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: 1MA1/1F				
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: 1MA1/3F				
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: 1MA1/1F				
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: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
1	$\frac{37}{100}$	B1	or any other equivalent fraction	
2	29 000	B1	cao	
3	6e	B1		
4	25	B1	cao	
5	27	B1	cao	
6	Yes with supporting calculations	M1 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 16 45 – “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: 1MA1/1F				
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	

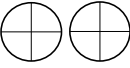
Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
1	1480	B1	cao	
2	$\frac{7}{10}$	B1	oe fraction	
3	3	B1	cao	
4	Suitable number eg 725	B1	for a suitable 3 digit number ending in 0 or 5	
5	40	B1	cao	
6	-11, -7, -2, 3, 8, 10	B1	for -11, -7, -2, 3, 8, 10	Accept reverse order
7	(a) 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: 1MA1/3F				
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	
6 (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 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 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	
8 (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: 1MA1/2F				
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: 1MA1/3F				
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: 1MA1/3F				
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: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
15 (a)	330	M1	for $4 \times 70 + 50$ oe	May be seen as sum of four 70s and a 50 $n \times (70 + 50)$ or ambiguous working gets 0 marks
		A1	cao	
		M1	for use of inverse operations eg $(680 - 50) \div 70$ OR rearranges an equation to solve eg $70x + 50 = 680$ rearranged to isolate x term. OR ft (a) eg $((680 - "330") \div 70) + 4$	
		A1	cao or ft their (a)	
(b)	9	M1	for use of inverse operations eg $(680 - 50) \div 70$ OR rearranges an equation to solve eg $70x + 50 = 680$ rearranged to isolate x term. OR ft (a) eg $((680 - "330") \div 70) + 4$	Need not have brackets; can be written in an incorrect order if the intention is clear A correct but embedded answer gets 1 mark
		A1	cao or ft their (a)	
		M1	for a process to work out the missing length eg $6 - 4 (=2)$ or for a process to work out the length of the base eg $4 + 6 (=10)$ OR for finding total perimeter of 2 rectangles, eg $2(6 + 4 + 6 + 4) (=40)$ OR for writing at least 5 figures correctly on the diagram	
		A1	cao or ft their (a)	
16	32	P1	for a process to work out the missing length eg $6 - 4 (=2)$ or for a process to work out the length of the base eg $4 + 6 (=10)$ OR for finding total perimeter of 2 rectangles, eg $2(6 + 4 + 6 + 4) (=40)$ OR for writing at least 5 figures correctly on the diagram	May be seen on the diagram May be seen in different forms
		P1	for a process to work out the perimeter eg $4 + "2" + 6 + 4 + 6 + 4 + 6$ or $20 + 20 - 2 \times 4$ or $16 + 14 + "2"$	
		A1	cao SC B1 for 30	
		A1	cao or ft their (a)	
17	9	M1	for a method to find the scaling factor eg $"10.8" \div "1.8" (=6)$ or $"1.8" \div 1.5 (=1.2)$ or $1.5 \div "1.8" (=0.833..)$ or a sf given from 5.5 to 6.5 or from 1.06 to 1.4 or from 0.75 to 0.94 eg used with 1.5	Could be shown on the diagram by appropriate working eg 6 steps Allow 10.6 to 11.0 and 1.6 to 2.0 for their measured lengths.
		A1	accept an answer in the range 8 to 10	
		M1	for a method to find the scaling factor eg $"10.8" \div "1.8" (=6)$ or $"1.8" \div 1.5 (=1.2)$ or $1.5 \div "1.8" (=0.833..)$ or a sf given from 5.5 to 6.5 or from 1.06 to 1.4 or from 0.75 to 0.94 eg used with 1.5	
		A1	accept an answer in the range 8 to 10	

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
14	(a) 7	B1	cao	Simply quoting values for median, range is insufficient; they must be compared.
	(b) 5	B1	cao	
	(c)	C2 (C1)	ft for correct comparison of both medians and ranges, eg. median of boys shoe sizes is greater than the median of the girls shoe sizes and the range of the boys shoe sizes is greater than the range of the girls shoe sizes. ft for a correct comparison of either medians or ranges)	
15	5	M1	for 40.15 or 8.03 seen in working	
		A1	cao	
16	Triangle drawn	B2 (B1)	for an isosceles triangle drawn with the product of the base and perpendicular height being 24, eg. 6×4 or 4×6 or 8×3 or 3×8 for any isosceles triangle drawn or for any triangle with 24 as the product of the base and the perpendicular height)	Accept triangle drawn in any orientation or drawn freehand.
17	(a) $12 - 6x$	B1	for $12 - 6x$ (accept $-6x + 12$)	Do not accept ambiguous algebraic expressions Do not accept equivalent expressions not fully factorised
	(b) 16	M1 A1	for a correct first step, eg. $3y = 12 \times 4 (= 48)$ or $\frac{y}{4} = \frac{12}{3}$ cao	
	(c) $2(2p + 3)$	B1	cao	
18	(a) 2500	B1	cao	
	(b) 0.09	B1	cao	



Paper: 1MA1/1F				
Question	Working	Answer	Mark	Notes
11 (a)		36	M1 A1	demonstrates the start of a method that could lead to the answer, eg recognition of square numbers, or use of differences, or diagrams cao
(b)		80	M1 A1	demonstrates the start of a method that could lead to the answer, eg repeated addition of 4, or 20×4 cao
(c)			C2 (C1)	conclusion with supportive evidence, eg $\text{odd} \times \text{odd} = \text{odd}$, or all odd numbers squared will be odd. (e.g. starts to work with (generate) square numbers for odd patterns or $(2n + 1)^2$ eg $1 \times 1 = 1$, or generates sequence for squares using differences)
12		$\frac{7}{17}$	M1 A1	for $\frac{a}{17}$ where $a \neq 7$ but < 17 or $\frac{7}{b}$ where $b \neq 17$ but > 7 oe
13 (a)		1.5 to 2	B1	in the range 1.5 to 2
(b)		7.5 to 12	M1 A1	for scale factor in the range 5 to 6 (ft) or for answer in the range 7.5 to 12



Paper 1MA1: 1F				
Question	Working	Answer	Mark	Notes
19		180, 210, 375, 3	M1	for $\frac{24}{16}$ or 1.5 or $\frac{16}{24}$ or 0.5 of any figure in the recipe calculated or amount of any ingredient for 1 flapjack or 3 (tablespoons)
			M1	for method to scale at least one ingredient in grams eg 120×1.5 or 140×1.5 or 250×1.5
			A1	for all quantities correct
20		Ami	M2	for an approximate calculation eg $\frac{600}{16+5}$ or $\frac{600}{21}$ or $\frac{600}{20}$ or $\frac{600}{20+5}$ or $\frac{600}{25}$ or $\frac{600}{25+5}$ or $\frac{600}{30}$ or $\frac{595}{20}$
		with estimate	(M1	for using 600 or 5 or 4)
			C1	Ami's answer /27.1115 is closest with accurately calculated figure from approximation
21		1.8×10^{-3}	M2	for $\frac{6 \times 10^{-2} \times 3 \times 10^{-4}}{1 \times 10^{-2}}$ or 18×10^{-4} or 0.0018 as the answer
			(M1	for 6×0.0003 or 0.06×0.03 or 1.8×10^0 ($n \neq -3$) or $0.000018 \div 0.01$ or rewriting one number in standard form)
			A1	cao



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



Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
22 (a)	$x^2 - 4x - 45$	M1	for 3 of 4 terms correct or 4 terms correct ignoring signs	3 terms correct can be implied, eg $x^2 - 4x + c$
		A1	cao	
		(B1	for $3x(3x + 2)$	
(b)	$3x(3x + 2)$	(B1	for $3(3x^2 + 2x)$ or $x(9x + 6)$ or $3x(ax + b)$ where a and b are integers or $(3x + 2)$ as a factor)	
23 (a)	157.668(255)	M1	for 836.4 or 5.304(809139) or 28.141 or a truncated or rounded version of 157.668255 to no less than 3 sf	Answer must be given to at least 3 decimal places rounded or truncated Accept a clear indication of the decimal point. Check first 3 decimal places only
		A1	for 157.668(255)	
		(B1	ft from part (a) provided answer to (a) has at least 5 sf	
(b)	157.7	B1	ft from part (a) provided answer to (a) has at least 5 sf	
24	35 to 42	M1	for drawing a suitable line of best fit or for a line from $x = 34$ or for a point marked on the grid at $(34, y)$, y in the range 33 to 44	Line at $x = 34$ does not have to be full length of grid but should be in or reach the data set. Acceptable values for the data set are $y = 33$ to $y = 44$
		A1	answer in the range 35 to 42	

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

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



Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
16	Comments	C1	makes some comment about the labels Acceptable examples states what labels should be (not angles) labels are missing The label in the table does not match the label with the pie chart Not acceptable examples angles not marked on the pie chart	
		C1	comments about the inaccuracy of the angles in the pie chart Acceptable examples pie chart is not accurate / should be 108, 126, 126 angles drawn inaccurately They haven't converted the number of potatoes to angles Need to scale the numbers in the table Not acceptable examples pie chart is wrong/ sectors are the wrong size (the angles) do not add up to 360	
17	(a)	B1	cao	
	(b)	M1	for 33.81 or 2.5 or $\frac{3381}{250}$ or digits 13524	
		A1	cao	
18	Rotation drawn	B2	correct shape drawn at (2,-1), (2,-4), (4,-2), (4,-1)	
		(B1	for a correct shape drawn clockwise 90° about (0,0) or a shape drawn in the correct quadrant with the correct orientation or a shape with at least 3 vertices correct	



Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
26	160 to 200	M1	rounds one figure appropriately (6, 8, 0.25 or 0.3)	Do not award any marks for an accurate calculation if then rounded
		M1	(dep) for carrying out an accurate calculation using 0.25 or 0.3 eg $6 \div 0.3 = 20$, $8 \div 0.25 = 32$, $6 \div 0.25 = 24$ or digits 16	
		A1	Answer in the range 160 to 200 from appropriate rounding	
27	(a)	M1	for expanding bracket to obtain 4 terms with all 4 correct without considering signs or for 3 terms out of 4 correct with correct signs	NB $6x^2 - 11x$ or $-11x - 10$ can be considered 3 terms out of 4 correct with correct signs
		A1	cao	
	(b)	B1	oe	

Qu 8a

Place	Tally	Frequency
castle	I	11
farm	II	7
museum	I	6



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



Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
19 (a)	2	B1	cao	
	2.36	M1	for starting method by multiplying ages by frequencies, with at least 3 correct, eg $1 \times 16, 2 \times 15, 3 \times 7, 4 \times 9, 5 \times 3$ or at least three of 16, 30, 21, 36, 15	Do not award this mark if the final answer comes from an alternative incorrect method, eg $50 \div 5$ May be seen next to table 118 implies this mark $\sum fx$ must come from 5 products If a correct answer is shown and then incorrectly rounded award full marks
		M1	(dep on M1) for $\sum fx \div \sum f$, eg $118 \div 50$ or $118 \div (16 + 15 + 7 + 9 + 3)$ or $(1 \times 16 + 2 \times 15 + 3 \times 7 + 4 \times 9 + 5 \times 3) \div 50$	
		A1	accept 2.4 from correct working	
20 (a)	0.265(0780261)	M1	for 12.57 or 47.42 or 0.2 or 0.26 or 0.27 or 0.3 or $\frac{1257}{4742}$ oe	Answer must be given to at least 3 decimal places rounded or truncated Check first 3 decimal places only
		A1	for 0.265(0780261)	
	(b) 0.27	B1	for 0.27 or ft from part (a) provided answer to (a) has at least 3 sf	



Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
23 (a)	200	M1	for $120 \times 5 \div 3$ oe	Any statement referring to the same amount of water flowing from each tap is acceptable.
		A1	cao	
		C1	Statement that each tap fills at the same rate or that the rate does not change over time Examples Acceptable responses: Taps are running at the same speed They (clearly referring to taps) all fill the pool with the same volume of water The amount of water is the same in the same time (again referring to taps) Each tap is doing a fifth of the filling That all taps take equal time to fill the pool All taps produce the same amount of water That the water flow stays at the same rate over the whole time. Non acceptable responses It will take more time because there are less taps The less taps used the longer it takes to fill the pool That 1 tap can take up to 24 mins each 3 taps will take longer to fill the pool	
24 (a)	16 to 20	P1	for using time = $\frac{\text{distance}}{\text{speed}}$, eg $\frac{1}{200}$ or $\frac{1}{213}$ or for 1 hour = 60×60 (= 3600) seconds	Calculation could be done in stages.
		P1	complete process, eg $\frac{1}{200} \times 60 \times 60$ oe or $\frac{1}{213} \times 60 \times 60$	
		A1	for answer in range 16 to 20	
(b)	decision with reason	C1	(dep on correct use of time = $\frac{\text{distance}}{\text{speed}}$) for reason related to their response to part(a), eg overestimate as speed rounded down	



Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
24 (a)	Estimated value	P1	for using a value rounded to 1sf in a calculation eg $500 \div 10$ or 500×0.8 or 510×0.8 or 513×0.8 or 500×0.81	Their rounded value must be used in a calculation Rounding may occur after a correct process, eg $513 \div 10 = 51.3 \approx 50$ and 50×0.81 $513 \div 10 = 51.3 \approx 51$ and 51×0.8 scores P1P1 Accept 0.81 rounded to 0.80 for this mark Condone 0.81 rounded to 1 for this mark.
		P1	for a full process to find the total amount eg $500 \div 10 \times 0.8 (= 40)$ or $510 \div 10 \times 0.8 (= 40.8)$ or $500 \div 10 \times 0.81 (= 40.5)$ or [distance] $\div 10 \times$ [amount] oe	Where [distance] is their rounded 513 or 513 and [amount] is their rounded 0.81 or 0.81 Accept $513 \div 10 \times 0.81$ for this mark.
		A1	for a correct answer following through their correct rounded value(s)	Do not award this mark if 0.81 is rounded to 1
	(b) underestimate with reason	C1	ft from (a) eg underestimate as numbers rounded down	Must relate to estimation and not rounding of their final answer and they must have a final answer to part (a)

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
21	180 – 4e and reason	M1 A1 C1	for angle $ACD = e$ or for angle $ADC + \text{angle } BAD = 180$ or for angle $BAX = 3e$ (where X lies on DA extended) for 180 – 4e oe (dep M1) for an appropriate reason relating to parallel lines from <u>alternate</u> angles are equal or <u>allied</u> angles / <u>co-interior</u> angles add up to 180 or for <u>corresponding</u> angles are equal	Angles must be clearly labelled on the diagram or otherwise identified May be unsimplified Underlined words need to be shown Reason needs to be linked to their method, which can be implied from correctly identified angles (stated or written on the diagram)
22	(a) Estimated time	P1 P1 or for a complete process, eg $30 \div 60 (= 0.5)$ and $5 \div "0.5"$ or $30 \div 5 (= 6)$ and $60 \div "6"$ or $4.96 \times \frac{60}{30}$ A1	for rounding of distance = 5 (miles) or speed = 30 (mph) (dep) for using time = distance / speed eg $5 \div 30$ or for a complete process, eg $30 \div 60 (= 0.5)$ and $5 \div "0.5"$ or $30 \div 5 (= 6)$ and $60 \div "6"$ or $4.96 \times \frac{60}{30}$ for a correct answer following through their correct rounded distance and/or speed	
	(b) Overestimate with reason	C1	ft from (a) for decision with correct reasoning, eg overestimate as dividing a larger number by a smaller number or overestimate as miles rounded up and speed rounded down	Ft the rounding and process from (a) Must relate to estimation and not rounding of their final answer and they must have a final answer to part (a)

Paper 1MA1: 1F				
Question	Working	Answer	Mark	Notes
16 (a)		Explanation	C1	eg States over-estimated for both values
(b)		182.7(0)	P1	for a process to find 10% of a value stated in the question eg $\frac{10}{100} \times 5.80 (=0.58)$ or $\frac{10}{100} \times 35 (=3.5)$ oe or $35 \times 5.80 (=203)$, allow $30 \times 5.80 (=174)$ or $35 \times [\text{reduced price}]$
			P1	for a process to find 90% of a value stated in the question eg $35 - "3.5" (=31.5)$ or $0.9 \times 5.80 (=5.22)$ oe or $\frac{10}{100} \times "203" (=20.3)$ or $\frac{10}{100} \times "174" (=17.4)$ oe
			P1	for a complete process to find actual cost of 35 eg $0.9 \times 5.80 \times 35$ oe
			A1	cao
				SC B2 156.6(0)
17		$\frac{4}{9}$	M1	for listed outcomes (allow 1 error eg omission or repeat) or fractions $\frac{1}{3} \times \frac{2}{3} + \frac{2}{3} \times \frac{1}{3}$
			A1	for $\frac{4}{9}$ oe
18		135	M1	for $450 \div "2+3+5" (=45)$ or $\frac{3}{10} \times 450 (=135)$ or 5 parts are 225 or 2 parts are 90 indicated
			A1	Cao



Paper 1MA1: 2F				
Question	Working	Answer	Mark	Notes
22		Secure Bank (supported)	P1 P1 C1	for a process to work out the interest after one year e.g. $0.02 \times 25000 (= 500)$ or $0.043 \times 25000 (= 1075)$ or for 1.02 or 25500 or 1.043 or 26075 for process to find value of the investment after 3 years or the multiplicative factor for 3 years at one of the banks, e.g. $25000 \times 1.02 \times 1.02 \times 1.02$ oe (= 26530...) or $1.02^3 (= 1.0612...)$ or $25000 \times 1.043 \times 1.009 \times 1.009$ oe (= 26546...) or $1.043 \times 1.009 \times 1.009 (= 1.0618.....)$ [accept total interest of 1530...or 1546...if final values of investment are not found] for Secure Bank from correct figures eg 26530.. and 26546..or 1530.. and 1546.. or 1.0612.. and 1.0618
23		$4.755 \leq n < 4.765$	B2 [B1]	for $4.755 \leq n < 4.765$ for 4.755 or 4.765 or 4.7649]
24		$x = -8, x = 3$	M1 M1 A1	for factorisation or for substitution into quadratic formula ($x \pm a$)($x \pm b$) where product of a and $b = 24$, eg ($x \pm 4$)($x \pm 6$) or difference of a and $b = 5$, eg ($x \pm 2$)($x \pm 7$) $\frac{-5 \pm \sqrt{5^2 - 4 \times 1 \times -24}}{2}$ oe (condone one sign error) for ($x + 8$)($x - 3$) or for $\frac{-5 \pm \sqrt{121}}{2}$ oe cao



Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
24	9.85	M1	for $\sin(38) = \frac{AB}{16}$ oe or alternative method to find AB	
		A1	for an answer in the range 9.76 to 9.92	
25	8.3 and 8.4	B1	for 8.3 in the correct position	Accept 8.39 or 8.399...
		B1	for 8.4 in the correct position	
26	168	P1	for working with ratio to find the amount for C or D eg. $1.5 \times 2 (=3)$ or (A, B, C, D =) 2, 7, 3, 3 oe OR for suitable expressions linking A with C or D, eg. $A = x$, $C = 1.5x$	
		P1	for “2 + 3 + 3 + 7” (=15) OR adds 4 suitable expressions, eg. “ $x + 3.5x + 1.5x + 1.5x$ ” (= 7.5x)	
		P1	for a complete process to find the amount of money eg. $360 \div “15” \times 7$ OR $360 \div “7.5” \times 3.5$	
		A1	cao	

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
21	Two statements	C2	Two different statements Acceptable There is no 'frequency' label / y-axis is not labelled / no title for the y-axis The polygon should not be closed / have a line at the bottom / have first and last points connected (15, 6) has been plotted incorrectly / at (15, 8) / (The first point is at) 8 rather than 6 / First point is on an incorrect frequency Not acceptable There is no title / Points should be joined with a curve x-axis doesn't start at 0 There is no label The axes have not been labelled (x and y) The points haven't (all) been plotted correctly $10 < w \leq 20$ and $30 < w \leq 40$ have been plotted wrong The first point is plotted incorrectly, its at (15, 7) not (15, 6) The points have been joined up wrong / Points should not be joined in the shape of a triangle / They've connected all the points Done the midpoints rather than the numbers on the right side / The points are in the middle	Ignore additional statements provided no contradiction
		(C1	for one statement eg from those above)	
22	127.5 and 128.5	B1	for 127.5 in the correct position	
		B1	for 128.5 in the correct position	Accept 128.49 or 128.499...

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
23 (a)	n^8	B1	cao	May be seen as simplification in original fraction Accept c^1d^3 Must see carried out correctly, ie at least $5x > 7 \times 2$ not just intention seen. Allow other signs for this mark.
		M1	for partial simplification, eg c or d^3	
		A1	for cd^3	
		M1	for $5x > 14$ or $5x = 14$ or critical value, $\frac{14}{5}$ oe	
(c)	$x > \frac{14}{5}$	A1	$x > \frac{14}{5}$ or $x > 2\frac{4}{5}$ or $x > 2.8$	
24	2 hours 45 minutes	P1	for $30 \div 24 (= 1.25)$ or $12 \div 8 (= 1.5)$	May be written in hours and/or minutes or 3 h 15 min or 2 h 75 min
		P1	for finding the sum of their two times eg "1.25" + "1.5" (= 2.75) or 165 (minutes)	
		A1	cao	
25	9.35, 9.45	B1	for 9.35 in the correct position	Accept 9.449 oe or 9.4499... oe
		B1	for 9.45 in the correct position	

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
25	12	P1 P1 A1	for a process to find the area of cross section, eg $750 \div 25 (= 30)$ oe or $\frac{1}{2} \times 5 \times h$ oe for a correct equation in h , eg $750 \div 25 = \frac{1}{2} \times 5 \times h$ oe or $\frac{1}{2} \times 5 \times h \times 25 = 750$ oe or for a complete process to find h , eg. $\frac{750}{25} \times \frac{2}{5}$ oe or “30” $\times 2 \div 5$ cao SC B1 for answer of 6 if P0 scored	May use any letter for h or may use ?
26	Shown	M1 M1 M1 A1	for a correct expression for the area of one face of the cube, eg. x^2 or a correct expression for the surface area of the cube, eg $6 \times x^2$ for a correct expression for the surface area of the sphere, eg $4 \times \pi \times 3^2 (= 36\pi)$ for forming a suitable equation, eg $6 \times x^2 = 4 \times \pi \times 3^2$ or $6x^2 = “36\pi”$ for completing the method to $x = \sqrt{6\pi}$ or $k = 6$	No marks for $x = \sqrt{6\pi}$ without any working. $6 \times x^2 = 4 \times \pi \times 3^2$ $x^2 = 36\pi \div 6$ $x = \sqrt{6\pi}$
27	7.15 and 7.25	B1 B1	for 7.15 as the lower bound for 7.25 as the upper bound	Accept 7.249 oe or 7.2499... oe
28 (i)	-4	B1	cao	
(ii)	(0, 3)	B1	cao	

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
23	89.5 and 90.5	B1	for 89.5 in the correct position	Accept 90.49 or 90.499(...)
		B1	for 90.5 in the correct position	
24 (a)	19	P1	for process to find area available at festival B, eg $700 \times 2000 (=1\ 400\ 000)$	Accept either number rounded eg 207 or 188
		P1	for finding the area available per person at one festival, eg $80\ 000 \div 425 (= 188.23..)$ or $[\text{area}] \div 6750 (= 207.40..)$	
		P1	for finding the area available per person at both festivals, eg $80\ 000 \div 425 (= 188.23..)$ and $[\text{area}] \div 6750 (= 207.40..)$	Accept both numbers rounded eg 207 and 188
		A1	answer in the range 18.7 to 19.5	
	(b) explanation	C1	for a valid statement relating to scale factor for area, Acceptable examples there are 10000 (cm ²) in 1 (m ²) because 1 m ² is the same as $100 \times 100 = 10000$ cm ² there are 2 side lengths that change from 1 m to 100 cm $300 \div 3$ is 100 should use 100 ² $300 \div 100 \div 100 = 0.03$ $3 \times 100 \times 100 = 30000$ Because it's area not length. Because it's in m ² not just metres He hasn't taken the squared sign into account Not acceptable examples there are 1000 cm in 1 m Callum is correct because $300 \div 3$ is 100 $3^2 = 9$ $300 \times 300 = 90000$ You have to square the number	



Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
25	168	P1	for a start to the process, eg $\frac{57}{100} \times 800 (= 456)$ or $57 \div (12 + 7) (= 3)$ or $800 \div (12 + 7) (= 42.1...)$ or $[\text{amount}] \times \frac{57}{100}$ or $[\text{amount}] \times \frac{7}{12 + 7}$	May be seen as part of other calculations, eg $\frac{7}{12 + 7} \times 57 (= 21)$ or $\frac{7}{12 + 7} \times 800 (= 294.7...)$ [amount] can be any figure considered as being 57% of 800 or 43% calculated incorrectly or a figure calculated from using full or partial ratio incorrectly as a first step
		P1	for a complete process to find the weight of glass, eg $\frac{57}{100} \times 800 \times \frac{7}{12 + 7}$ oe	
		A1	for an answer in the range 167.9 to 168 SCB2 for an answer of 288	
26	12.65, 12.75	B1	for 12.65 in correct position	Accept 12.749 or 12.7499(...)
		B1	for 12.75 in correct position	



Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
22	Comparison	B1	for correctly identifying the median of (School) A as 57	If median for school B is stated in the comparison it must be correct
		C1	(ft, dep on value for the median being stated) for making a correct comparison of <u>median</u> eg 'the median of (School) A is higher than the median of (School) B'	
		B1	for correctly identifying the range of (School) A as 49	
		C1	(ft, dep on value for the range being stated) for making a correct comparison of <u>range</u> eg 'the range of (School) A is higher than the range of (School) B'	
23	10.2 and 10.3	B1	for 10.2 in the correct place	Accept 10.29 or 10.299(99...)
		B1	for 10.3 in the correct place	
24	14.3	M1	for a correct statement for AB using trigonometry, eg $\tan 62 = \frac{AB}{7.6}$ or $(AB =) 7.6 \times \tan 62$	If an answer is given in the range in working and then rounded incorrectly award full marks
		A1	answer in the range 14.28 to 14.3	



Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
25	New York (supported)	P1	for a conversion between kg and lbs, eg $2 \times 2.2 (= 4.4)$ or $5 \div 2.2 (= 2.27...)$	See page at end of mark scheme £ per lb US dollars per kg lbs per £ kg per US dollar Condone the incorrect assignment of units for all 3 P marks Final comparable values can be truncated or rounded, they just need to be accurate enough to allow a comparison
		P1	for a conversion between pounds and US dollars, eg $3.75 \times 1.2(0) (= 4.50)$ or $4.9(0) \div 1.2(0) (= 4.08...)$	
		P1	for a process to find figures to compare, eg $3.75 \div "4.4" (= 0.85...)$ and $"4.08..." \div 5 (= 0.81(6...))$ or $"4.50" \div 2 (= 2.25)$ and $4.9(0) \div "2.27..." (= 2.15(6...))$ or $"4.4" \div 3.75 (= 1.17...)$ and $5 \div "4.08" (= 1.22...)$ or $2 \div "4.5" (= 0.44...)$ and $"2.27" \div 4.9(0) (= 0.46 ...)$	
		C1	for New York with correct comparable figures, eg 0.85 and 0.81(6...) OR 2.25 and 2.15(6...)	
26	23.75 and 23.85	B1	for 23.75 in the correct position	Accept 23.849 or 23.8499(9...)
		B1	for 23.85 in the correct position	



Paper: 1MA1/3F				
Question	Working	Answer	Mark	Notes
20		New York (supported)	P1 P1 C1	for changing between £ and \$, eg $1.089 \times 1.46 (= 1.58(9.))$ or $2.83 \div 1.46 (= 1.93(8.))$ or between litres and gallons, eg $1.089 \times 3.785 (= 4.12(1.))$ or $2.83 \div 3.785 (= 0.74(7.))$ for a complete process to give values that can be used for comparison, eg “ $1.938... \div 3.785 (= 0.51(2.))$ ” or “ $1.589... \times 3.785 (= 6.01(7.))$ ” or $1.089 \times 3.785 (= 4.12(1.))$ and $2.83 \div 1.46 (= 1.93(8.))$ for New York and correct comparative values.
21		648	M2 [M1 A1	a complete method, eg $12.5 \times 1000 \div 19.3$ for using volume = mass/density, eg $12500 \div 19.3$ (condone inconsistent units or incorrect conversions) may be implied by digits 647... or 648...] for answer in range 647 to 648
22		15	P1 P1 A1	strategy to start the problem, eg 8:20 and 20:5 process to solve the problem, eg $\frac{5}{33} \times 100$ or 24:60:15 cao
23 (a)		0.625	B1	cao
(b)		$9.75 \leq x < 9.85$	B2 [B1	$9.75 \leq x < 9.85$ for 9.75 or 9.85 (or 9.849)]



Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
22	8.73	M1	for a correct trig statement, eg $14.5 \times \cos 53$ or $\cos 53 = x \div 14.5$	Can use a combination of skills but must have only one unknown in x to score this mark If an answer is given in the range in working and then rounded incorrectly award full marks.
		A1	answer in the range 8.726 to 8.73	
23	7318.15	M1	for a correct first step eg working out increase for one year $7000 \times (100 + 3) \div 100 (= 7210)$ oe or $7000 \times 3 \div 100 (= 210)$ oe or find the multiplier for both years eg $(100 + 3) \div 100 \times (100 + 1.5) \div 100 (= 1.04545)$	7315 or 315 implies M1
		M1	for a compound method, eg $7000 \times (100 + 3) \div 100 \times (100 + 1.5) \div 100$ oe or “7210” $\times 1.5 \div 100$ or $(= 108.15)$ oe	318.15 implies M1M1A0
		A1	cao	
24	(a) 4	B1	for 4	Condone (0,4) or 0,4 Accept both solutions given as a coordinate for M1 eg (5.2, 0.8) or (0.8, 5.2) or (5.2, 0) and (0.8, 0)
	(b) (3, -5)	B1	cao	
	(c) 5.1 to 5.3 and 0.7 to 0.9	M1	for a correct method, eg marking both intercepts with x-axis or one correct solution	
		A1	for answers in the range 5.1 to 5.3 and 0.7 to 0.9	
25	(a) 1.25	B1	for 1.25 or $\frac{5}{4}$ or $1\frac{1}{4}$	Accept 4749.9 or 4749.99(...)
	(b) 4650 and 4750	B1	for 4650 in the correct position	
		B1	for 4750 in the correct position	

Paper: 1MA1/3F				
Question	Working	Answer	Mark	Notes
23 (a) (i)		155 000	B1	cao
(ii)		165 000 or 164 999 or 164 999.99	B1	165 000 or 164 999 or 164 999.99
(b)		200 000	M1 A1	for recognising that $210\,000 = 105\%$ or a full method to find the original price eg $210\,000 \div 1.05$ oe (= 200 000) 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: IMA1/2F				
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: 1MA1/3F				
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: 1MA1/3F				
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: 1MA1/2F				
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: IMA1/3F				
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		May be seen in working. Accept if no ambiguity.
	(b) $3x + 8$	M1	for method to collect terms eg $3x$ or 8	
		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: 1MA1/3F					
Question	Answer	Mark	Mark scheme		Additional guidance
16	Enlargement centre (1,1) scale factor 4	B2 (B1)	Enlargement, centre (1,1) and scale factor 4 two of Enlargement, centre (1,1), scale factor 4 with nothing incorrect)		No extras. Accept <i>A</i> as centre. If there is a clear reference to a different transformation award no marks
17	(a) $y^2 + 5y$ (b) $2(2a - 3)$ (c) 2.9	B1 B1 M1 M1 A1	cao cao for a correct first stage eg. expanding the brackets, $2 \times 5x - 2 \times 4 (= 10x - 8)$ or division of both sides by 2, eg $\frac{2(5x-4)}{2} = \frac{21}{2}$ for isolating terms in <i>x</i> eg $10x = 21 + 8$ oe		Do not award if there is contradiction
(d)	$20e^3f^4$	M1 A1	for any two of $4 \times 5 (=20)$, $e^{2+1} (=e^3)$, $f^{1+3} (=f^4)$ in a product or written as individual terms cao		
18	10 000	B1	cao		
19	34 cm ²	P1	for finding one area eg $8 \times 8 (= 64)$ or $0.5 \times 3 \times 5 (=7.5)$	for first stage in working with Pythagoras eg sight of $3^2 + 5^2$ or $9 + 25$	
		P1	for a complete process to find the area eg “64” – $4 \times$ “7.5” (=34)	for full use of Pythagoras eg $\sqrt{3^2 + 5^2}$ or $\sqrt{34}$ or 5.83...	Any figure used must come from a correct process
		A1	for an answer in the range 33.6 to 34		Can be awarded with incorrect units stated
		B1	(indep) for cm ²		Can be awarded with an incorrect or absent numerical answer



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

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
1	-3 -1 2 4 7	B1	for -3 -1 2 4 7	Allow correct reverse order: 7 4 2 -1 -3
2	5	B1	cao	
3	0.31	B1	cao	Accept .31
4	35	B1	cao	
5	2	B1	cao	
6	(a) 10	B1	cao	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: 1MA1/1F				
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: 1MA1/2F				
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	for a beginning process, eg $76 - 13 (= 63)$ or $3x + 13 = 76$ oe	May be implied by $a + b + c = 63$ or $a + b + c + 13 = 76$ a, b and c may be seen in a list
		P1	for "63" $\div 3$ or $(76 - 13) \div 3 (= x)$	$13 + 21 + 21 + 21 = 76, 76, 63$ or 13 on answer line scores P1P1A0
		A1	cao	21, 21, 21 (13) on the answer line will score P1P1A1
7	6	M1	for $330 \div 55$	Build up methods are allowed Condone one error in build up method $55 \times 6 = 330, 330$ or 55 on answer line scores M1A0
		A1	cao	ignore use of £ eg £6
8 (a)	6	B1	cao	



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

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



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 mins =) 0.75 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
11	16	M1	Yes... for converting, eg $1.2 \times 100 (= 120)$ or $136 \div 100 (= 1.36)$ or for an answer of 0.16 or for [Elena's height] – 1.2 or for $136 - [\text{George's height}]$	[Elena's height] = 13 600 or 1360 or 13.6 or 1.36 [George's height] = 120 or 12 or 0.12 or 0.012
		A1	cao	
12 (a)	11	B1	cao	33, 39, 45, 51, 57, 63
(b)	Yes (supported)	M1	for method to show that 63 is in the sequence, eg starts to list terms of the sequence, with at least 3 correct or $6n + 3 = 63$ or $(63 - 3) \div 6 (= 10)$ or $6 \times 10 + 3$ or $(63 - 27) \div 6$ or $27 + 6 + 6 + 6 + 6 + 6 + 6$	
		A1	eg Yes and 33, 39, 45, 51, 57, 63 Yes and $n = 10$ Yes and $(63 - 3) \div 6$ is a whole number Yes and $6 \times 10 + 3 = 63$ Yes and $63 - 27$ is divisible by 6, and the sequence goes up in 6's Yes and $27 + 6 + 6 + 6 + 6 + 6 + 6 = 63$ OR Like all the other terms in the sequence, it is in the 3 times table but not the 6 times table It's the 10th term / 63 is the 10th term	'Yes' can be implied by an equivalent statement eg '63 is in the sequence' Ignore additional incorrect statements but if the statement contradicts award A0 eg '33, 39, 45, 51, 57, 63, and yes and it's the 11th term' would be M1A0



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: 1MA1/2F				
Question	Working	Answer	Mark	Notes
13		Shown	M1	for method started to find comparable amounts, eg $17 \times 46 (=782)$ or $17 \times 0.46 (=7.82)$ or $17 \times 35 (=595)$ or $266 \div 35 (=7.6)$ or $26600 \div 35 (=760)$
			M1	for complete method to find comparable figures eg $17 \times 46 (=782)$ or $17 \times 0.46 (=7.82)$ AND $266 \div 35 (=7.6)$ or $26600 \div 35 (=760)$ eg $17 \times 46 \times 35 (=27370)$ or $17 \times 0.46 \times 35 (=273.7)$
			C1	Shows correct comparable figures eg 7.82 and 7.6(0), 782 and 760 OR 273.7(0)
14 (a)		Example	M1	Chooses two odd numbers and substitutes into $2(a + b)$ oe
			C1	Calculates $2(a + b)$ correctly to arrive at a number that is a multiple of 4
(b)		Reasoning	C1	States $a + b$ is even or $2a$ is even or $2b$ is even
			C1	Completes argument.

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



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

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
11	23	M1 A1	for substitution eg. 7×5 and 3×-4 or $7(5) + 3(-4)$ cao	$7 \times 5 (= 35)$ and $3 \times -4 (= -12)$ may be seen separately but both must be seen for the award of M1
12 (a) (b)	7 1 hr 38 mins	B1 M1 A1	cao for a complete method to find the time difference eg. $9\ 00 - 7\ 22$ OR a calculation on a number line, may be seen in any time format OR work in parts eg hours and minutes, may work in any units, eg. $60 - 22 (= 38) + 1$ hour OR a clear build up method from 07 22 to 09 00 OR for correct values seen in an incorrect format, eg. 1.38 or 1:38 or 98 without units 1 hr 38 (mins) or 98 minutes or 1.63' hrs	
13	10	P1 P1 A1	for starting the problem, $12 \div 6 (= 2)$ for a complete process to find width " 2 " $\times 5$ cao	The square of side 2 cm may be just seen on the diagram
14	2 : 1	B1	cao	



Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
18 (a)	2	B1	cao	Check working space or next to the table. Zero points may not be seen so accept without $0 \times 4, 0$
(b)	81	M1	for working with values from the table eg $(0 \times 4), (1 \times 3), \dots$ with at least 3 products shown correct or $(0 +), 3, 14, 15, 24, 25$ with at least 3 correct	
		A1	cao SC B1 for 85	
19	$x = \frac{y-4}{2}$	M1	for correct first step to rearrange eg $y-4 = 2x+4-4$ or $\frac{y}{2} = \frac{2x+4}{2}$ or ambiguously shown eg $x = y-4 \div 2$ or answer given as $\frac{y-4}{2}$	May be seen in different equivalent forms but must be carried out, not just intention seen. Could be shown as a flow diagram but must have correct inverse operations
		A1	oe	
20	105	M1	for evidence of understanding the angle properties of a square or equilateral triangle, eg stating angle $DBC = 60$ or angle $EBD = 45$ or angle $BAE = 90$	Accept on the diagram with no contradiction in working, or no contradiction or ambiguity on the diagram; 90 can be shown as a right angle Could be shown on the diagram or in working, but do not accept contradiction or ambiguity.
		A1	cao	
21	78	P1	for process to find the number of rand, eg $850 \times 18.53 (= 15750.5)$ OR for process to find number of £, eg $200 \div 18.53 (= 10.79 \dots)$	
		P1	(dep P1) for process to find the number of rand notes, eg “ $15750.5 \div 200 (= 78.7\dots)$ ” OR $850 \div “10.79\dots” (= 78.7\dots)$	
		A1	cao	

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
9 (a)	5	M1	for listing numbers in order, eg 3 4 4 6 8 9 or answer of 4, 6 or answer of 8.5	Condone one error or additional number Incorrect notation can imply a correct method. Award M1 for eg 2 out of 6 or 2 in 6 or 2 : 6 Accept any equivalent fraction, decimal form 0.33(33..) or percentage form 33(.33..) % Numbers may be seen on the cards (but the answer line takes precedence)
		A1	cao	
	$\frac{2}{6}$	M1	for $\frac{2}{x}$ with $x > 2$ or for $\frac{y}{6}$ with $y < 6$	
		A1	for $\frac{2}{6}$ oe	
	3, 6	P1	for at least one 3 or 5×5 (= 25)	
		A1	for 3, 6 or 6, 3	
10	1635	P1	for process to find length of time in car park eg $8.40 \div 0.024$ (= 350) or 0.024×60 (= 1.44) and $8.40 \div "1.44"$ (= 5.833...)	Do not accept incorrect interpretation of time, eg 5.83 = 5 hours 83 minutes Accept 1635 pm
		P1	for process to add "350" minutes to 10 45 eg $10\ 45 + 60 + 60 + 60 + 60 + 60 + 60 + 50$ or $10\ 45 + "5\ \text{hours}\ 50\ \text{minutes}"$ OR for 435	
		A1	for 1635 or 435 pm	

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

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
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: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
9 (a)	23	B1	cao	56 : 10 implies this mark only Accept 1 : 5.6
		M1	for 10 or 56 identified	
		A1	for 10 : 56 or any other equivalent ratio	
10	213	P1	for beginning to work with costs eg $1428 - 150 (= 1278)$ or $1428 \div 6 (= 238)$ and $150 \div 6 (= 25)$	
		P1	for complete process to find monthly payment eg "1278" $\div 6$ or "238" – "25"	
		A1	cao	
11	39 with reasoning	M1	for a method to find angle ACB eg $180 - 116 - 25$	$ACB = 39$ or $x = 39$ or $C = 39$ or just 39 is acceptable for this accuracy mark Angle may be shown on diagram if no ambiguity or contradiction The key words underlined must be present. There should be no incorrect reasons given. All reasons given should be used, not just a list of angle facts.
		A1	for 39	
		C1	for $x = 39$ with reasoning eg <u>Angles</u> in a <u>triangle</u> add up to 180 and <u>Vertically opposite angles</u> are equal or <u>Vertically opposite angles</u> are equal or <u>Angles</u> on a straight <u>line</u> add up to 180 OR The <u>exterior angle</u> of a triangle is <u>equal</u> to the sum of the <u>interior opposite angles</u> and <u>Angles</u> on a straight <u>line</u> add up to 180	

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
10 (a)	5	P1	for correct process, eg $23 \div 4 (= 5.75)$ or adds 4s up to at least 20 or repeatedly subtracts 4 up to a remainder of less than 4	
		A1	cao	
(b)	No (supported)	C1	for No with reason Acceptable examples Can buy 11 jars Can buy an extra jar (for the £3 extra) Can buy 10 jars for £20 He will have £3 left Because he can buy more than twice the number of jars Because $23 \div 2 = 11.5$ Not acceptable examples Yes Can buy 10 / Can buy 12	
11 (a)(i)	2	B1	for 2	Accept $2 \times$ or $\times 2$ oe
(ii)	cross placed	B1	for cross correctly placed or indicated by intersection of construction lines	
(b)(i)	line drawn	B1	for line $y = x$ drawn	Accept line of any length, dotted or dashed and/or drawn freehand
(ii)	$y = x$	B1	for $y = x$ oe, eg, $x = y$ or $y - x = 0$ or $x - y = 0$ or ft their line drawn in (b)(i)	Accept labelled on the diagram

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
1	6	B1	cao	
2	31	B1	cao	
3	12 <i>a</i>	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
16	-35	M1 A1	for a correct first step, eg shows $\frac{x}{7} + 9 - 9 = 4 - 9$ or $\frac{x}{7} = 4 - 9$ or $\frac{7x}{7} + 9 \times 7 = 4 \times 7$ or $x + 63 = 28$ cao	
17	No (supported)	M1 M1 C1	Working per week for 26.4×32 (= \$844.80) for "844.8" $\div 1.796$ (= £470.37...) or for 473.28×1.796 (= \$850....) for No and correct figures (850... and 844.8) or 470.37... Working per hour for $473.28 \div 32$ (= £14.79) for "14.79" $\times 1.796$ (= \$26.56....) or for $26.4 \div 1.796$ (= £14.699...) for No and correct figures (14.79... and 14.699..) or 26.56...	Throughout units and trailing 0s need not be given. Accept rounded or truncated figures throughout unless ambiguous. "No" may be expressed in words eg "Australia pay is less"
18	4.8	P1 P1 P1 A1	for finding missing length, eg $14 - 3.8 - 3.8$ (= 6.4) for method to find area of triangle, eg [missing length] $\times 6 \div 2$ (= 19.2) for method to find area of rectangle, eg [area of triangle] $\times 3.5$ (= 67.2) or writes an expression for the area of rectangle eg $14w$ or $14w \div 3.5$ for method to link both areas eg $14w = [\text{area of triangle}] \times 3.5$ or $[\text{area of triangle}] = 14w \div 3.5$ or $[\text{area of triangle}] \times 3.5 \div 14$ cao	Where [missing length] can be "6.4" or identified in working or on the diagram as the missing length [area of triangle] must be identified as the area of the triangle OR come from: [missing length] $\times 6 \div 2$ or [missing length] $\times 6$ or [decimal] $\times 6 \div 2$ Award 0 marks for a correct answer without correct supportive working.

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

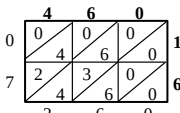
Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
9 (a)	40	B1	cao	
(b)	Yes (supported)	P1	for process shown to add a time to departure time eg $8.45 + 0.17$ or $8.45 + 0.15$ or $8.45 + 0.15 + 0.17$ OR for process to work out time at work after arrival at Manchester bus stop eg $"9.35" + 15$ OR finds accumulated additional time eg $17 + 15 (= 32)$ OR start to work backwards eg $10.00 - 0.15$	There must be some attempt to add but not necessarily complete or correct (eg 8.62). $"9.35"$ must be a given time ie from 0905, 0935, 0955, 1010, 1025, or 1048. Process must be shown.
		P1	for process to use a bus time from Whitefield to Manchester with other times eg 0904 to 0935 with use of 17 or 15	Do not award in cases of ambiguity.
		C1	for conclusion of "Yes" supported by correct figures eg states 9.50 or comparable figures eg 9.35 and 25 (spare)	There needs to be a conclusion eg Yes or equivalent words supported by correct figures; if C mark fully evidenced award 3 marks.
		P1	Alternative scheme for process shown to find a duration of time using given figures eg 8.45 to 10.00, 8.34 to 9.05, 10.14 to 10.48	There must be some attempt to find a duration of time but not necessarily complete or correct. Process must be shown.
		P1	for process to find the total travelling time eg $17 + 31 + 15$ or $17 + 2 + 31 + 15$	31 can come from any bus apart from the last bus which is 34
		C1	for conclusion of "Yes" supported by correct figures eg comparable figures eg $65 < 75$ or $75 - 65 (= 10)$	There needs to be a conclusion eg Yes or equivalent words supported by correct figures; if C mark fully evidenced award 3 marks.

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
12	Correct pie chart	M1	for method to find at least one angle eg P: $360 \div 60 \times 24 (=144)$ or C: $360 \div 60 \times 16 (=96)$ or M: $360 \div 60 \times 20 (=120)$	Use the overlay Working may be seen in or by the table
		A1	for all 3 angles correctly calculated OR at least one accurately drawn angle	If three equal sectors of 120° with no working award 0 marks
		A1	fully a correct labelled pie chart	Labels as “vegetables” from table not just angle size. Accept P, C, M
13	50	P1	for $45 \times 1.2 (=54)$ or $34 \times 1.5 (=51)$	
		P1	for $150 - “54” - “51” (=45)$	
		P1	for $“45” \div 0.9 (=50)$	
		A1	cao	
14 (a)	0.3	B1	for 0.3 oe	Acceptable equivalents are 3/10 or 30% Answer on answer line takes precedence
(b)	4	B1	4 or ft their (a)	Do not accept a statement of probability (eg 0.1)
(c)	12	M1	for 0.2×60 oe	Do not accept the use of any other probability
		A1	cao	

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

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

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
8	(a)(i) 30	B1	cao	
	(ii) Reason	C1	reason, eg <u>angles</u> on a straight <u>line</u> add up to 180°	
	(b) Explanation	C1	for explanation eg the two angles don't add up to 360 Acceptable examples $90 + 280 = 370$ The two angles don't add up to 360 280 should be 270 Angles around a point equal 360° It should be 360 (in a circle) It should be 80 It should not be a right angle It cannot be 280° Not acceptable examples They don't add up to 180 365 degrees in a circle $\square$ means 90 degrees	
9	(a) 25	B1	for 25, accept answer in range 24 to 26	
	(b) 24	M1	for $40 \div 10 \times 6$	
	(c) Comment	A1 C1	cao (dep B1 or M1) ft for comment for their results, eg the two answers are quite close or answer to (b) is less than answer to (a) or the rule gives a smaller answer	
10	(a) 12	B1	cao	
	(b) 4	B1	cao	

Paper: 1MA1/1F													
Question	Answer	Mark	Mark scheme	Additional guidance									
11	£73.60 or 7360p	M1	for $89198 - 88738 (= 460)$ OR for showing 89198×16 or 88738×16 OR for showing $(89198 + 88738) \times 16$	May see 0.16 used $89198 \times 16 = 1427168$ $88738 \times 16 = 1419808$ $(89198 + 88738) \times 16 = 2846976$									
		M1	for showing “460” $\times 16$ OR for showing $89198 \times 16 - 88738 \times 16$										
		M1	(dep on M1) for a complete method of multiplication with relative place value correct including an intention to add all the appropriate elements of the calculation eg, 2 lines of the 1st method, internal numbers of grids, or complete structure shown of partitioning methods.	Accept in any units, correct figures would imply previous mark 4600 2760 7360 									
		A1	for £73.6(0) or 7360p SC B3 for an answer with digits 736 with incorrect or missing units	<table border="1"><tr><td></td><td>400</td><td>60</td></tr><tr><td>10</td><td>4000</td><td>600</td></tr><tr><td>6</td><td>2400</td><td>360</td></tr></table> $4000+2400+600+360$		400	60	10	4000	600	6	2400	360
	400	60											
10	4000	600											
6	2400	360											

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
27	No (supported)	P1	for a conversion with litres and gallons, eg $18 \div 4.5 (= 4)$ or $8 \times 4.5 (= 36)$	See page at end of mark scheme May compare cost per gallon or cost in euros May be seen in a calculation or given in a description Accept comparative figures rounded or truncated No is implied by eg Wales is cheaper
		P1	for a conversion with £ and euros, eg $27 \times 0.85 (= 22.95)$ or $40.8 \div 0.85 (= 48)$	
		P1	for finding the unit price, eg $27 \div 18 (= 1.5)$ OR finding proportionality for fuel eg $(“36” \div 18) (= 2)$	
		C1	for No with comparative figures, eg No with 20.4 and 22.95 or No with 1.275 and 1.133..	
28	$x = 6.5$, $y = -2.75$	M1	for a correct method to eliminate either x or y or method leading to substitution	(condone one arithmetic error)
		M1	(dep) for substituting found value in one of the equations OR correct method after starting again	(condone one arithmetic error)
		A1	for $x = 6.5, y = -2.75$ oe	



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: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
26 (a)	0.7	B1	for 0.7 on the first branch	Accept equivalent fractions or percentages for probabilities
	0.65, 0.65	B1	for 0.65, 0.65 on the second branches	
	(b) 0.105	M1	for 0.3×0.35	
		A1	oe	
27 (a)	0.008	B1	for 0.008 or 8×10^{-3}	May be awarded at any stage
	(b) 50	M1	for conversion from km to m eg $180 \times 1000 (= 180\,000)$ or for conversion from hours to seconds eg $180 \div (60 \times 60) (= 0.05)$ or for conversion from km per hour to metres per second, eg $1000 \div (60 \times 60) (= 0.277\dots)$ (Accept $(60 \times 60) \div 1000 (= 3.6)$)	
		M1	for a complete process eg $180 \times 1000 \div 3600$	
		A1	cao	
28	158	P1	for a first step in the process eg $50 \times 167.6 (=8380)$ or $20 \times 182 (=3640)$	
		P1	for a complete process eg $(50 \times 167.6 - 20 \times 182) \div 30$ or $\frac{8380 - 3640}{30}$ or $4740 \div 30$	
		A1	cao	

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
9 (a)	6	M1	for ordering the numbers or showing a complete method of $(5+7) \div 2$	Accept key in place of labels Accept unambiguous abbreviations eg Frequency or Number, X,M,K,T Condone bars of varying widths Condone no gaps or inconsistent gaps
		A1	cao	
	8	B1	cao	
		B1	for correct person labels or a linear scale	
	Bar chart	M1	for correct bars showing information for at least 2 people	
		A1	for a fully correct bar chart with linear scale of numbers on the vertical axis and a set of person labels on the horizontal axis	
10	Yes (supported)	P1	for starting a process of working with time eg for undertaking some time conversion eg 85 mins is 1 hr 25 mins, 1 hr 45 min is 105 mins or for recognition that 1 h = 60 min (eg $85 = 60 + 25$)	Time conversion may be implied by a correct addition over the hour eg $8.30 + 1\text{h } 45\text{m} = 10.15$, $10.30 + 85 = 11.55$ Can be shown at any stage. A correct duration can be shown using their times for any of the stages. Subtraction of any of the time durations Accept their figures for 1 hr 45 min, 85 etc as long as it is clear they are related.
		P1	for a correct addition of at least two times eg $15 + 85 = 100$ or a correct duration eg $8.30 + 1\text{h } 45\text{m} = 10.15$ or a correct subtraction eg $12 (\text{noon}) - 15 = 11.45$	
		P1	for a complete process to justify the decision eg $8.30 + 1\text{h } 45\text{min} + 85 + 15 (= 11.55)$ or $105 + 15 + 85 (= 205 \text{ min})$ and $12 (\text{noon}) - 8.30 (= 210 \text{ min})$	
		C1	Yes and accurate figures eg 11.55 or 205 and 210	



Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
12 (a)(i)	26	M1 A1	for substitution eg $2 \times 3 + 4 \times 5$ or $6 + 20$ cao	
(ii)	13	M1 A1	for substitution eg $38 = 2g + 4 \times 3$ or a complete numerical method eg $(38 - 4 \times 3) \div 2$ or for a correct first step to rearrange eg $P - 4h = 2g$ or $\frac{P}{2} = g + \frac{4h}{2}$ oe cao	
(b)	-11	M1 A1	for $3 \times -3 = -9$ oe or a full substitution eg $(3 \times -3) - 2$ cao	Condone absence of brackets
13	23	P1 P1 P1 A1	for finding the number of scrunchies possible eg $100 \div 5 (= 20)$ or the cost of 1 g of wool eg $300 \div 100 (= 3)$ for working out the cost of wool per scrunchie eg $3 \div "20" (= 0.15)$ or $300 \div "20" (= 15)$ or $"3" \times 5 (= 15)$ or the cost of all hair bands eg $"20" \times 8 (= 160)$ or $"20" \times 0.08 (= 1.6(0))$ for complete process eg $("0.15" + 0.08) \times 100$ or $"15" + 8$ or $(300 + "160") \div "20"$ or $(3 + "1.6(0)") \div "20" \times 100$ accept £0.23	Award of this mark implies the previous mark 460 implies P2

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)	
9	WP WS WC BP BS BC GP GS GC	B2	for all correct and no incorrect or repeats	Ignore repeats
		(B1	for at least 4 correct)	
10	3 : 5	M1	for 24 : 40 or for any ratio equivalent to 24 : 40 or 5 : 3	Accept 3 : 5 in the form $n : 1$, eg 0.6 : 1 or 1 : n , eg 1 : 1.66(..)
		A1	for 3 : 5	
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
14	324	P1	for a process to work out daily pay on a weekday, eg $8 \times 6 (= 48)$ or a process to work out the number of hours of pay for weekdays, eg $6 \times 5 (= 30)$ or the number of hours of pay for Saturday and Sunday, eg $(4 + 3) \times 1.5 (= 10.5)$ or a process to work out rate of pay for Saturday or Sunday, eg $8 \times 1.5 (= 12)$	
		P1	for a process to work out the total pay from Monday to Friday, eg $"48" \times 5 (= 240)$ or $"30" \times 8 (= 240)$ or for a process to work out the total pay from Saturday and Sunday, eg $"10.5" \times 8 (= 84)$ or $"12" \times (4 + 3) (= 84)$ or a process to work out the total number of hours of pay, eg $"30" + "10.5" (= 40.5)$	
		P1	for a complete process, eg $"240" + "84"$ or $"40.5" \times 8$	
		A1	cao	



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

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
8	19.85	P1	for a start to the process eg $30 \div 6 (=5)$ or $30 \div 15 (=2)$ or $30 \div 10 (=3)$ OR $30 \times 37 (=1110)$ OR $82 \div 6 (=13.6 \text{ to } 13.7)$ or $45 \div 15 (=3)$ or $1.25 \div 10 (=0.125)$	
		P1	for process to find cost of 30 pens or 30 pencils or 30 rulers eg $"5" \times 82 (=410)$ or $"2" \times 45 (=90)$ or $"3" \times 1.25 (=3.75)$ OR $"13.6." \times 30 (=409.8 \text{ to } 410)$ or $"3" \times 30 (=90)$ or $"0.125" \times 30 (=3.75)$	Work may be in pence or in pounds
		P1	for a process to find cost of 2 of 30 pens or 30 pencils or 30 rulers eg any 2 of $"5" \times 82 (=410)$, $"2" \times 45 (=90)$, $"3" \times 1.25 (=3.75)$	Intention to add not necessary eg 410, 3.75 is sufficient, or working leading to these figures Any two correct methods will imply P1P1P1
		P1	for adding at least 3 different costs (units may not be consistent) eg $"410" + "90" + "3.75"$ or $"410" + "90" + "11.10"$	Correct working for 3 of pens, pencils, rulers and pencil cases with an intention to add, may be in a mixture of money units
		A1	cao	
9	(a) 62	M1 A1 cao	for distance $\div$ time eg $186 \div 3$ or $186 \div (3 \times 60)(=1.03..)$	May use hours or minutes at this point
	(b) 232	M1 A1 cao	for speed $\times$ time eg 58×4 or $58 \times 4 \times 60 (=13920)$	May use hours or minutes at this point



Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
12 (a)	No from correct figures	P1	for first step in process to solve the problem, eg find cost of 3 T-shirts, $25 \times 3 (= 75)$ or eg find remaining money after just one purchase, eg $200 - 60 (= 140)$ or $200 - 25 (= 175)$	Award this mark for addition of 2 or more items or for subtraction of one item or more from 200 eg $200 - 50 (= 150)$ etc.
		P1	for process to find total cost of trainers and T-shirts, eg $60 + "75" (= 135)$ or find total cost including cost of jacket, eg. $60 + "75" + 80 (= 215)$ or find the change after buying all 4 items, eg. $200 - 60 - 3 \times 25 (= 65)$ oe	
		C1	for No from correct figures Acceptable examples No, needs 215 No, only has 65 left No, needs 15 more Not acceptable examples Yes	
	(b)			
(b)	Explanation	P1	for a start to a method, eg. approximating 0.749 to 0.7, 0.74, 0.75 or 0.8	Figures can be given without units (\$) For full marks, any calculations must be correct. No statement in words is needed.
		C1	for explanation Acceptable examples $0.7 \times 60 = 42$ [is an underestimate] $0.74 \times 60 = 44.4(0)$ [is an underestimate] . Not acceptable examples $0.75 \times 60 = 45$ [is an overestimate] $0.8 \times 60 = 48$ [is an overestimate]	

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
12 (a)	26	P1	for process to find $\frac{1}{6}$ of 120 minutes, eg $\frac{1}{6} \times 120 (= 20)$	May be seen in stages
		P1	for process to find 20 % of 120 minutes, eg $\frac{20}{100} \times 120 (= 24)$	
		P1	(dep on P2) for a complete process to find the time remaining, eg $120 - 50 - "20" - "24"$	
		A1	cao	
(b)	No (supported)	C1	for No with reason or ft (a) Acceptable examples she was (at least) 4 minutes late she did not arrive until (at least) 3 04 pm it took her more than 90 minutes doing the activities Not acceptable examples Yes she arrived after 3pm	The 'No'(or 'Yes') may not be required if it is clear from the reasoning that Elena did not (did) get to the café by 3pm



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

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
9	5	P1	for process to work in consistent units, eg $12 \times 1000 (= 12000)$ or $105 \div 1000 (= 0.105)$	May be seen in subsequent calculations
		P1	for process to work with portion size, eg $105 \times 3 (= 315)$ OR $12 \div [0.105] (= 114.285...)$	For [0.105] allow use of 0.105, 1.05 or 10.5
		P1	for process to work with weight of food per week or number of days, eg $"315" \times 7 (= 2205)$ or $"315" \times 5 (= 1575)$ or $"315" \times 6 (= 1890)$ [12000] $\div$ "315" (=38(.095...)) OR $[114.285...] \div 3 (= 38(.095...))$ or $[114.285...] \div 7 (= 16.3...)$	For [12000] accept use of 12000, 1200 or 120 For [114.285] allow continued use of incorrectly converted figure from previous mark.
		P1	(dep P2) for process to find number of weeks, eg $"12000" \div "2205" (= 5.4...)$ OR $"38.095..." \div 7 (= 5.4...)$ OR $"16.3..." \div 3 (= 5.4...)$ OR $"2205" \times 5 (= 11025)$ or $"2205" \times 6 (= 13230)$ OR 975 or -1230	
		A1	cao	If a correct answer is given without supportive working award 0 marks.
10 (a)	Pentagon	B1	cao	
(b)	112.5	P1	for process to find total length using their edges eg 15×7.5 or [edges] $\times 7.5$	[edges] must be unambiguously identified
		A1	for 112.5 oe	
11	$\frac{7}{25}$	M1	for $\frac{n}{2+16+7}$ where n is an integer < 25	
		A1	cao	

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
10 (a)	19	B1	cao	
(b)(i)	08 11	P1	for a correct first step, eg 09 00 – 8 (= 08 52) or for recognising which train he needs to get eg 08 17 or 08 45	
		P1	for a complete process to find the latest time he can leave his house, eg 08 17 – 6	
		A1	allow 8:11(am)	
(b)(ii)	No effect		Award SCB2 for an answer of 08 08 or 08 09 if P0 or P1 scored	
		C1	ft, for 'no effect' oe eg 'the next train would make it too late to the meeting', allow 'he can leave later' oe if an earlier train was selected in (i)	Reason not required but if a reason is given and it contradicts the answer, award 0 marks



Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
12 (a)	08 47 supported	M1	for a method to find the time of one train from L to C, eg $08\ 53 - 08\ 07 (= 46)$ or $09\ 22 - 08\ 47 (= 35)$ or $09\ 55 - 09\ 07 (= 48)$	Subtraction must be written in the correct order or correctly evaluated for M marks. Do not allow misread of timetable.
		M1	for a complete method to find the time of all three trains from L to C eg $08\ 53 - 08\ 07 (= 46)$ and $09\ 22 - 08\ 47 (= 35)$ and $09\ 55 - 09\ 07 (= 48)$	
		C1	for 08 47 train with correct supporting journey times eg 08 47 train with 46, 35, 48 seen	
(b)	40	P1	for a complete process to find the number of minutes to wait for the train eg $35\ (\text{mins}) + (09\ 30 - 09\ 25)$ or $09\ 30 + 35 (= 10\ 05)$ and “10 05” – 09 25	Accept any clear identification of the 08 47 train, eg the second one or the middle one or indicated on the table
		A1	cao	
13 (a)	10	B1	cao	May be seen by machine
(b)	- 1	M1	starts method to find input using inverse operations eg $-11 + 8 (= -3)$ or sight of +8 and $\div 3$	Allow $- - 8$ for +8 Allow $\times \frac{1}{3}$ for $\div 3$ Do not allow a misread of 11 for -11 Embedded answer eg $-1 \times 3 - 8 = -11$ scores M1A0
		A1	for - 1	



Paper: 1MA1/3F				
Question	Working	Answer	Mark	Notes
13		92, 65, 23	P1 P1 P1 A1	for two of x , $4x$ and $4x - 27$ (where x is the smallest angle) (dep) for equation summing their three angles to 180, eg $x + 4x + 4x - 27 = 180$ (dep P1) for correct process to simplify their algebraic expression, eg $9x - 27 (=180)$ P1 for correct process to solve their equation of the form $ax + b = 180$ for three correct angles (order irrelevant)
14 (a)	\$ £ 5 2.631... 60 31.578... 196 103.157... 2744 1444.21... 2804 1475.789...	2975.79	P1 P1 P1 P1 A1	for process to find total room cost eg $196 \times 14 (= 2744)$ for process to find total wifi cost eg $5 \times 12 (= 60)$ for using exchange rate appropriately (could be used earlier in the question), eg “2804” $\div 1.90 (= (\pounds)1475.789\dots)$ or $1500 \times 1.90 (= (\$)2850)$ P1 for process to find the total cost in £, eg “1475.79(…)” + 1500 or in \$, eg “2850” + “2804” (= 5654) 2975 to 2976
(b)		Statement	C1	Statement about the total price rising May comment that flights will not change but the rest will rise



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	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 SC B1 for answer of 15
(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
8 (a)	49.9(0)	B1	for 49.9(0)	To award B1ft, the total for tin of paint must not be blank or 0 May be seen embedded in other calculations eg 4.47 + 240 – 365.5(0)
	30	B1	for 30	
	417.31	B1	for 417.31, ft allow 367.41 + [their 49.9(0)] for this mark	
	771.45	M1	for a correct first step, eg 892.48 + 4.47 (= 896.95) or 892.48 + 240 (= 1132.48) or 892.48 – 365.5(0) (= 526.98) or 4.47 + 240 (= 244.47)	
		M1	for a complete method, eg 892.48 + 4.47 + 240 – 365.5(0)	
		A1	cao	
9	118	P1	for a correct first step, eg $200 \times 2 \div 5$ (= 80) or $200 \times 3 \div 5$ (= 120) or $1 - \frac{2}{5} \left(= \frac{3}{5} \right)$ oe eg 100 – 40 (= 60(%))	Answer of $\frac{118}{200}$ is P4A0
		P1	for a process to find the number of child vegetarians or number of child non-vegetarians, eg “80” $\times$ 0.35 (= 28) or “80” $\times$ (1 – 0.35) (= 52)	
		P1	for a process to find the number of adult vegetarians or number of adult non-vegetarians, eg (200 – “80”) $\times$ 0.45 (= 54) or (200 – “80”) $\times$ (1 – 0.45) (= 66)	
		P1	for a complete process to find the total number of non-vegetarians, eg 200 – “28” – “54” or (“80” – “28”) + (200 – “80” – “54”) oe eg “52” + (“120” – “54”) or “80” $\times$ (1 – 0.35) + (200 – “80”) $\times$ (1 – 0.45)	
		A1	cao	