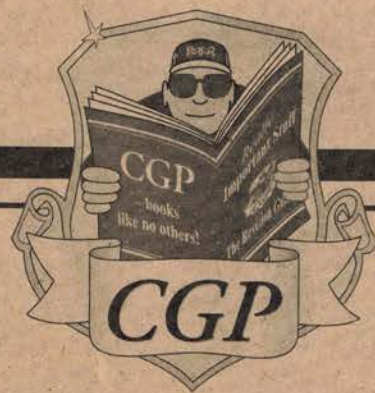


Name



Key Stage Two

Mathematics

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Pack Five

Key Stage Two Mathematics



Set A Paper 1: Arithmetic

Calculator Not Allowed
30 minutes

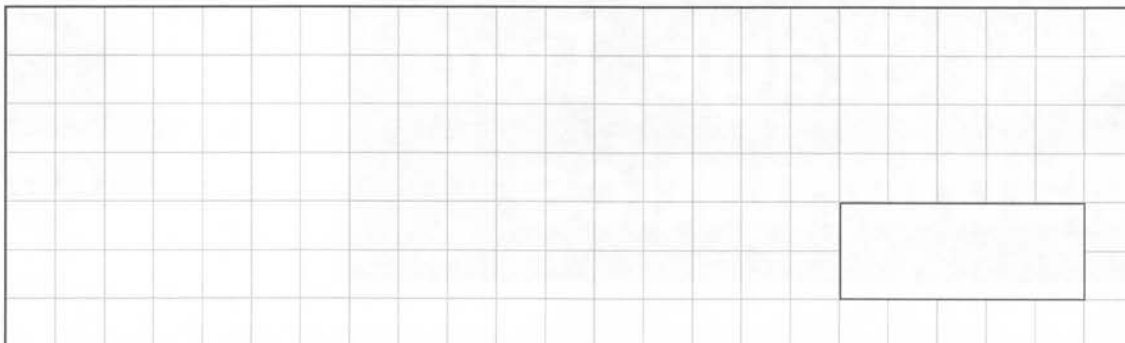
First name						
Middle name						
Last name						
School						
Date of birth	Day		Month		Year	

Total marks

--

1

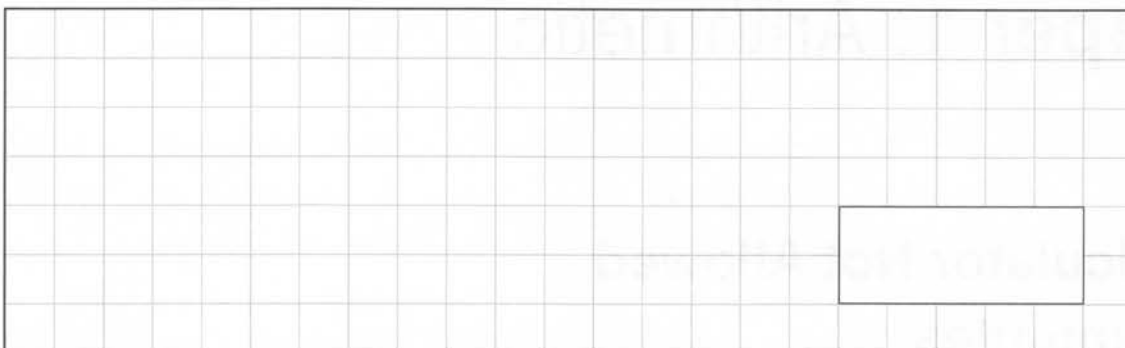
$5041 - 100 =$



1 mark

2

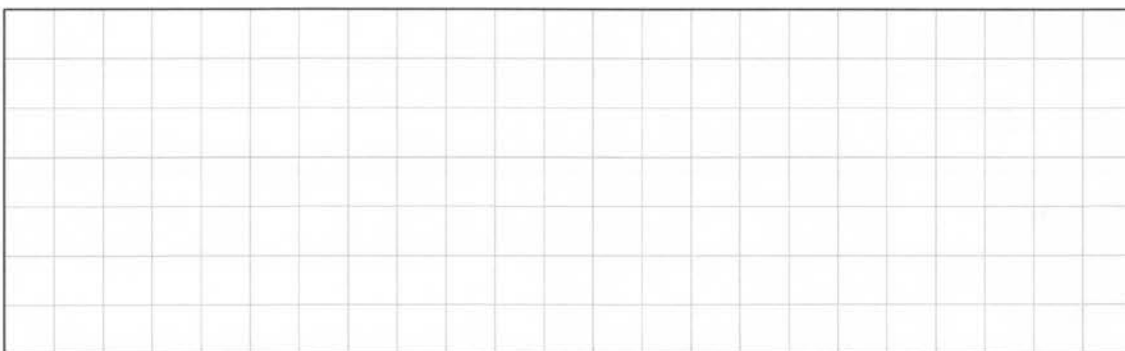
$74 \times 2 =$



1 mark

3

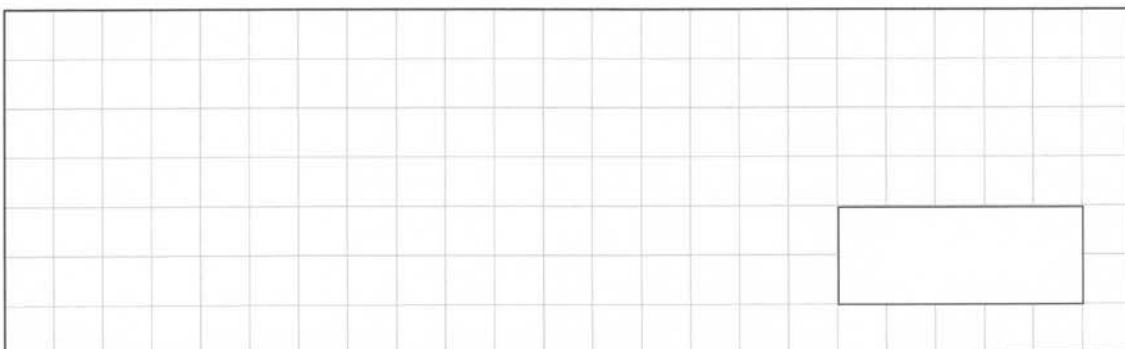
$= 372 - 8$



1 mark

4

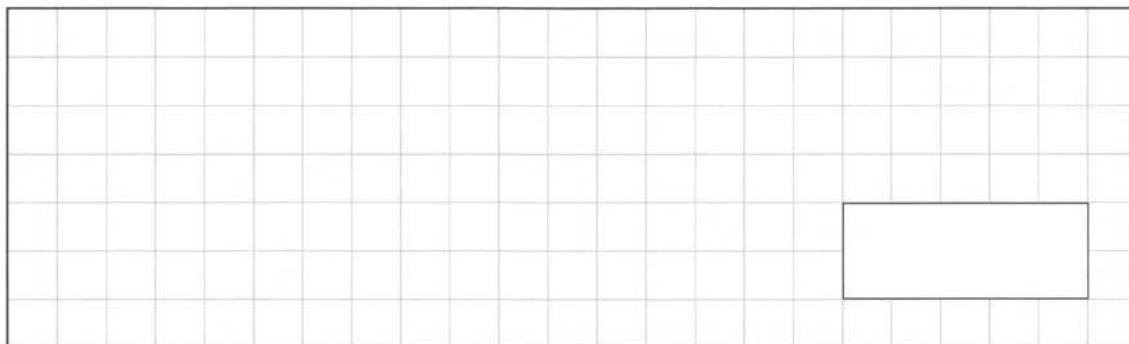
$44 \div 4 =$



1 mark

5

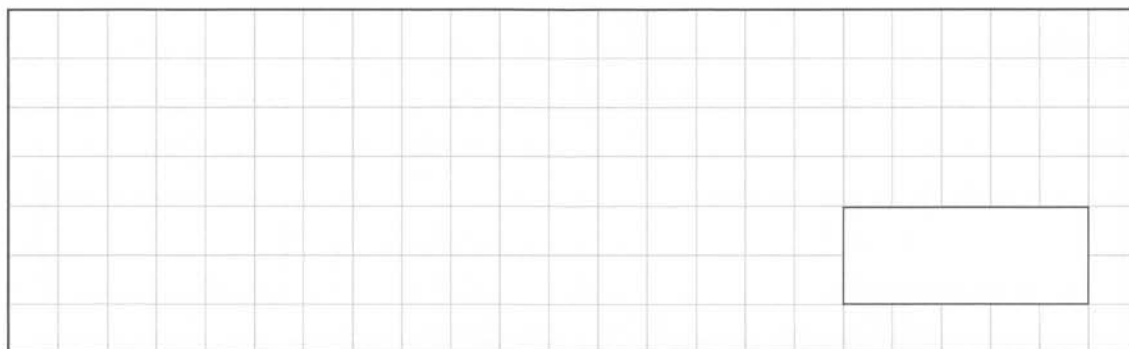
$730 \div 1 =$



1 mark

6

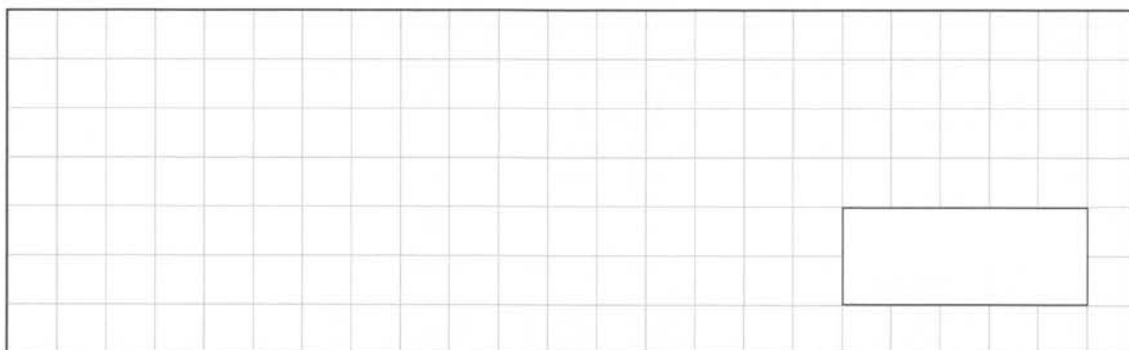
$8 \times 5 \times 6 =$



1 mark

7

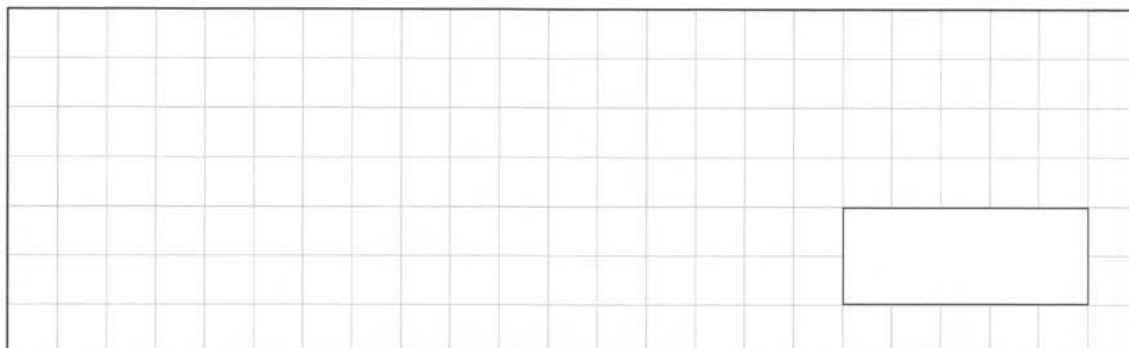
$76\,985 + 5236 =$



1 mark

8

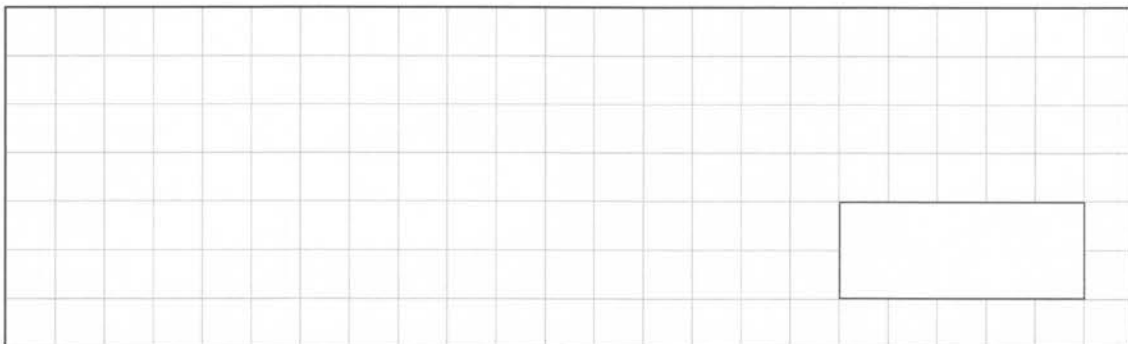
$9 \times 25 =$



1 mark

9

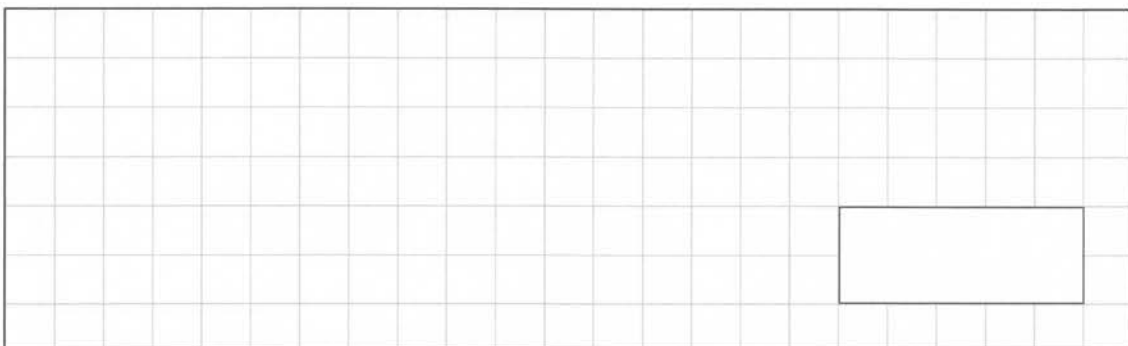
$40 \times 40 =$



1 mark

10

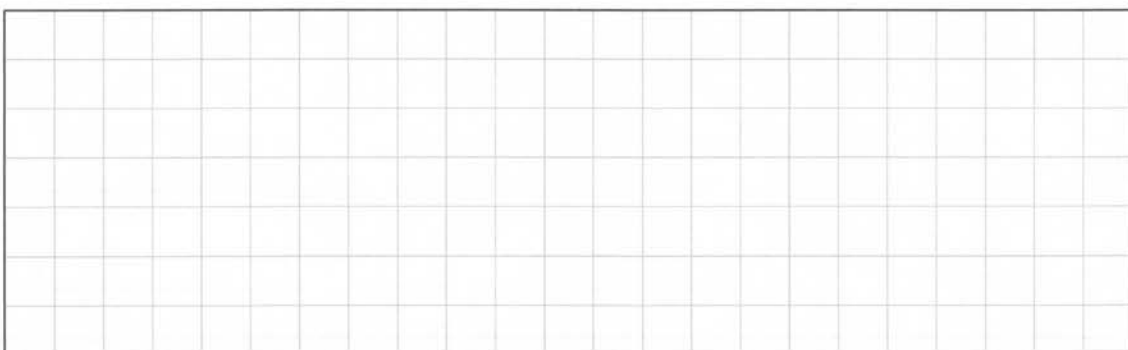
$865 - 70 =$



1 mark

11

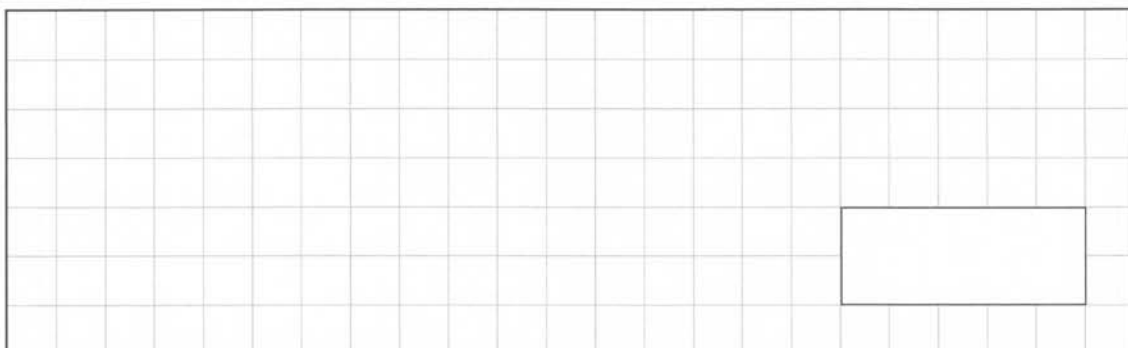
$= 866 \times 100$



1 mark

12

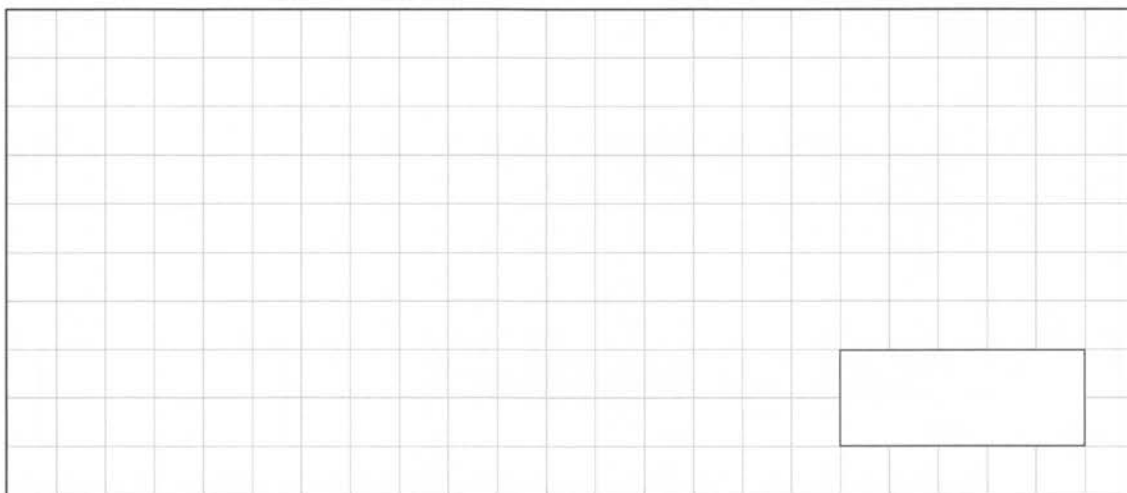
$546 \times 4 =$



1 mark

13

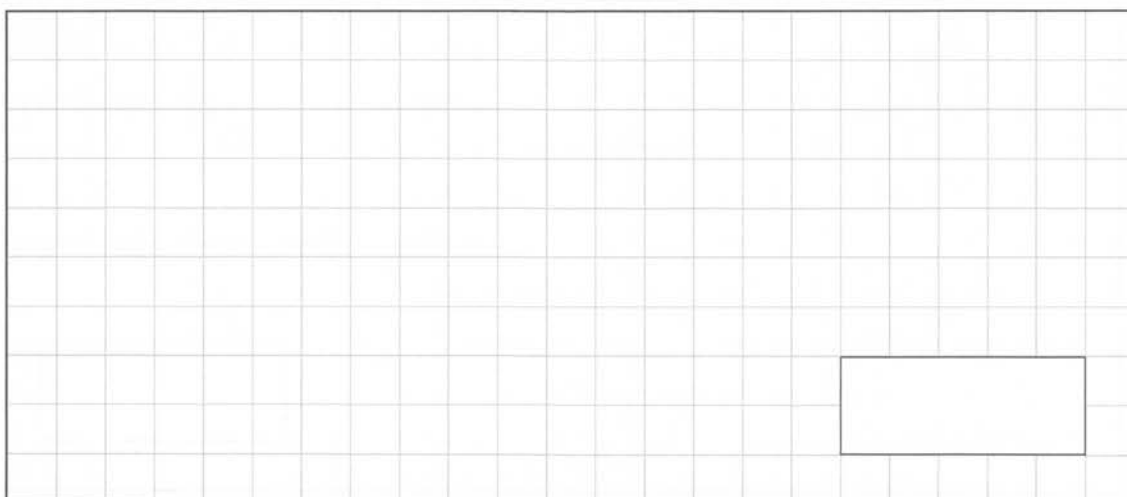
$73 \times 9 =$



1 mark

14

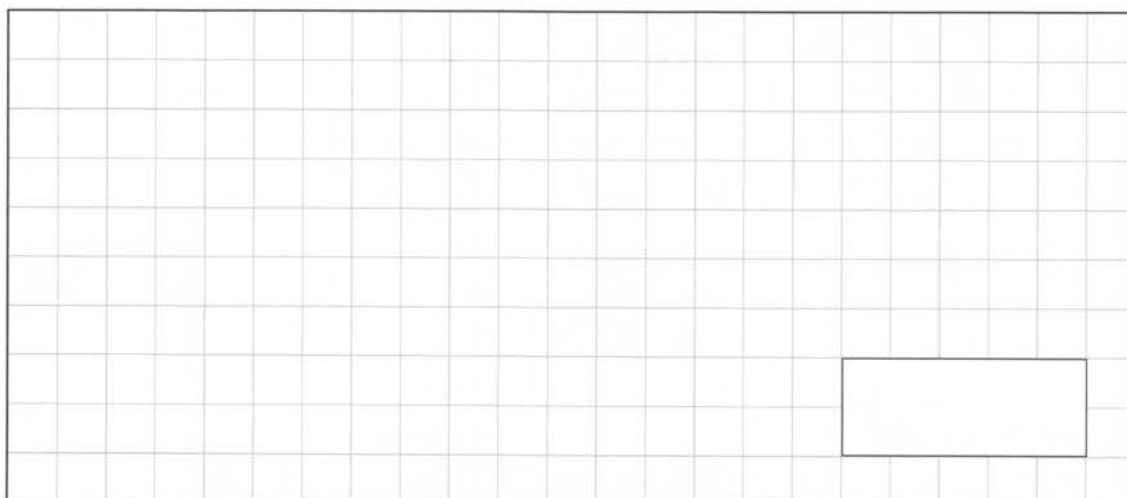
$7.65 - 6.54 =$



1 mark

15

$9.46 + 13.777 =$



1 mark

16

$$77\,000 - 707 =$$



1 mark

17

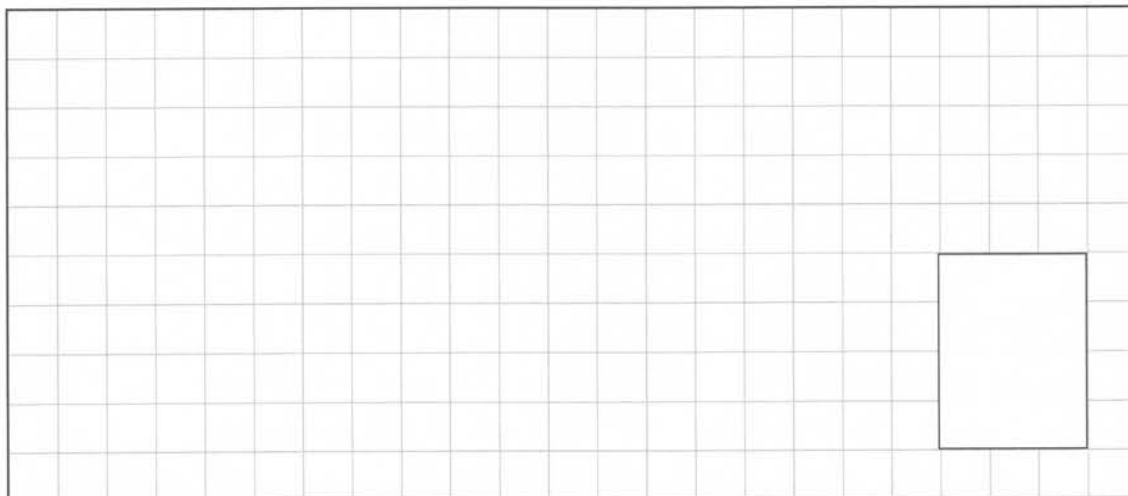
$$5474 \div 7 =$$



1 mark

18

$$\frac{2}{7} + \frac{4}{7} =$$



1 mark

19

$$55 - 5.72 =$$



1 mark

20

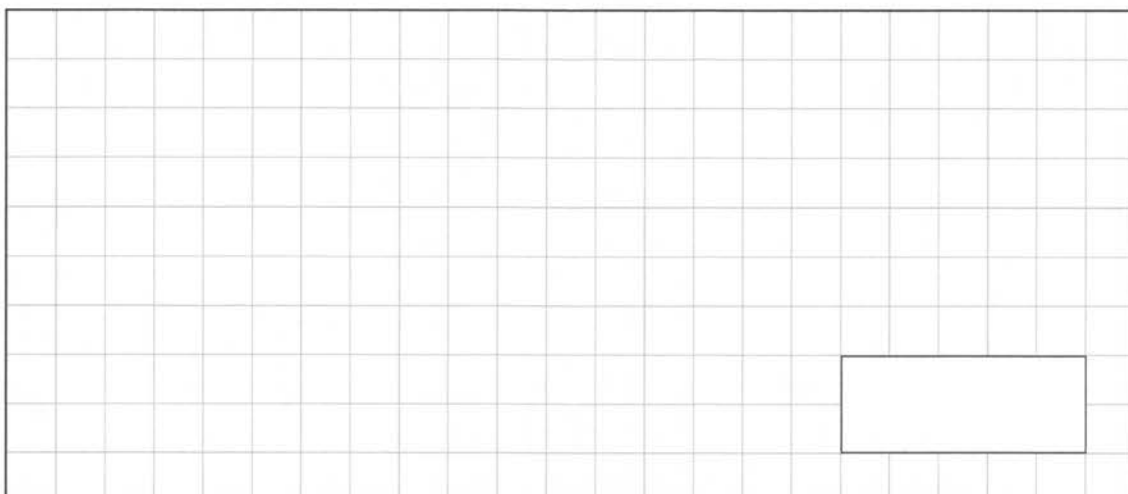
$$569\,898 - 70\,919 =$$



1 mark

21

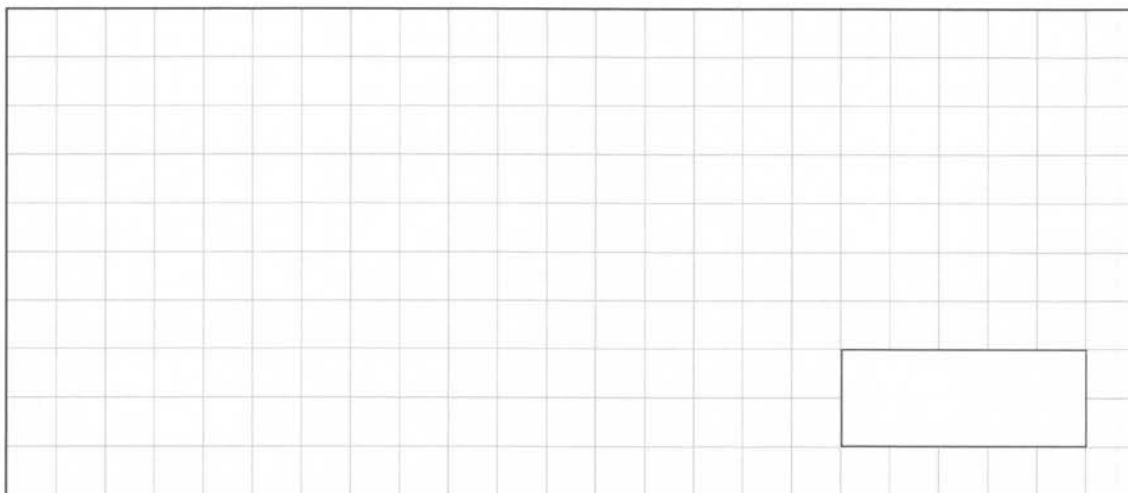
$$1.5 \div 1000 =$$



1 mark

22

$$2^3 + 2 =$$



1 mark

23

$$2310 \div 11 =$$



1 mark

24

$$12 \times 7.4 =$$



1 mark

25

$$\begin{array}{r} 664 \\ \times 34 \\ \hline \end{array}$$

Show
your
working

2 marks

26

20% of 2400 =

1 mark

27

$$39 \overline{) 975}$$

Show
your
working

2 marks

28

$$\frac{5}{6} + 1\frac{1}{12} =$$

1 mark

29

$$16.253 - 7.36 =$$

1 mark

30

$$\begin{array}{r} 4922 \\ \times 77 \\ \hline \end{array}$$

Show
your
working

2 marks

31

$$22\% \times 350 =$$

1 mark

32

$$\frac{1}{2} \times \frac{2}{3} =$$

1 mark

33

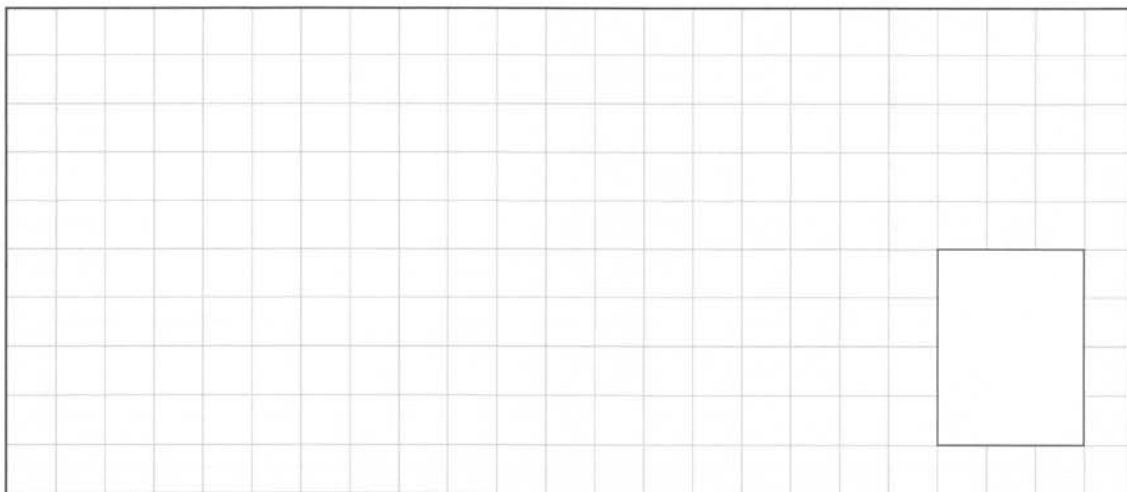
$$45 \overline{) 6885}$$

Show
your
working

2 marks

34

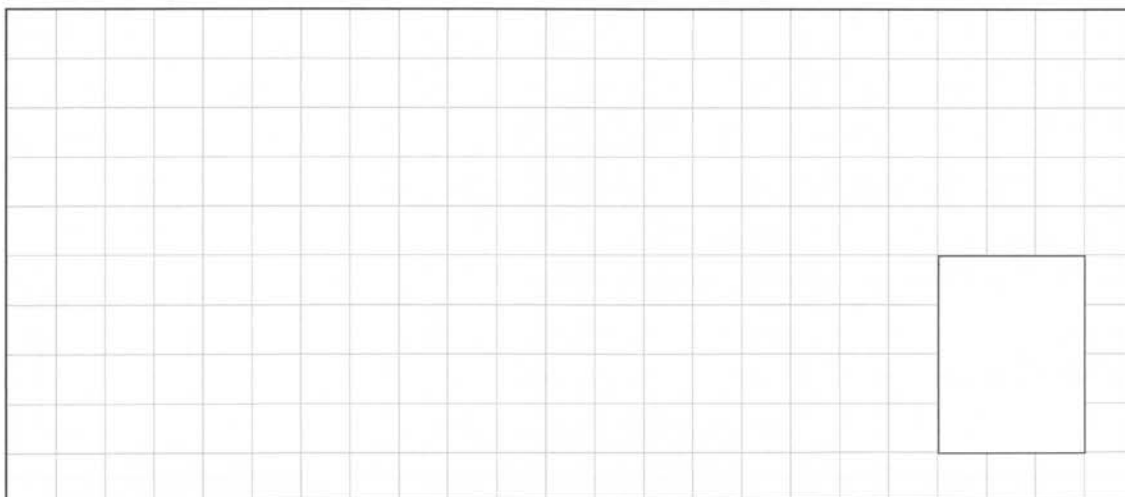
$$\frac{7}{10} \div 9 =$$



1 mark

35

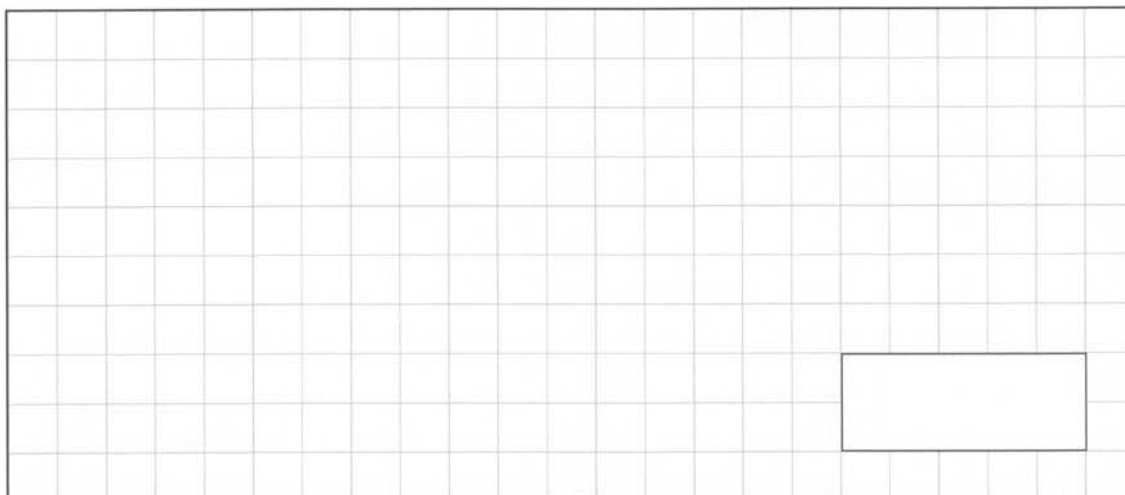
$$\frac{1}{4} + \frac{4}{5} =$$



1 mark

36

$$44 + 72 \div 12 =$$



1 mark

Key Stage Two Mathematics



Set A Paper 2: Reasoning

Calculator Not Allowed
40 minutes

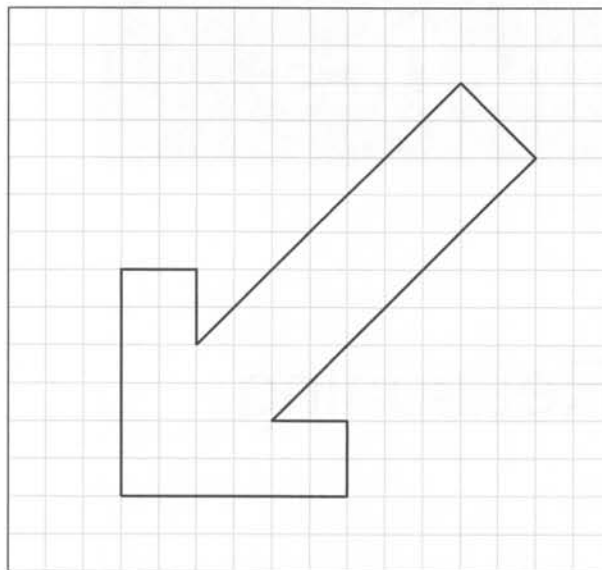
First name						
Middle name						
Last name						
School						
Date of birth	Day		Month		Year	

Total marks

--

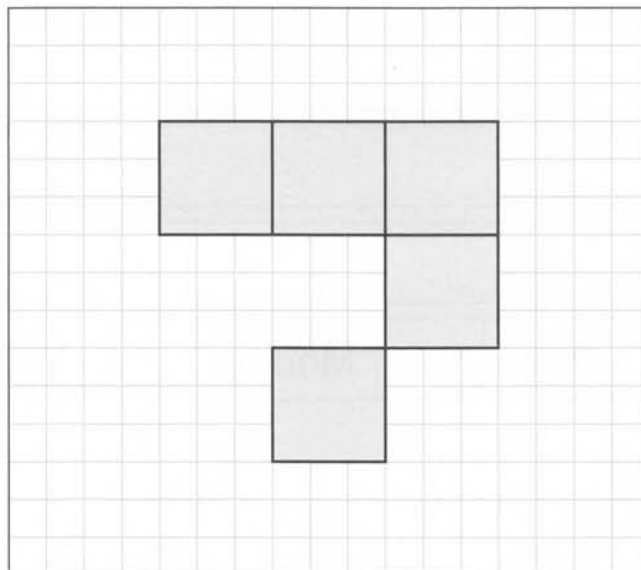
1

Draw the line of symmetry of this shape.



1 mark

Draw **one** more square on the grid to give this shape a line of symmetry.



1 mark

2 David needs 120 slices of bread to make sandwiches for a party.
He buys 6 loaves of bread.
Each loaf contains 22 slices.

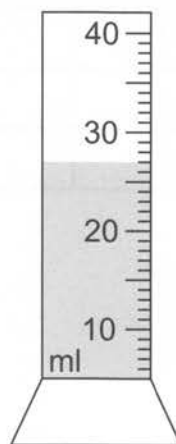
How many slices are **left over** after David has made the sandwiches?

Show
your
working

A diagram showing a large rectangle divided into a 10x10 grid of smaller squares. The word "slices" is written in a box at the bottom right of the grid.

2 marks

3 At 9 am there were **12 ml** of rainwater in this measuring cylinder. The diagram shows the cylinder at 4 pm on the same day.



How much rain fell into the cylinder between 9 am and 4 pm?

ml

1 mark

6 ml of rain fell between 4 pm and 8 pm.

Draw a line on the cylinder to show the amount of water in the cylinder at 8 pm.

1 mark

4

This table shows the prize money in a lottery.

March	April	May	June
£7 651 302	£7 648 999	£6 988 256	£7 651 298

Write the months in order of their prize money, starting with the month with the **largest** prize.

largest

smallest

1 mark

5

A game has two rounds.

The table shows the scores that three children got in each round.

	Round 1	Round 2
Tom	-2	1
Aziza	-1	0
Billy	3	-1

Who got the **lowest** score in round 1?

1 mark

What is the **difference** between the scores Billy got in round 1 and round 2?

1 mark

6

Fill in the missing numbers to make the calculation correct.

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 5 & 2 & \\ \hline \end{array} \\
 - \begin{array}{|c|c|c|} \hline & 7 & 4 \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|} \hline 1 & & 5 \\ \hline \end{array}
 \end{array}$$

2 marks

7

Look at these numbers.

5.225

5.525

5.22

5.25

Which number is **closest** to 5?

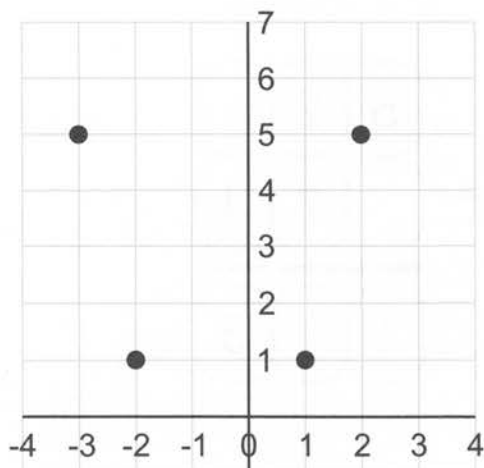
1 mark

What is the **difference** between the largest and smallest numbers in the list?

1 mark

8

Four vertices of a shape have been drawn on this grid.



The final vertex of the shape is at **(0, 6)**.

Write the **name** of the shape in the box and circle **regular** or **irregular** to make the sentences correct.

The shape is a

It is regular / irregular .

2 marks

9

What is the largest **odd** factor of 28?

1 mark

What is the largest multiple of 11 that is **less than** 130?

1 mark

10

A circus has 17 clowns.

Each clown needs 5 custard pies.

One custard pie uses 35 ml of cream.

How much cream does the circus use in total?

Show
your
working


2 marks

11

Each of these shapes stands for a number.

$$\triangle + \star = 40$$

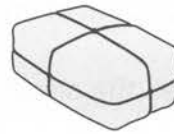
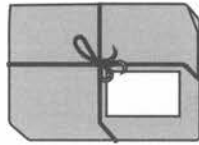
$$\hexagon + \hexagon + \star + \triangle = 72$$

What number does  stand for?

Show
your
working

2 marks

Look at the weights of these parcels.



What is the mean weight of the four parcels?

kg

1 mark

Polly is buying some fruit.

5 pineapples cost the same as 8 mangoes.

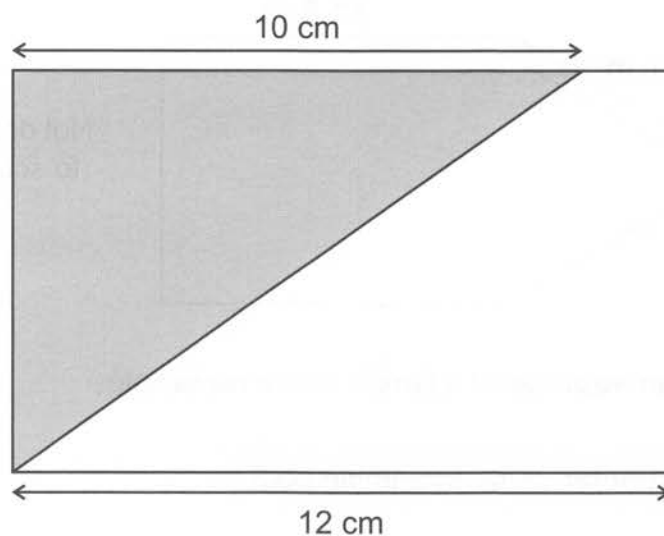
A mango costs £1.25.

How much does **one** pineapple cost?

Show
your
working

A blank sheet of graph paper with a light gray grid pattern. The grid consists of small squares covering the entire page. There are no margins or other markings on the paper.

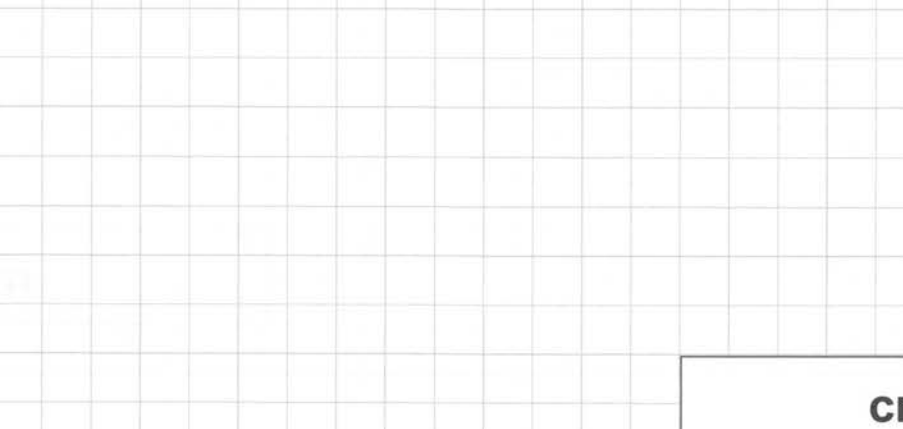
The diagram shows the design of a flag.
The flag is rectangular, with an area of 96 cm^2 .



Not drawn
to scale.

What is the area of the grey triangle?

Show
your
working



A large grid of graph paper, 20 squares wide and 15 squares high. Each square represents 1 cm by 1 cm. In the bottom right corner, there is a rectangular box containing the text "cm²".

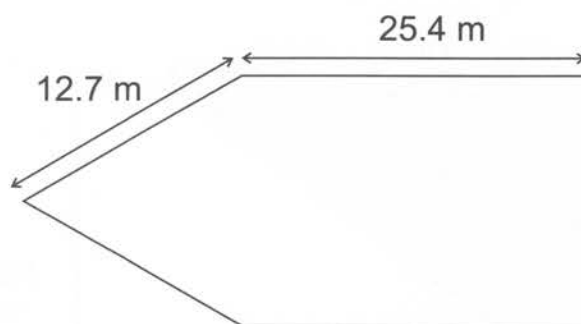
2 marks

Complete the calculation to make it correct.

$$2.5 \times \square = 100$$

1 mark

Here is a diagram of a swimming pool.



Not drawn
to scale.

It is made up of an **equilateral triangle** and a **rectangle**.

Calculate the **perimeter** of the swimming pool.

Show
your
working

m

2 marks

Circle **two** fractions that add together to give $1\frac{3}{7}$.

$$\frac{6}{7}$$

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

$$\frac{11}{7}$$

$$\frac{4}{7}$$

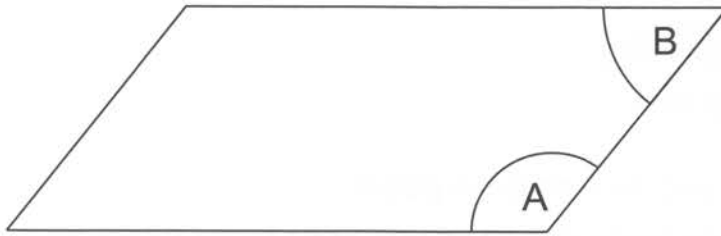
$1\frac{1}{7}$

$1\frac{2}{7}$

1 mark

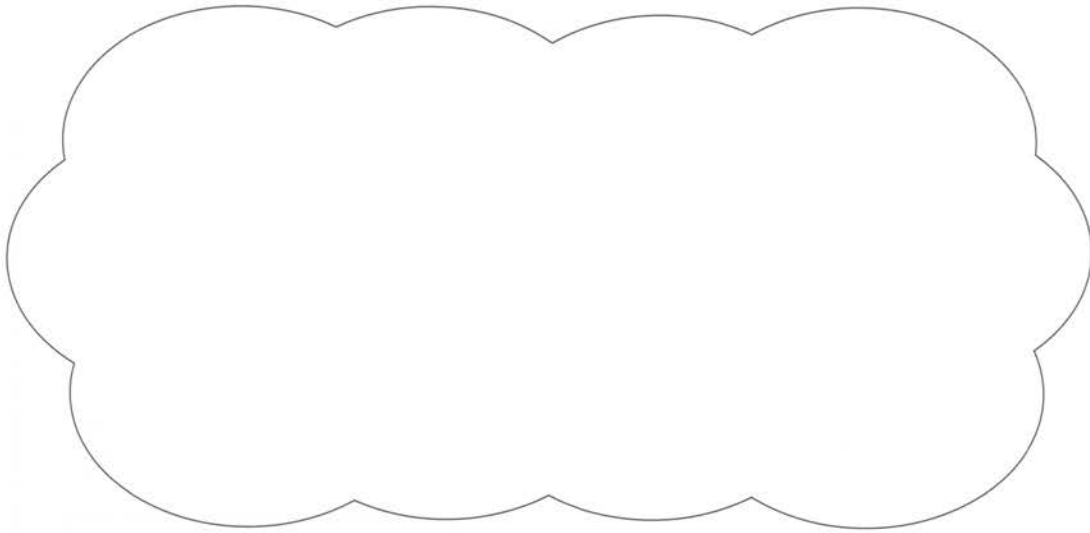
18

Mina measures these two angles inside a **parallelogram**.



She says “angle A is 130° and angle B is 70° ”.

Explain how you know that Mina is wrong.
Do **not** use a protractor (angle measurer).



1 mark

19

David is driving in France. He sees a sign that says Paris is 96 km away.

How many **miles** away from Paris is David?

miles

1 mark

20

Aziza is sending books, pens and rubbers in a parcel.

The books weigh 255 g each.

A set of 5 pens weighs 30 g.

Rubbers weigh 20 g each.

Aziza puts 6 books and 20 pens in the parcel.

The total weight of the items in the parcel must be no more than 2 kg.

What is the largest number of rubbers that she can put in the parcel?

Show
your
working

The grid is 20 units wide and 20 units high. A small rectangular box is located in the bottom right corner of the grid, containing the word "rubbers".

3 marks

Key Stage Two Mathematics



Set A Paper 3: Reasoning

Calculator Not Allowed
40 minutes

First name						
Middle name						
Last name						
School						
Date of birth	Day		Month		Year	

Total marks

--

- 1 The table below shows the number of people at two football stadiums.

	13 th August	27 th August
Stadium A	9562	7888
Stadium B	8721	8930

How many people **in total** were at the two stadiums on 13th August?

1 mark

How many **fewer** people were at Stadium A on 27th August than on 13th August?

1 mark

- 2 Circle the number that is made up of **eight tenths** and **three hundredths**.

8.3

0.83

0.38

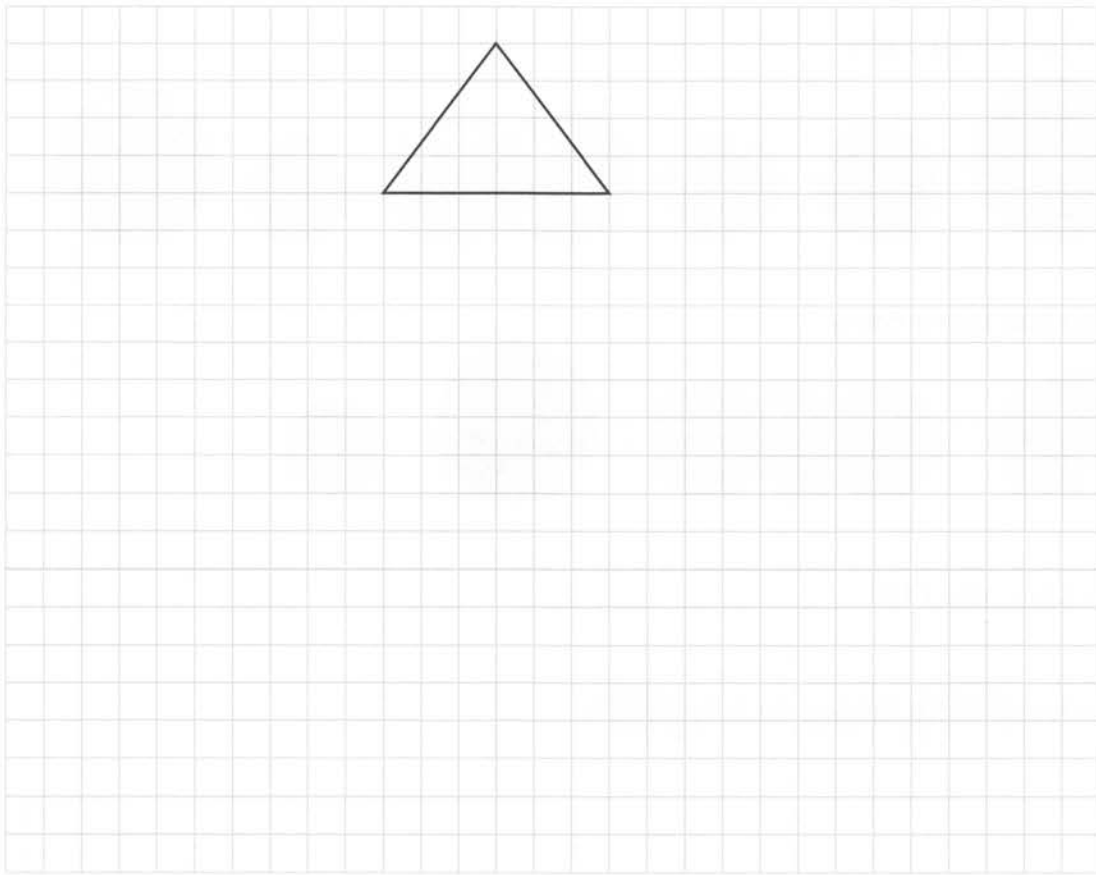
0.083

0.308

1 mark

3

Complete this net of a square-based pyramid.



1 mark

4

How many seconds are there in 8 minutes?

seconds

1 mark

How many hours are there in 3 days?

hours

1 mark

Tom and Aziza want to put their money together to buy a kite.

How much more money do they need?

A blank sheet of graph paper with a grid pattern. The grid consists of small squares formed by thin gray lines. A thicker black border frames the entire page. In the bottom right corner, there is a rectangular box defined by a black outline, which appears to be a placeholder for a logo or signature.

Fill in the next two numbers in this sequence.

□

1 mark

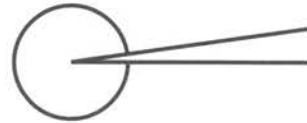
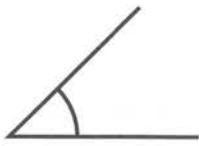
7

Draw lines to match each angle with the word that describes it.

Reflex

Acute

Obtuse



2 marks

8

Part of a bus timetable is shown below.

Diamond Street	13:23	13:55	14:05	14:23
Rhombus Road	13:31	14:03	14:13	14:31
Kite Square	13:36	14:08	14:18	14:36
Trapezium Alley	13:42	14:14	14:24	14:42

How long does the bus take to get from Diamond Street to Trapezium Alley?

minutes

1 mark

Tom catches a bus from Diamond Street. It leaves on time.
At quarter past two the bus is **between** Rhombus Road and Kite Square.

What time did the bus leave Diamond Street?

1 mark

9

A number has **three** prime factors.
Two of its prime factors are 3 and 5.
The other prime factor is even.

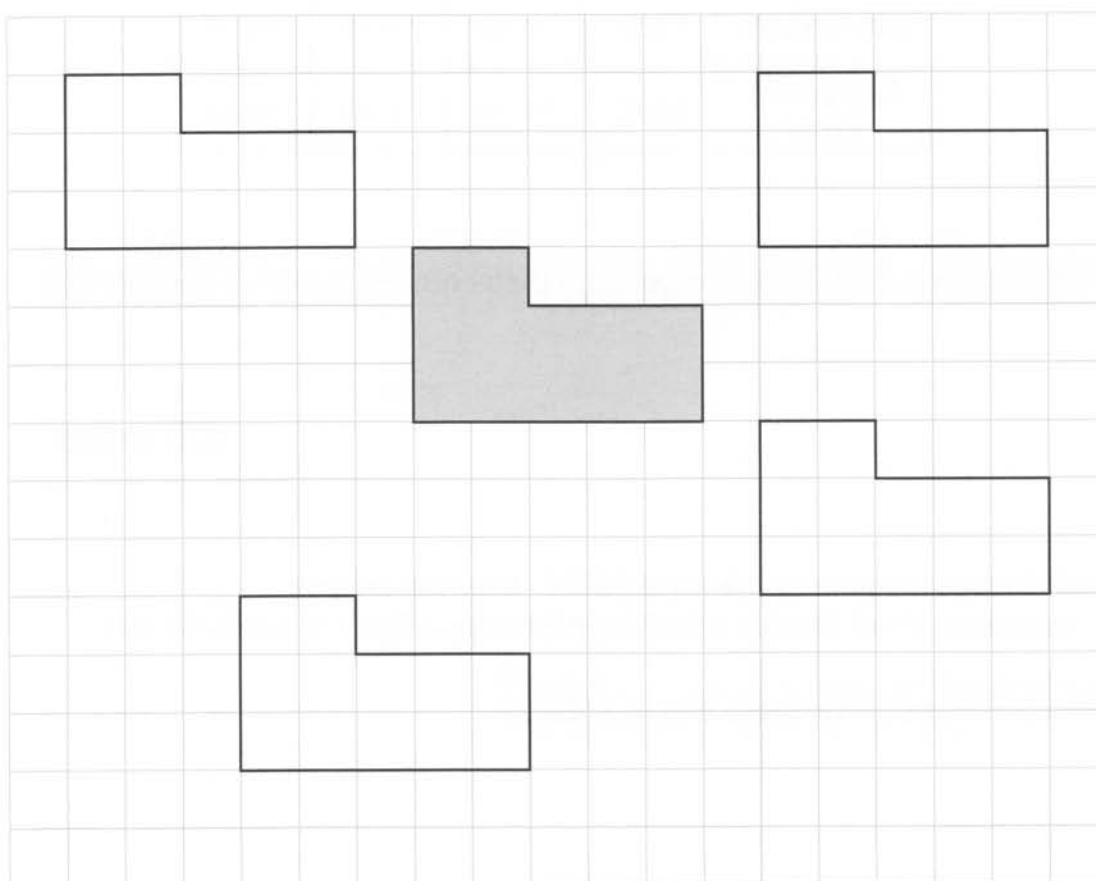
What is the number?

1 mark

10

The grey shape is translated **3 squares up** and **6 squares to the right**.

Put a tick in the outline that shows the position of the shape after this translation.



1 mark

1 mark

$$5c + 50 = 75$$

What is the value of c ?

--

1 mark

12


Aziza mixes different colours to make green paint.

$\frac{2}{5}$ of the paint she uses is blue.

The green paint she makes fills **four 250 ml pots**.

How much **blue** paint does she use in total?

Show
your
working



ml

2 marks

Here is a calculation.

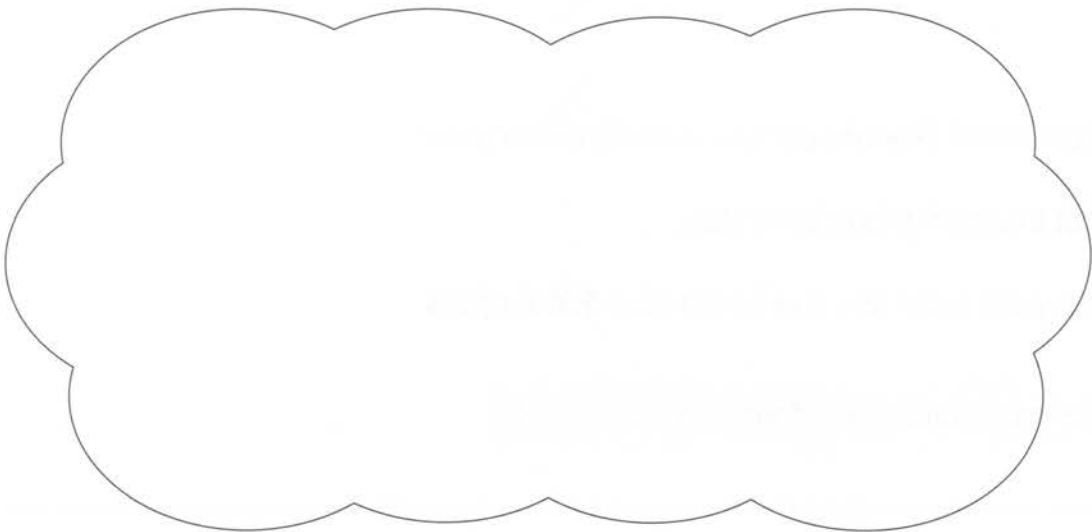
$$5.8 \times 49\,998$$

Fill in the boxes to show how you could **estimate** the answer to this calculation.

	\times		$=$	
--	----------	--	-----	--

1 mark

Is your estimate **more** or **less** than the actual answer?
Explain how you know.



1 mark

14

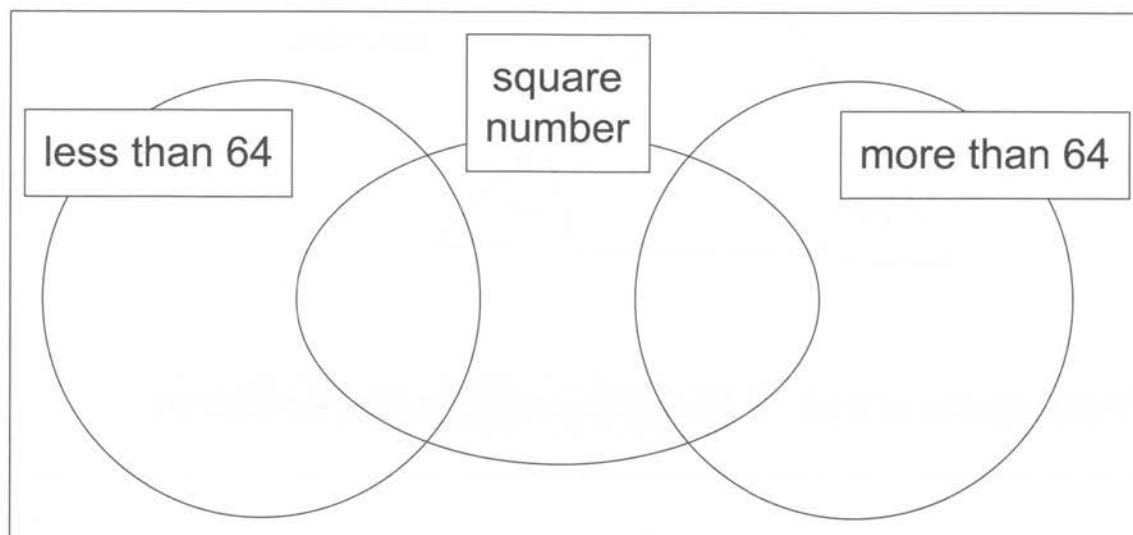
Look at these Roman numerals.

XC

XXV

LXIV

Write each Roman numeral in the correct place on the diagram.



2 marks

15

Tom's desk is 0.7 m tall.

His desk is half as tall as his drawers.

His drawers are 0.5 m shorter than his wardrobe.

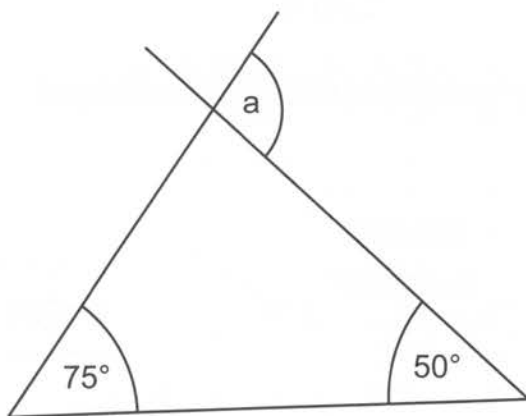
How tall is Tom's wardrobe?

Show
your
working

2 marks

16

Look at this diagram.



Not drawn accurately.

What is the size of angle a ? Do not use a protractor (angle measurer).

Show
your
working

A blank sheet of graph paper with a grid pattern. A small black dot is located near the bottom right corner.

2 marks

17

A dessert recipe needs 25 ml of syrup for every 80 g of ice cream used.

One day, a restaurant uses 4 kg of ice cream to make the desserts.

How many **litres** of syrup do they use?

Show
your
working

A large grid for showing working, with a box labeled "litres" at the bottom right.

2 marks

18

Fill in the boxes to make these calculations correct.

$$\frac{5}{6} \div \square = \frac{5}{18}$$

1 mark

$$\frac{2}{3} \square \frac{6}{7} = \frac{4}{7}$$

1 mark

19

Kishan is doing a sponsored swim.

He has done $\frac{5}{7}$ of the swim.

He still has another 100 m to go.

How long is the sponsored swim?

Show
your
working

2 marks

20

Add brackets to make each calculation correct.

$$5 \times 7 - 3 + 4 = 24$$

1 mark

$$6 - 3 \times 4 + 8 = 36$$

1 mark

Key Stage Two Mathematics



Set B Paper 1: Arithmetic

Calculator Not Allowed
30 minutes

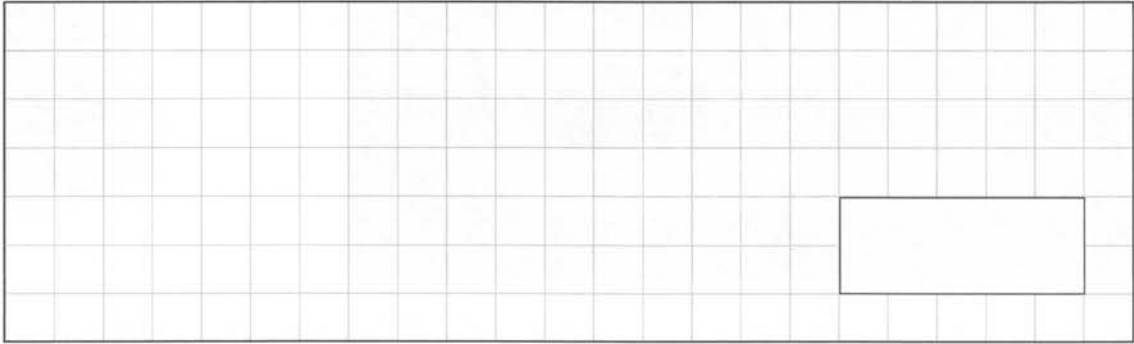
First name						
Middle name						
Last name						
School						
Date of birth	Day		Month		Year	

Total marks

--

1

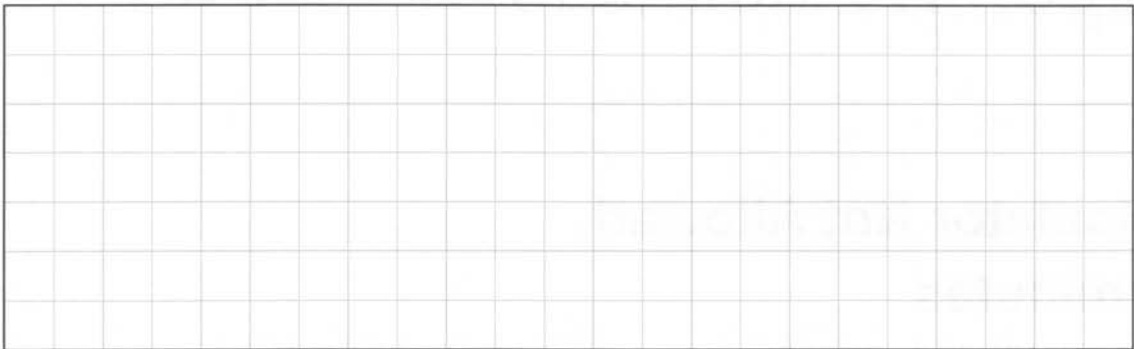
$50 \times 3 =$



1 mark

2

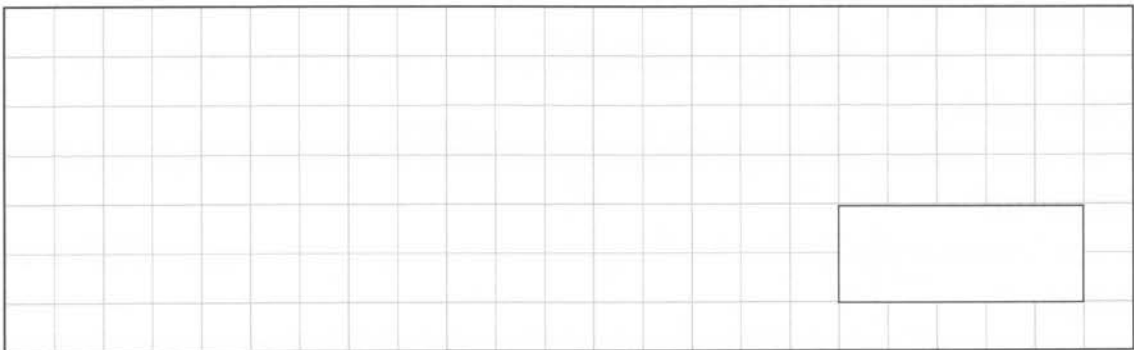
$\boxed{} = 7 \div 7$



1 mark

3

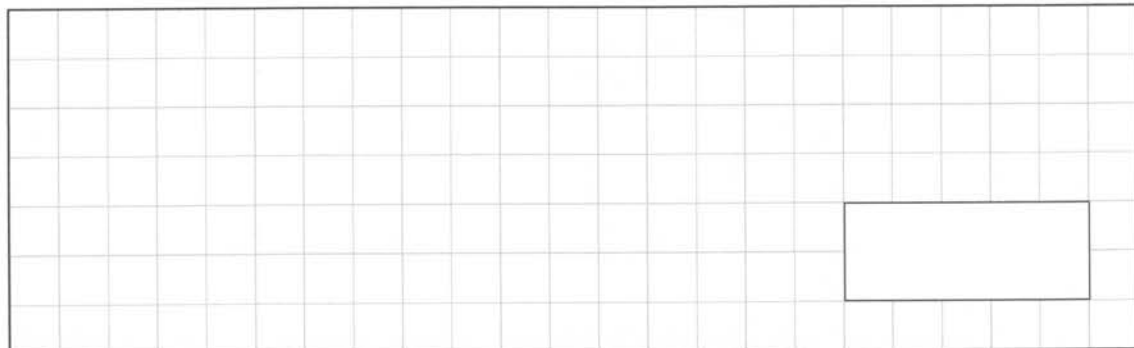
$55 + 2050 =$



1 mark

4

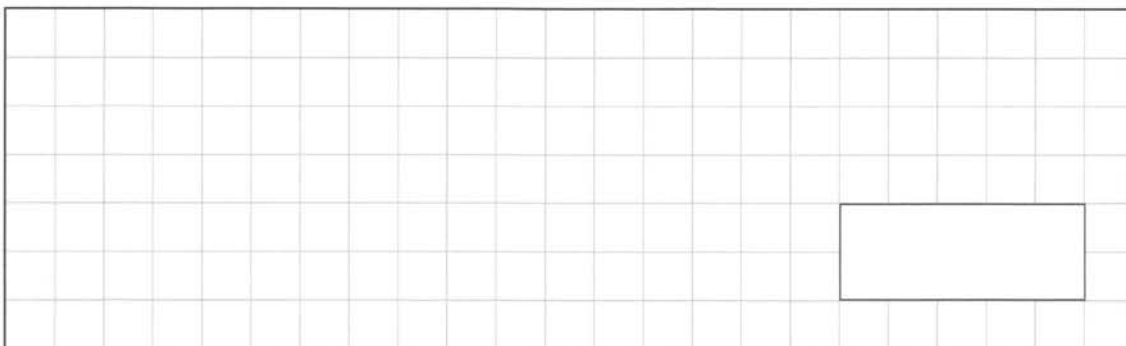
$462 - 41 =$



1 mark

5

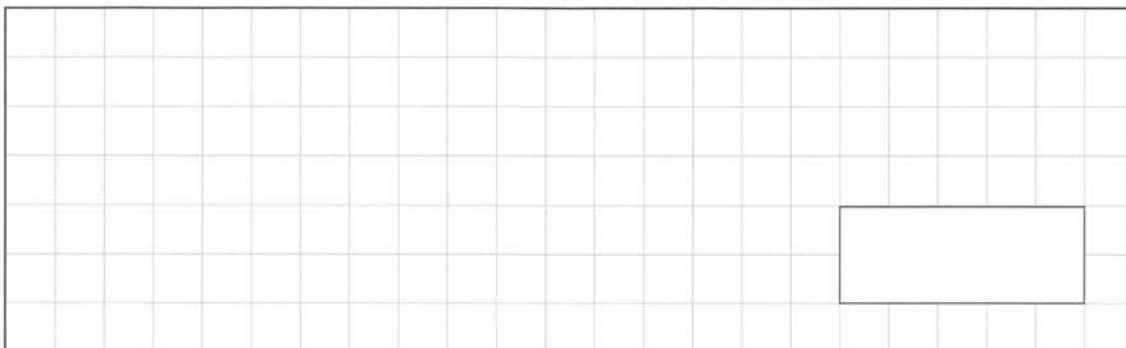
$11 \times 8 =$



1 mark

6

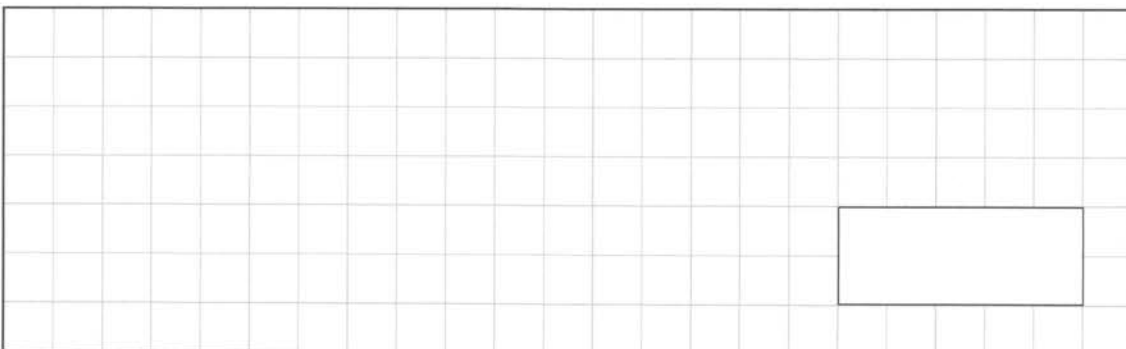
$0.4 + 1.6 =$



1 mark

7

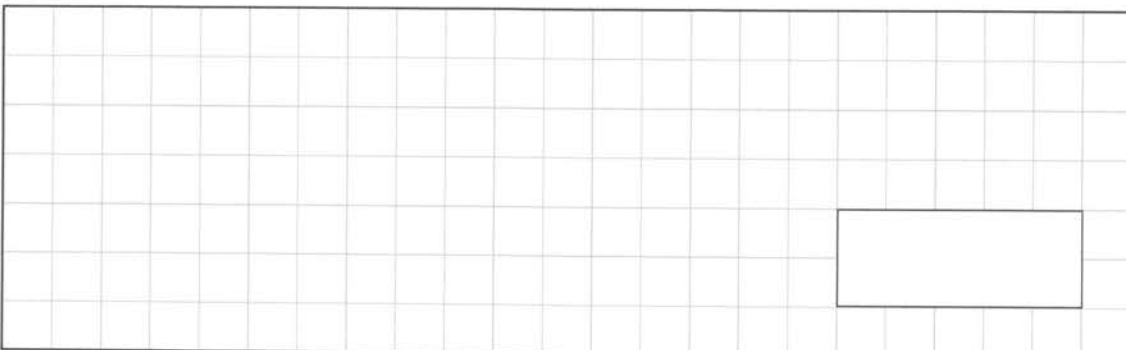
$96 \div 8 =$



1 mark

8

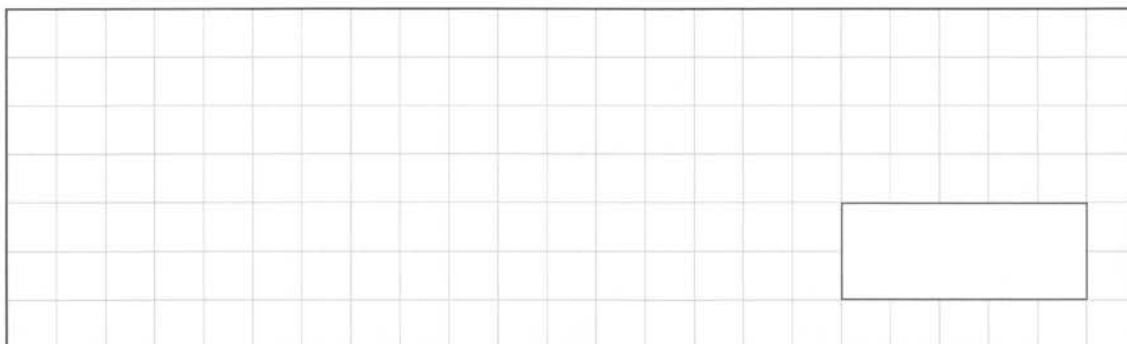
$70\,006 + 7995 =$



1 mark

9

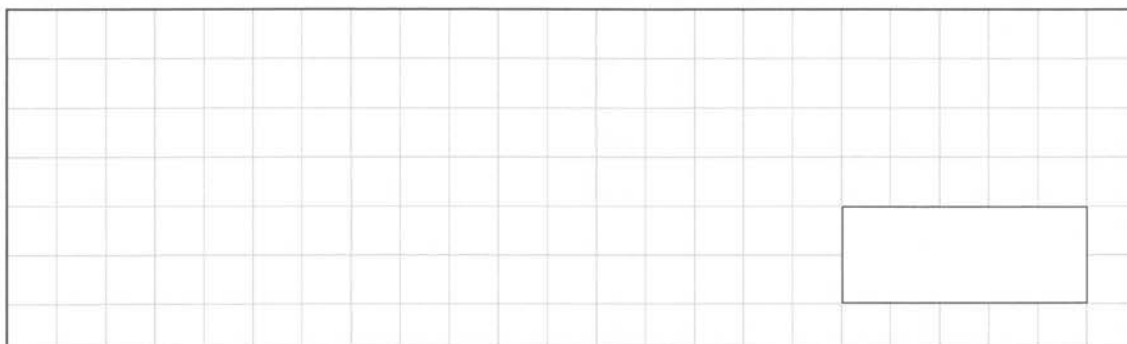
$80 \times 70 =$



1 mark

10

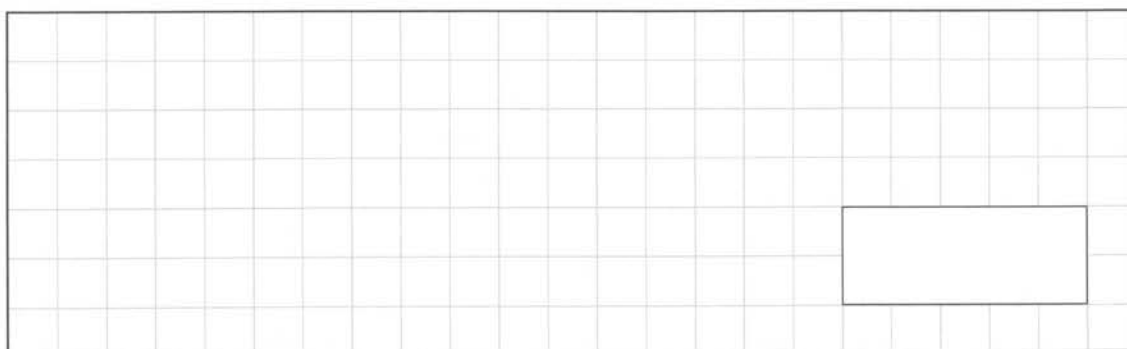
$30\,000 - 800 =$



1 mark

11

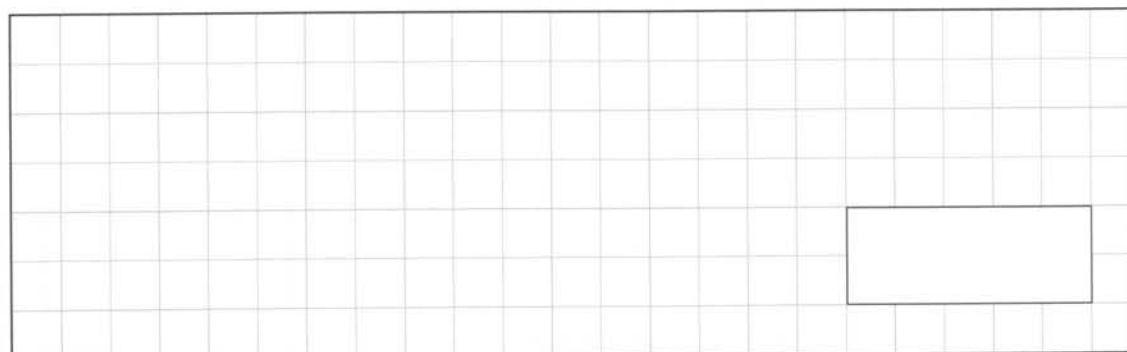
$746 \times 5 =$



1 mark

12

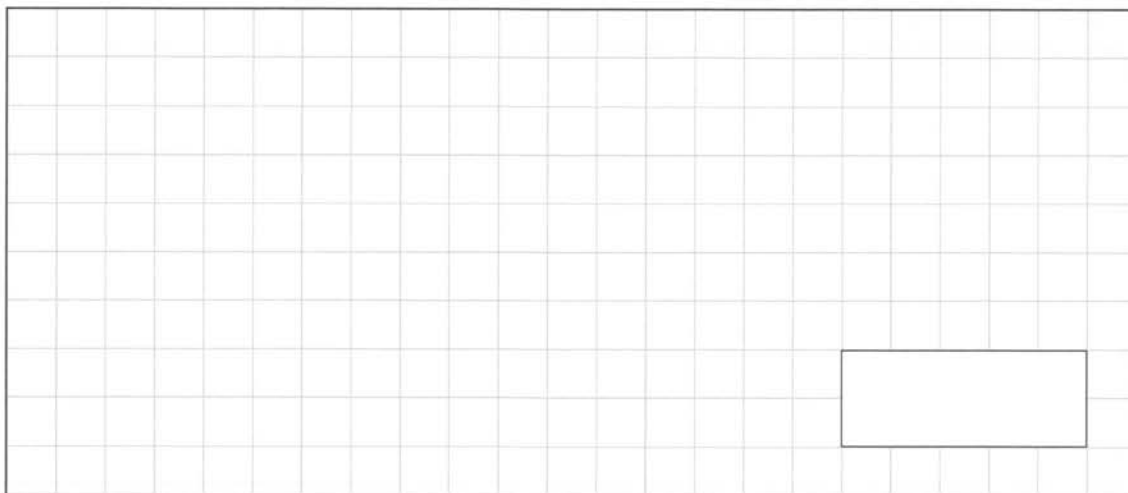
$89 \times 1000 =$



1 mark

13

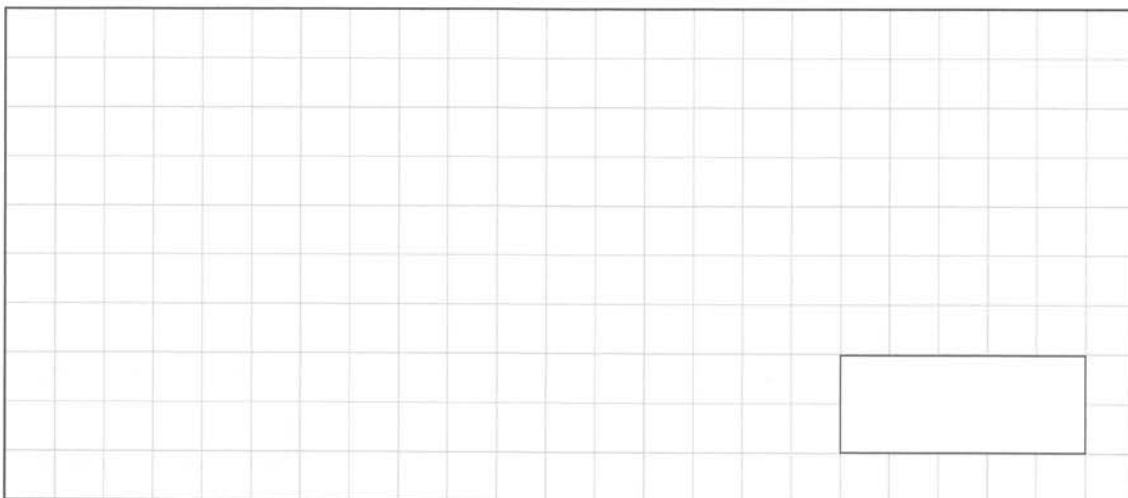
$$582 \div 6 =$$



1 mark

14

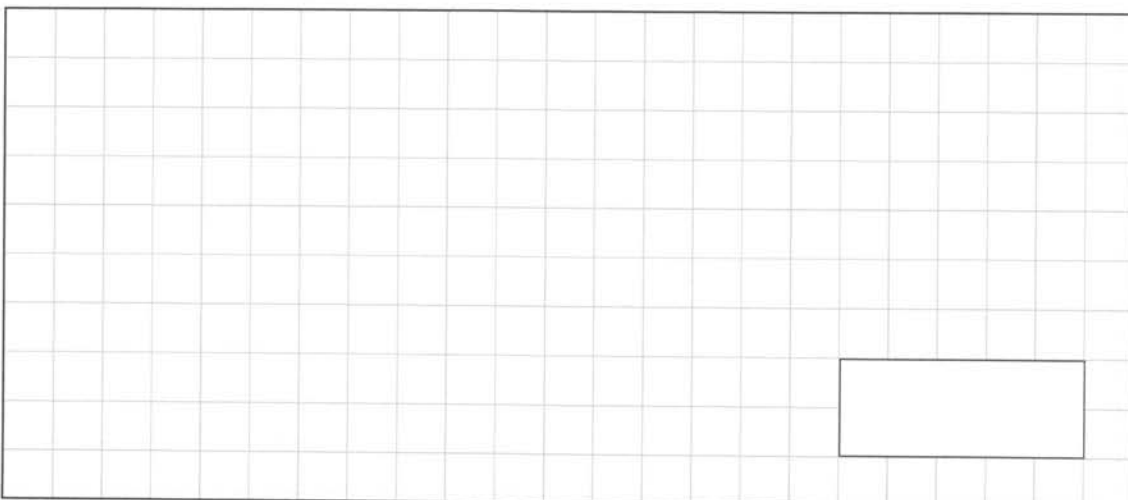
$$20.002 + 1.18 =$$



1 mark

15

$$36 \div 100 =$$



1 mark

16

$$= 30\,216 - 5492$$

1 mark

17

$$10\% \text{ of } 640 =$$

1 mark

18

$$333.36 - 21.21 =$$

1 mark

19

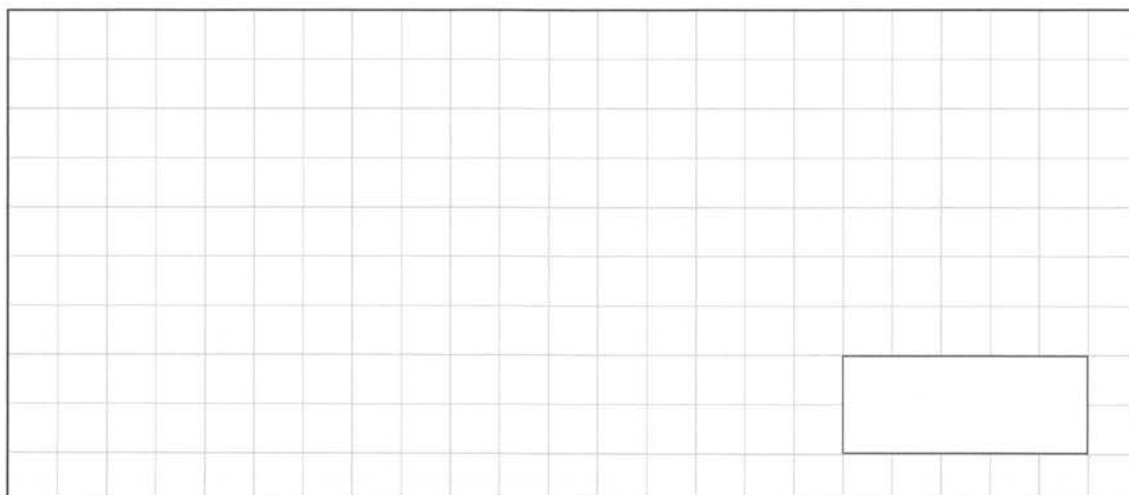
$$\frac{11}{13} - \frac{5}{13} =$$



1 mark

20

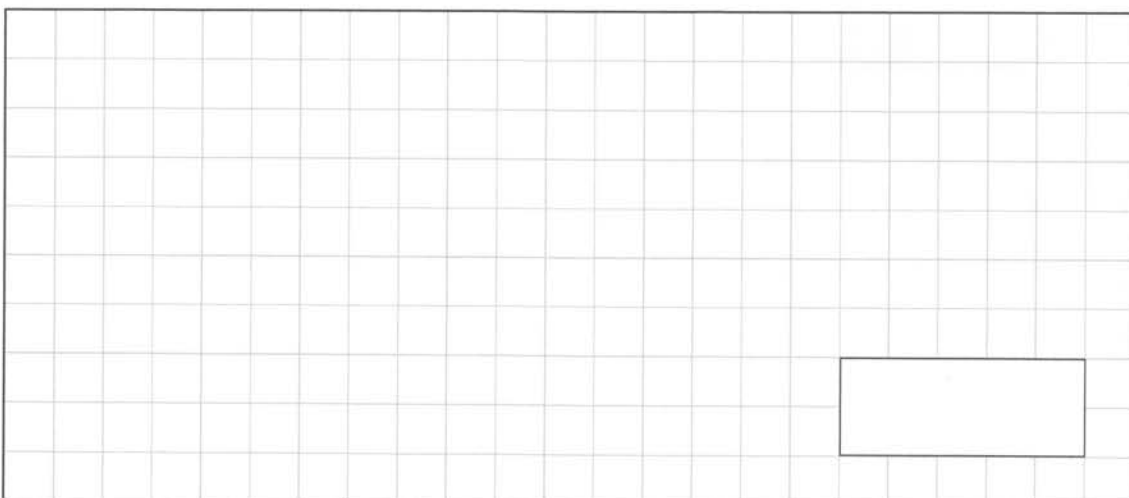
$$5^2 + 5 =$$



1 mark

21

$$680\,501 - 12\,689 =$$



1 mark

22

$$8400 \div 12 =$$

1 mark

23

$$8 - 4.35 =$$

1 mark

24

$$\begin{array}{r} \times \quad 59 \\ \hline 52 \end{array}$$

Show
your
working

2 marks

25

$$1\frac{2}{3} + \frac{2}{3} =$$

1 mark

26

$$\frac{1}{6} \times \frac{1}{7} =$$

1 mark

27

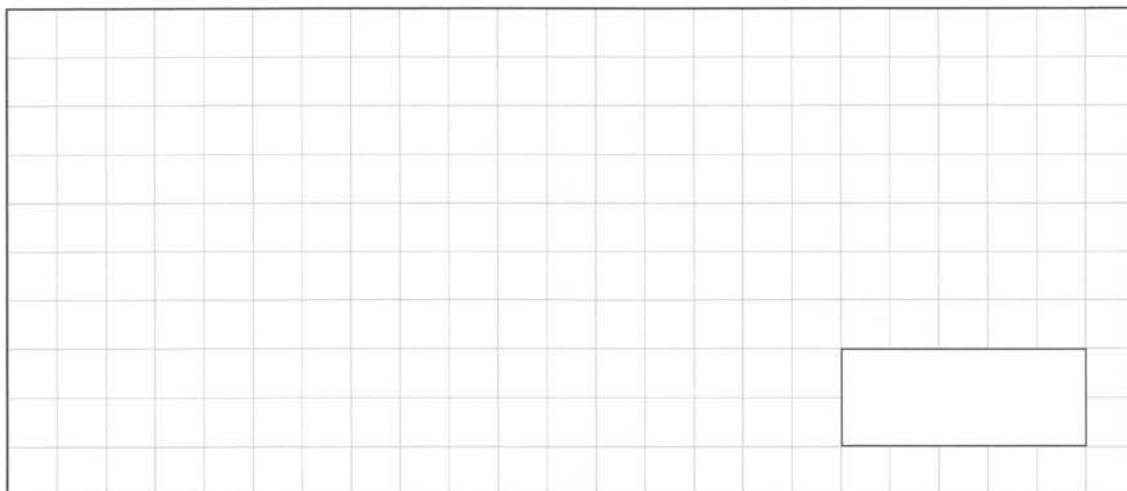
$$17 \overline{) 595}$$

Show
your
working

2 marks

28

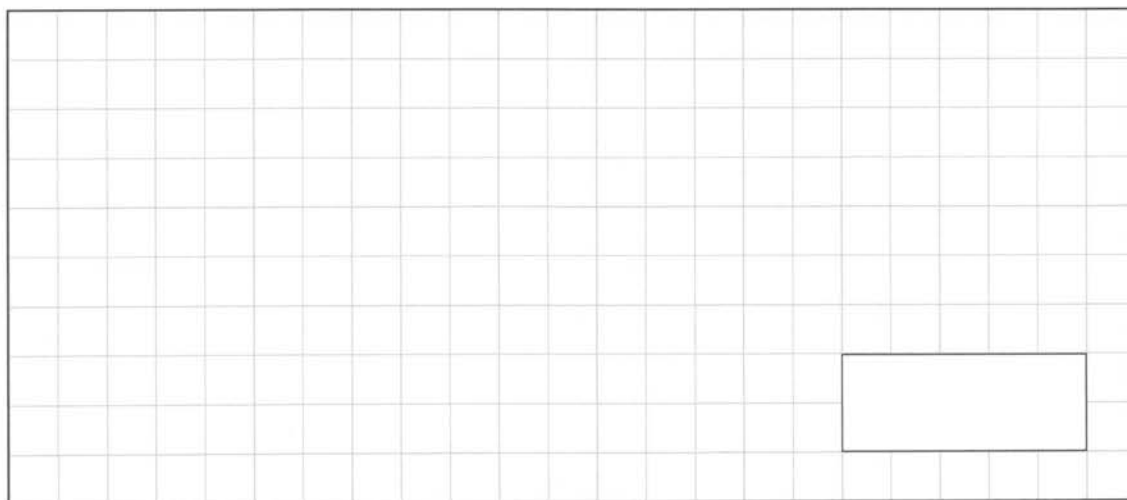
$$15 \times \frac{3}{5} =$$



1 mark

29

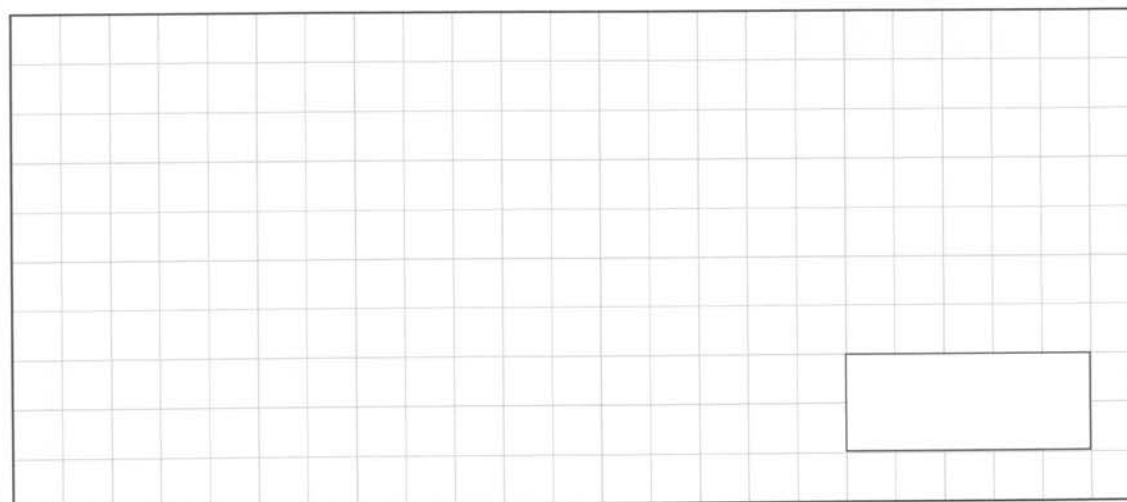
$$13 \times 5.6 =$$



1 mark

30

$$85\% \times 80 =$$



1 mark

31

$$\frac{13}{14} + \frac{1}{28} =$$

1 mark

32

$$\begin{array}{r} 3784 \\ \times \quad 26 \\ \hline \end{array}$$

Show
your
working

2 marks

33

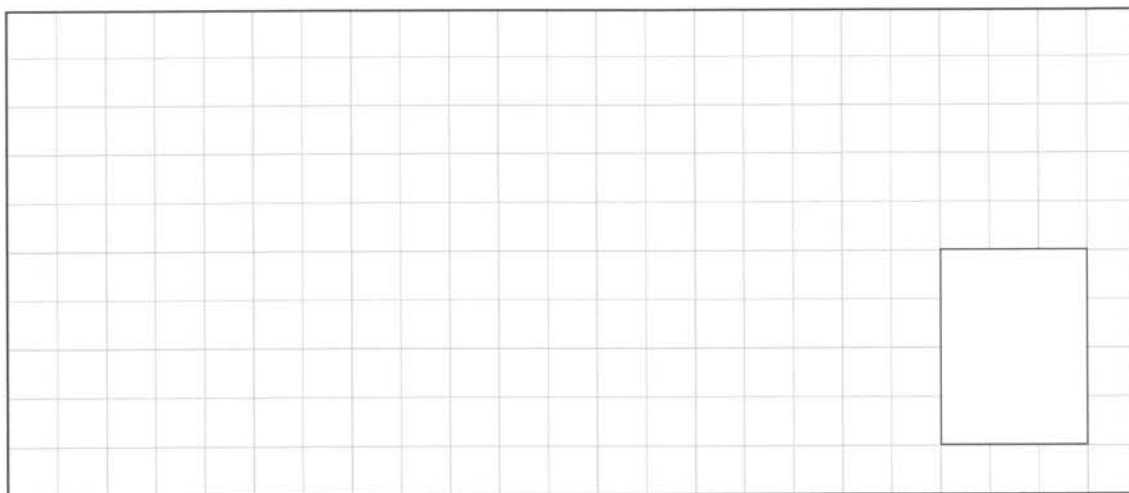
$$37 \overline{) 2701}$$

Show
your
working

2 marks

34

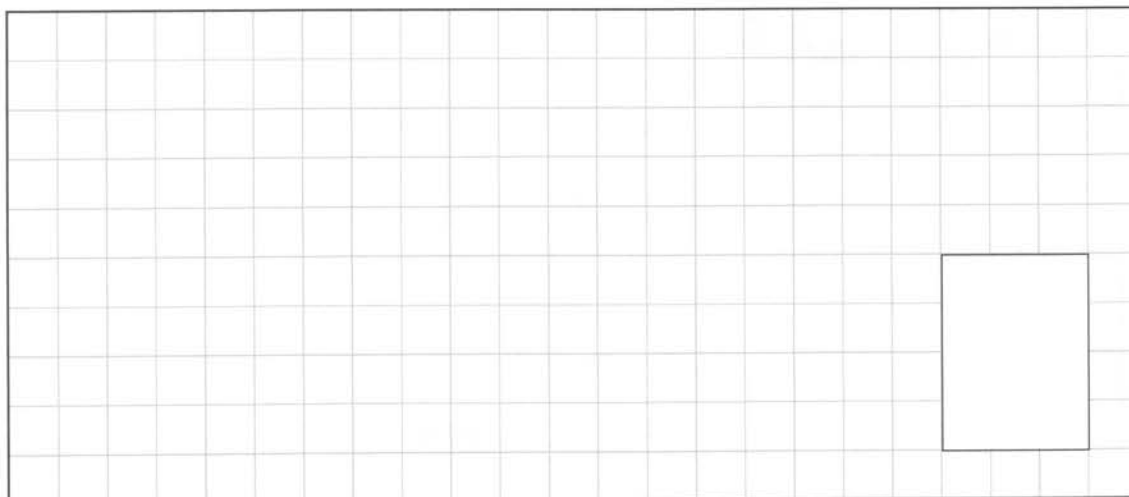
$$1\frac{2}{3} - \frac{3}{4} =$$



1 mark

35

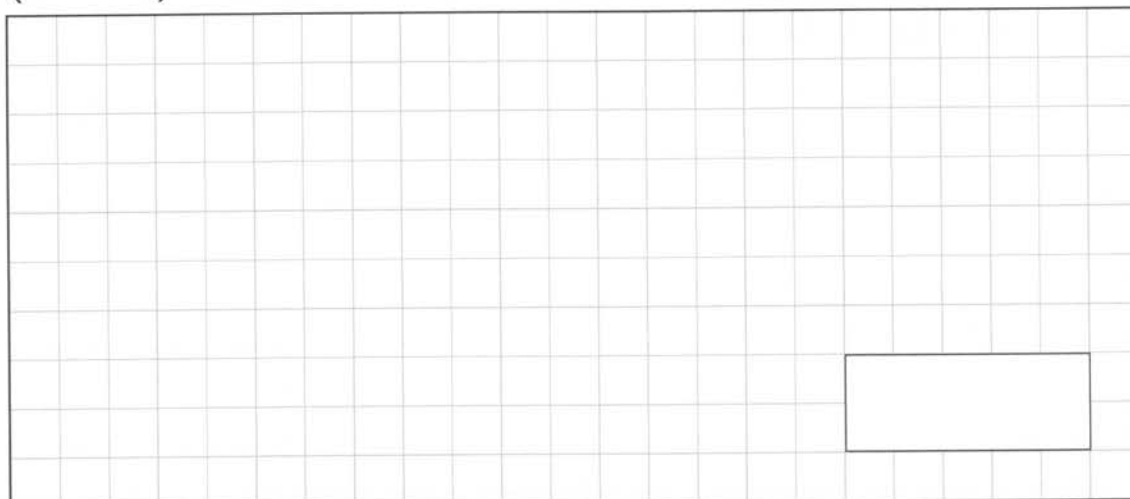
$$\frac{4}{5} \div 5 =$$



1 mark

36

$$(10 - 2) + 14 \times 2 =$$



1 mark

Key Stage Two Mathematics



Set B Paper 2: Reasoning

Calculator Not Allowed
40 minutes

First name						
Middle name						
Last name						
School						
Date of birth	Day		Month		Year	

Total marks

--

1

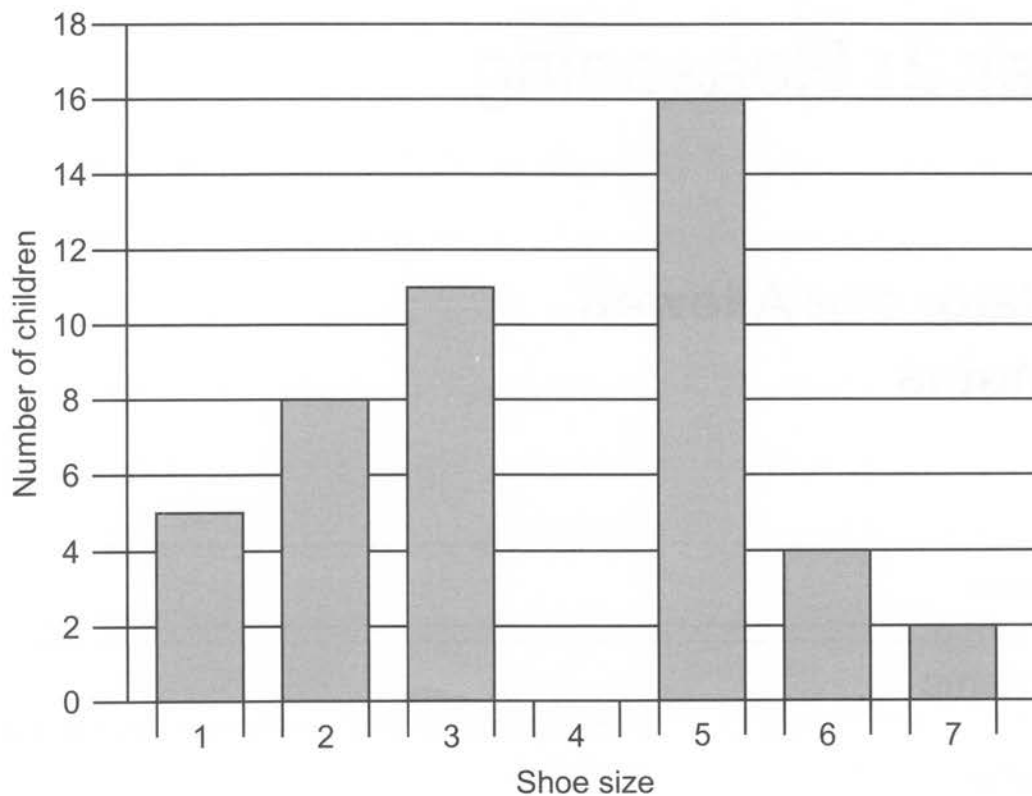
Complete this number sequence.

45 294 35 294 25 294

1 mark

2

The bar chart shows the shoes sizes of some children in a youth club.



The number of children with size 4 feet was **half** the number of children with size 5 feet.

Draw a bar on the bar chart to show this.

1 mark

How many children have a shoe size of **3 or smaller**?

children

1 mark

3

Write down two **prime** numbers that add together to give 24.

and

1 mark

4

A garage sells these two cars in one day.



£31 765



£18 999

How much money does the garage make **in total**?

1 mark

What is the **difference** between the price of the two cars?

1 mark

5

Put these numbers in order from smallest to largest.

0.82

0.783

1.02

0.824

1.1

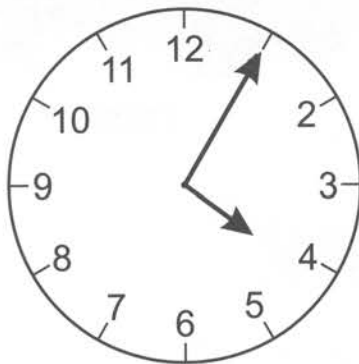
smallest

largest

1 mark

6

The diagrams show the displays on two clocks at the same time one afternoon.



This clock shows
the correct time.

15:57

This clock is slow.

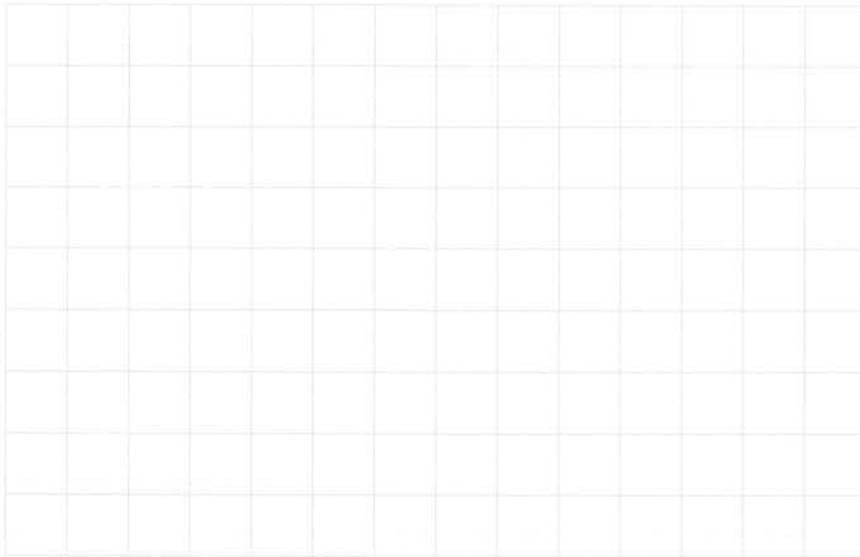
How many minutes **slow** is the digital clock?

minutes

1 mark

7

Draw **two** rectangles on the grid below.
Both rectangles must have an **area of 6 square units**.
They must have **different perimeters**.



1 mark

8

Four trumpets are **192 cm** long in total.

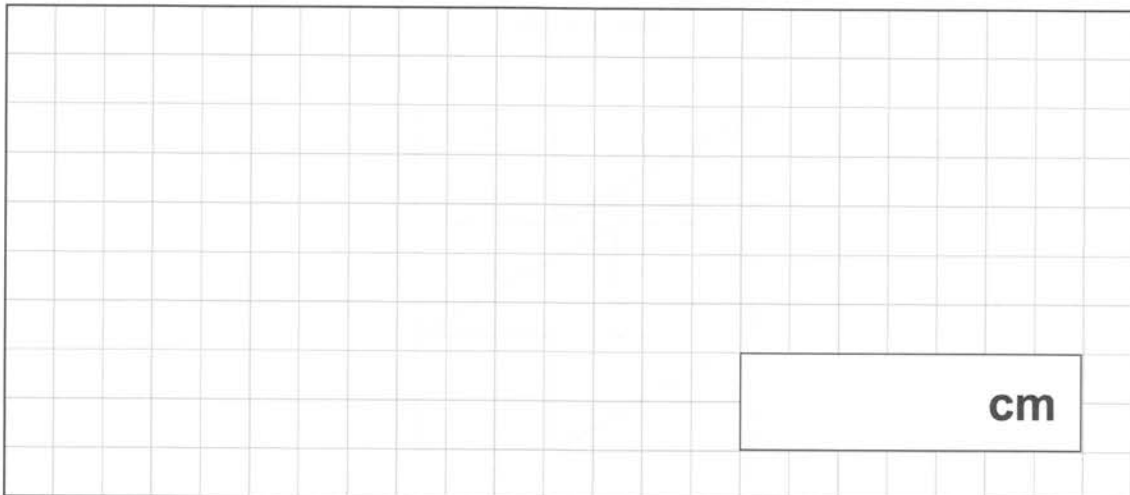


Two trumpets and a clarinet are **155 cm** long in total.



How long is the **clarinet**?

Show
your
working



2 marks

9

Juan walks the same distance each day for seven days.
He walks 6.3 km in total.

How many **metres** does he walk each day?

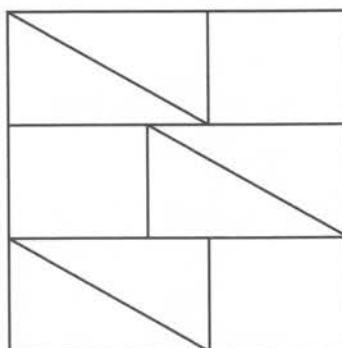
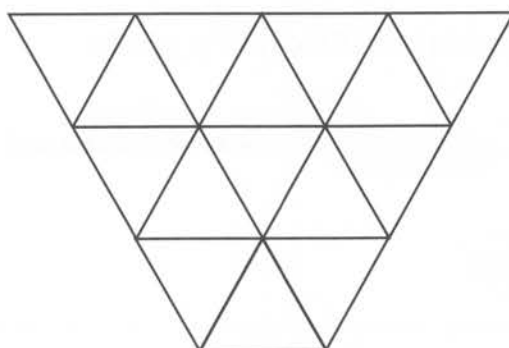
Show
your
working

A large grid for showing working, with a box labeled 'm' for the answer.

2 marks

10

Shade $\frac{2}{3}$ of each of these shapes.



2 marks

11

The cost of hiring a hall for a party can be worked out using this formula.

$$\text{Cost} = \text{£}5.50 \times \text{number of people} + \text{£}50$$

How much would it cost to hire the hall for **20** people?

1 mark

12

Fill in the box to make this calculation correct.

$$\frac{2}{5} + \frac{\boxed{}}{10} = 1\frac{1}{10}$$

1 mark

13

Circle two numbers that add together to give 2.

1.48

0.502

1.598

0.42

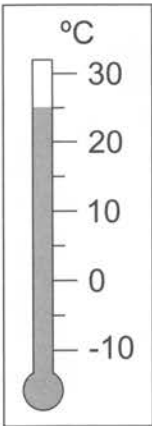
0.402

1 mark

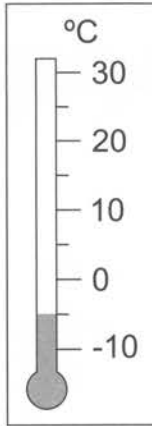
14

Polly measures the temperature in her bedroom, garden and garage one evening in January.

Bedroom



Garden



The temperature in the garage is **halfway** between these two temperatures.

What temperature is the garage?

Show
your
working

°C

2 marks

15

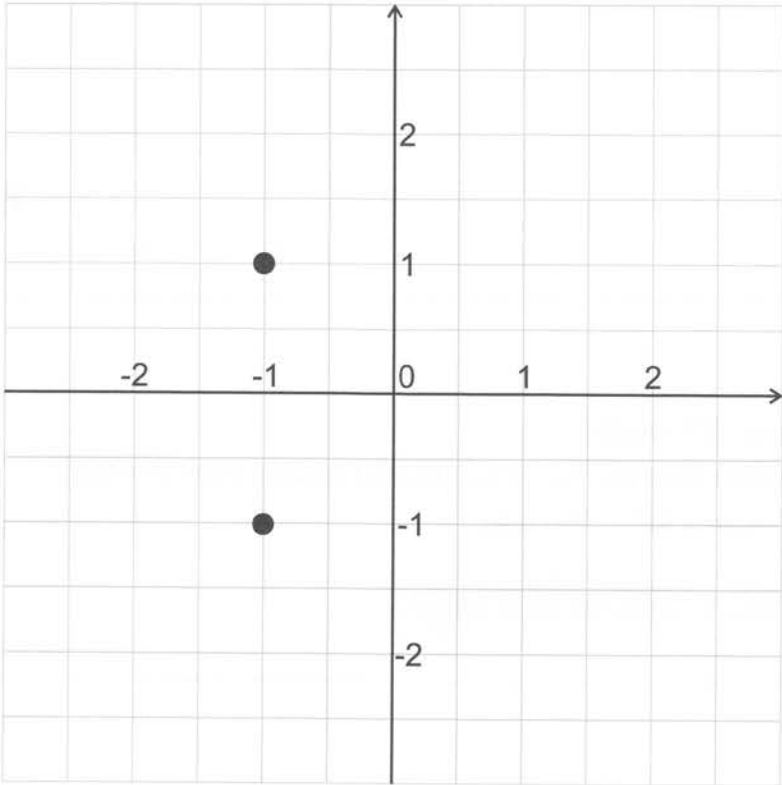
Write one number in each box of the table below.
One has been done for you.

	Multiple of 8	Number ending in 2
Multiple of 6		
Number starting with 3		302

2 marks

16

Two points have been marked on the grid below.



Lizzy adds another point to the grid and joins the points to make an **isosceles** triangle.

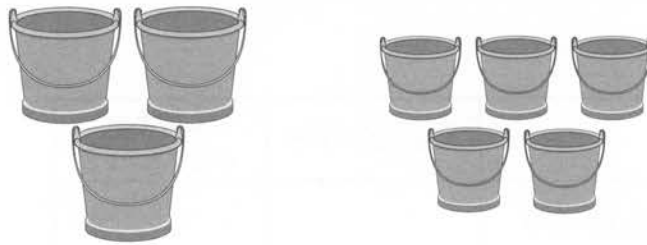
Circle **all** the coordinates that could be the point she added.

(0, 0) (-2, 1) (1, -1) (0, 2) (2, 0) (-1, 2)

2 marks

17


3 large buckets hold the **same** amount of water as 5 small buckets.



It takes **12** large buckets of water to fill a **60 litre** tub.

How much water does one small bucket hold?

Show
your
working



litres

2 marks

18

A bag contains 375 raisins.

16 children each take the same number of raisins from the bag.

There are 7 raisins left in the bag.

How many raisins did each child take?

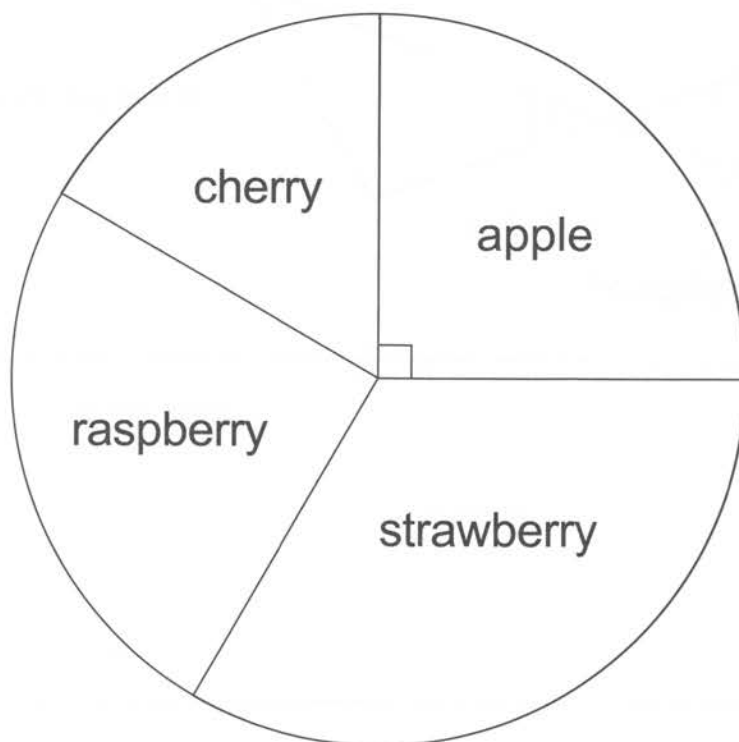
Show
your
working

raisins

2 marks

A bakery sold **300** tarts in January.

The pie chart shows the different flavours of tart that were sold.



How many apple tarts were sold in January?

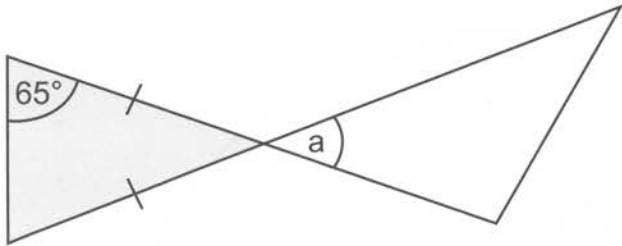
1 mark

What fraction of the tarts sold were cherry?
Use a protractor (angle measurer) to help find your answer.

1 mark

20

Two triangles meet at a vertex.
The grey triangle is **isosceles**.



Not drawn to scale.

What is the size of angle a?

Show
your
working

2 marks

21

Juan is sending out 102 party invitations. He buys a stamp for each invitation.

A pack of six stamps costs £3.30.

Juan pays with three twenty pound notes.

How much change does Juan get?

Show
your
working

3 marks

Key Stage Two Mathematics



Set B Paper 3: Reasoning

Calculator Not Allowed
40 minutes

First name						
Middle name						
Last name						
School						
Date of birth	Day		Month		Year	

Total marks

--

1

Round **3685** to the nearest **ten**.

1 mark

Round **11645** to the nearest **thousand**.

1 mark

2

A school is putting on a play. The play starts at 6.30 pm.

Amy arrives 13 minutes before the start of the play.

What time does Amy arrive? Give your answer using the **24-hour clock**.

1 mark

The play finishes at 9.12 pm.

How long is the play?

hours and

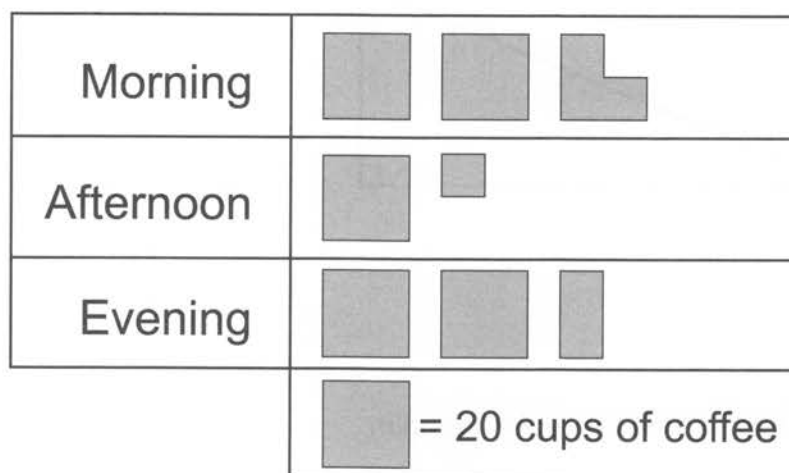
minutes

1 mark

3

Mrs Truman runs a coffee shop.

The pictogram shows how many cups of coffee she makes in a day.



How many cups did she make in **total**?

1 mark

How many **more** cups did she make in the evening than the afternoon?

1 mark

4

Circle the number that represents the value of the **2** in **9 247 683**.

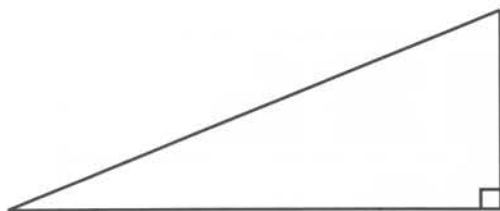
Two hundred Two thousand Twenty thousand

Two hundred thousand Two million

1 mark

5

Use a protractor (angle measurer) to find the size of the **smallest** angle in this triangle.



•

1 mark

Circle the word that describes the triangle.

Isosceles

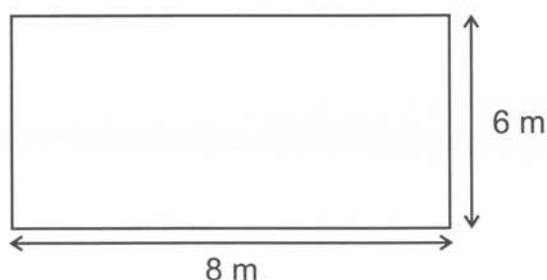
Right-angled

Equilateral

1 mark

6

Here is a floor plan of a room.



Carpet costs £4 per m^2 .

How much would it cost to carpet this room?

Show
your
working

2 marks

7

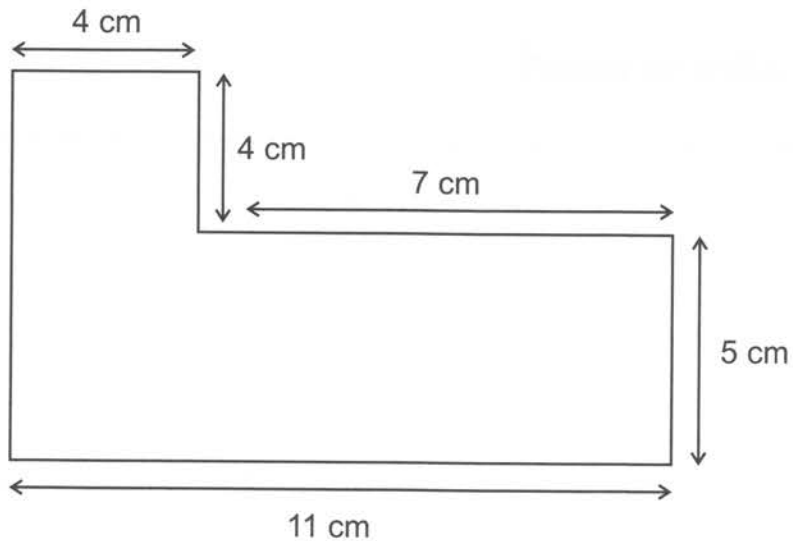
Fill in the gaps to make this multiplication correct.

$$\begin{array}{r}
 \boxed{} 7 2 \\
 \times \boxed{} \\
 \hline
 17 \boxed{} 6
 \end{array}$$

2 marks

8

What is the perimeter of this shape?



cm

1 mark

Write $\frac{101}{1000}$ as a decimal.

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10

A bus ticket costs £2.40 for an adult.
A child's ticket is half price.
6 children and 1 adult buy bus tickets.

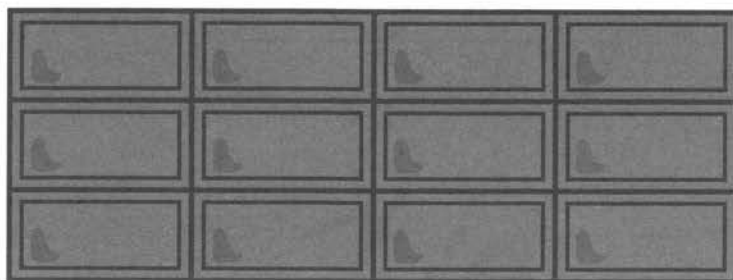
What is the total cost of the tickets?

Show
your
working

A large grid of graph paper, consisting of 20 columns and 10 rows of squares. In the bottom right corner, there is a small rectangular box that is 4 squares wide and 2 squares high. This box is intended for a student to draw a picture related to their writing.

2 marks

11



Alice eats 5 pieces.

What is the weight of the chocolate that is left?

Show
your
working

A large grid of graph paper with a small box in the bottom right corner containing the letter 'g'.

2 marks

12

0.25

$$\frac{1}{3}$$

0.4

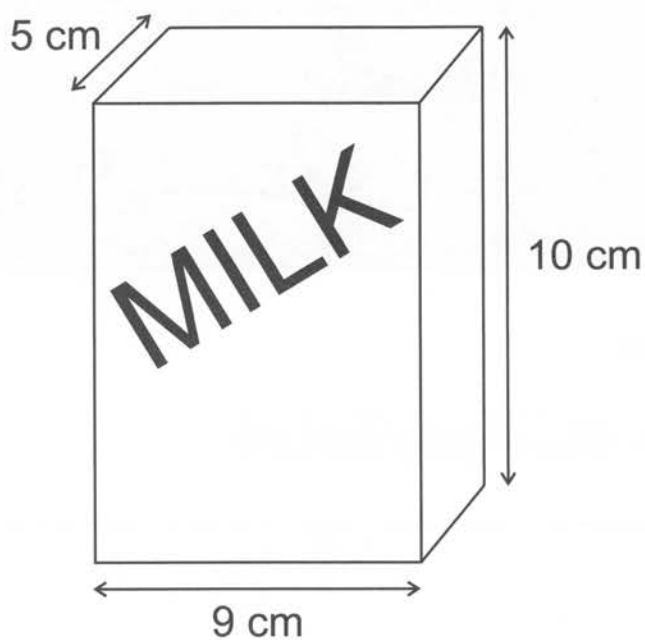
$$\frac{1}{5}$$

0.3

1 mark

13

A carton of milk has the shape of a cuboid.



Billy drinks **150 cm³** of milk each day.

How many days does it take him to drink the whole carton?

Show
your
working

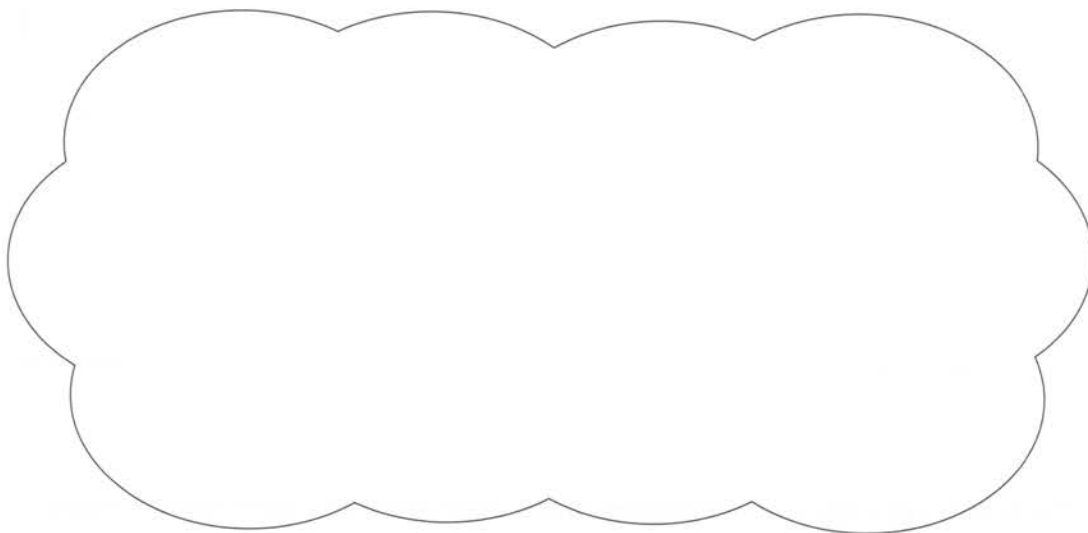
days

2 marks

Here is a multiplication.

$$99 \times 101$$

Explain how you can find the answer to this **without** using a written multiplication method.



1 mark

Write down the answer to the multiplication.



1 mark

15

Mrs Truman has 50 fish in her pond.
 40% of them are green.
 18 of them are red.
 The rest are brown.

What **fraction** of the fish are brown?

Show
your
working

2 marks

16

Jimmy is playing a game. He follows these instructions to work out his score.

1. Roll a dice
2. Multiply the number by 6
3. Subtract 10

Jimmy gets a score of **20**.

What number did he roll?

1 mark

He rolls the dice again and gets a score that is **less than 0**.

What number did he roll?

1 mark

17

What is the largest common factor of 63 and 28?

1 mark

18

Kishan is thinking of **two** numbers. He calls them P and Q.
He says "If you multiply P by 10 and then add 3 you get Q".

Circle the equation that shows how P and Q are linked.

$Q = 3P + 10$

$Q = 10P + 3$

$Q + 3 = 10P$

$P + 3 = 10Q$

$P = 10Q + 3$

1 mark

Write down **two** possible sets of values for P and Q.

$P =$

$Q =$

$P =$

$Q =$

1 mark

- 19 Tom has a bag of compost. He puts 3.6 kg of compost on his flower bed.
He puts 4.75 kg of compost on his vegetable patch.
He still has $\frac{4}{5}$ of the bag of compost left over.

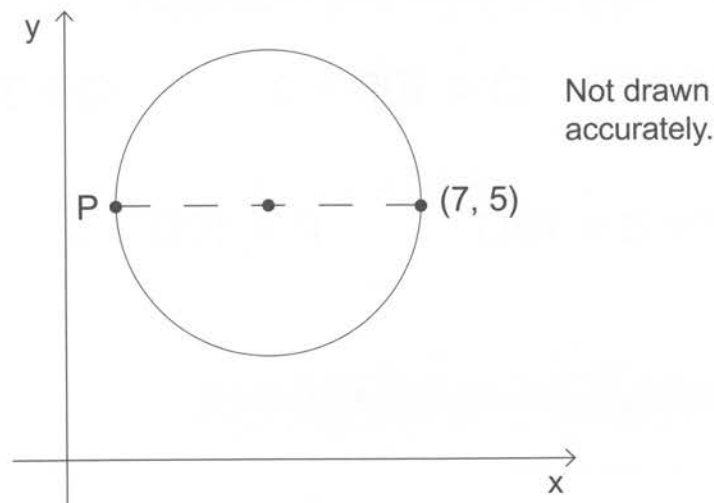
How many kilograms of compost were in the bag to start with?

Show
your
working

	kg
--	----

2 marks

- 20 The **radius** of the circle below is 3.



What is the diameter of the circle?

1 mark

What are the coordinates of point P?

(,)

1 mark



Key Stage Two

Mathematics

SATS Practice Papers

Instructions with Answers & Mark Scheme

Contents

Using the Practice Papers.....	3
Content Domain Coverage	5
Answers.....	7



Practice is the best way to prepare for the KS2 Maths SATs...

...and this brilliant pack from CGP is packed with the most realistic SATs practice you'll find, all fully up to date for the latest tests!

It contains two full sets of Practice Papers, each made up of three tests — just like the real Maths SATs pupils will take in Year 6.

We've also included full answers and mark schemes in this booklet. That means it's easy to find out which topics are their strongest, and what they need to concentrate on ahead of the SATs.

Published by CGP

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Also thanks to Jan Greenway for the copyright research.

Coin images Set A, Paper 3, p.4 © iStock.com

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There are two sets of practice papers in this pack

Each set has:

Paper 1: Arithmetic

30 minute test

no calculators allowed **40 marks**

Paper 2: Reasoning

40 minute test

no calculators allowed **35 marks**

Paper 3: Reasoning

40 minute test

no calculators allowed **35 marks**

Make sure they have these things

For all the papers:

A **pen** and a **pencil**.

A **rubber**.

For papers 2 and 3 only:

A **ruler**.

A **protractor** (angle measurer).

A **mirror**.

Doing the papers

- 1) The most important thing is to **understand** the questions.
Encourage them to read everything really **carefully** so they know exactly what to do.
- 2) Some questions will ask them to show their working.

Show
your
working

The grid is 20 squares wide and 10 squares high. A smaller rectangle, representing the 'final answer box', is located in the bottom right corner of the grid, spanning 5 squares wide and 3 squares high.

They need to do all their **working** on the **grid**, then write the **final answer** in the **box**.
Even if they get the answer **wrong**, they might get marks for trying to do the question in the **right way**.

How to Mark the Papers

Use the answers in this booklet to mark each paper, then write the scores in the table below. For each set, add up the scores for Paper 1, Paper 2 and Paper 3 to get a **mark out of 110**.

	Paper 1 mark out of 40		Paper 2 mark out of 35		Paper 3 mark out of 35		TOTAL mark out of 110
Set A	<div></div>	+	<div></div>	+	<div></div>	=	<div></div>
Set B	<div></div>	+	<div></div>	+	<div></div>	=	<div></div>

The scores for these practice papers will give you a pretty good idea of whether a child is working at the **expected standard** in **Maths**.

The mark needed to achieve the **expected standard** varies from year to year, but if they get **60** or more **out of 110** then they should be on track.

Content Domain Coverage

The mark schemes in this Answer Book refer to the content domain references as they appear in the Standards & Testing Agency’s ‘Mathematics test framework’ document.

Qu.	Requirement	Guidance	Marks (Domain)
1	13 400, 14 499, 95 782, 134 500, 195 287		1 (5N2)

These refer to elements of the National Curriculum Programme of Study, which is split by Year.

For example, ‘5N2’ refers to Year 5, substrand N2 (‘read, write, order and compare numbers’).

You will see in the mark scheme that some substrands are divided further. For example, ‘N3a’ refers to ‘place value’, while ‘N3b’ refers to ‘roman numerals’.

For a detailed breakdown on the content of each year’s substrands, please visit the ‘Mathematics test framework’ document on the STA website.

Content Domain Coverage

This table sets out the areas of the content domain that are assessed in these papers.

Topic	Sub-strand	Ref	Set A			Set B		
			Paper 1	Paper 2	Paper 3	Paper 1	Paper 2	Paper 3
Number and place value	counting (in multiples)	N1					Q1	
	read, write, order and compare numbers	N2	Q1	Q4				
	place value; roman numerals	N3			Q14			Q4
	identify, represent and estimate; rounding	N4						Q1
	negative numbers	N5		Q5			Q14	
	number problems	N6						
Addition, subtraction, multiplication and division (calculations)	add / subtract mentally	C1	Q3					
	add / subtract using written methods	C2	Q7, 10, 16, 20	Q6		Q3, 4, 8, 10, 16, 21		
	estimate, use inverses and check	C3			Q13			
	add / subtract to solve problems	C4						
	properties of number (multiples, factors, primes, squares and cubes)	C5		Q9	Q9, 14		Q3, 15	Q17
	multiply / divide mentally	C6	Q4, 5, 6, 9, 11, 21			Q1, 2, 5, 7, 9, 12, 15, 22		Q9, 14
	multiply / divide using written methods	C7	Q2, 8, 12, 13, 17, 23, 25, 27, 30, 33			Q11, 13, 24, 27, 32, 33	Q9	Q7
	solve problems (commutative, associative, distributive and all four operations)	C8		Q2, 10, 15, 20			Q4, 18, 21	Q6, 10, 14, 16
	order of operations	C9	Q22, 36		Q20	Q20, 36		
Fractions, decimals and percentages	recognise, find, write, name and count fractions	F1						
	equivalent fractions	F2		Q17			Q10, 12	
	comparing and ordering fractions	F3						
	add / subtract fractions	F4	Q18, 28, 35	Q17		Q19, 25, 31, 34	Q12	
	multiply / divide fractions	F5	Q32, 34		Q18	Q26, 28, 35		
	fractions / decimals equivalence	F6			Q2			Q9
	rounding decimals	F7						
	compare and order decimals	F8	Q14, 15, 19, 29	Q7		Q6, 14, 18, 23	Q5, 13	
	multiply / divide decimals	F9	Q24			Q29		
	solve problems with fractions and decimals	F10			Q12, 15			Q19
	fractions / decimal / percentage equivalence	F11						Q12, 15
	solve problems with percentages	F12						

Content Domain Coverage

Topic	Sub-strand	Ref	Set A			Set B		
			Paper 1	Paper 2	Paper 3	Paper 1	Paper 2	Paper 3
Ratio and proportion	relative sizes, similarity	R1		Q13	Q19			Q11
	use of percentages for comparison	R2	Q26, 31			Q17, 30		Q15
	scale factors	R3						
	unequal sharing and grouping	R4			Q17		Q17	
Algebra	missing number problems expressed in algebra	A1						
	simple formulae expressed in words	A2		Q11	Q11		Q11	Q18
	generate and describe linear number sequences	A3			Q6			
	number sentences involving two unknowns	A4						Q18
	enumerate all possibilities of combinations of two variables	A5						
Measurement	compare, describe and order measures	M1						
	estimate, measure and read scales	M2		Q3				
	money	M3						
	telling time, ordering time, duration and units of time	M4			Q4		Q6	Q2
	convert between metric units	M5			Q17		Q9	
	convert metric / imperial	M6		Q19				
	perimeter, area	M7		Q14, 16			Q7	Q6, 8
	volume	M8						Q13
	solve problems (a, money; b, length; c, mass / weight; d, capacity / volume)	M9		Q13	Q5		Q8, 21	Q10, 13
Geometry — properties of shapes	recognise and name common shapes	G1						
	describe properties and classify shapes	G2		Q1, 8				Q5
	draw and make shapes and relate 2-D to 3-D shapes (including nets)	G3			Q3			
	angles – measuring and properties	G4		Q18	Q7, 16		Q20	Q5
	circles	G5						Q20
Geometry — position and direction	patterns	P1						
	describe position, direction and movement	P2			Q10			
	co-ordinates	P3		Q8			Q16	Q20
Statistics	interpret and represent data	S1			Q8		Q2, 19	
	solve problems involving data	S2			Q1		Q2	Q3
	mean average	S3		Q12				

Set A — Answers

Set A Paper 1

Qu.	Requirement	Guidance	Marks (Domain)
1	4941		1 (3N2b)
2	148		1 (3C7)
3	364		1 (3C1)
4	11		1 (3C6)
5	730		1 (4C6b)
6	240		1 (4C6b)
7	$\begin{array}{r} 7\ 6\ 9\ 8\ 5 \\ +\ 5\ 2\ 3\ 6 \\ \hline 8\ 2\ 2\ 2\ 1 \\ 1\ 1\ 1\ 1\ 1 \end{array}$		1 (5C2)
8	225		1 (3C7)
9	1600		1 (5C6a)
10	795		1 (3C2)
11	86 600		1 (5C6b)
12	$\begin{array}{r} 5\ 4\ 6 \\ \times\ 4 \\ \hline 2\ 1\ 8\ 4 \\ 1\ 2 \end{array}$		1 (4C7)
13	657		1 (4C7)
14	$\begin{array}{r} 7.6\ 5 \\ -\ 6.5\ 4 \\ \hline 1.1\ 1 \end{array}$		1 (4F8)
15	$\begin{array}{r} 1\ 3.7\ 7\ 7 \\ +\ 9.4\ 6\ 0 \\ \hline 2\ 3.2\ 3\ 7 \\ 1\ 1\ 1 \end{array}$		1 (5F8)
16	76 293		1 (5C2)
17	$\begin{array}{r} 7\ 8\ 2 \\ 7\overline{)5\ 4\ 5\ 7\ 1\ 4} \end{array}$		1 (5C7b)
18	$\frac{2}{7} + \frac{4}{7} = \frac{2+4}{7} = \frac{6}{7}$		1 (3F4)
19	$\begin{array}{r} 4\ 8\ 1\ 4\ 9\ 0 \\ -\ 5\ 7\ 2 \\ \hline 4\ 9.2\ 8 \end{array}$		1 (5F8)
20	$\begin{array}{r} 4\ 8\ 1\ 6\ 8\ 9\ 8\ 8 \\ -\ 7\ 0\ 9\ 1\ 9 \\ \hline 4\ 9\ 8\ 9\ 7\ 9 \end{array}$		1 (5C2)
21	0.0015		1 (5C6b)
22	$2^3 + 2 = 8 + 2 = 10$		1 (6C9)
23	$\begin{array}{r} 2\ 1\ 0 \\ 11\overline{)12\ 3\ 1\ 0} \end{array}$		1 (6C7b)
24	$10 \times 7.4 = 74$, $2 \times 7.4 = 14.8$ So, $12 \times 7.4 = 74 + 14.8 = 88.8$		1 (6F9b)

Qu.	Requirement	Guidance	Marks (Domain)
25	$\begin{array}{r} 6\ 6\ 4 \\ \times\ 3\ 4 \\ \hline 2\ 6\ 5\ 6 \\ 1\ 9\ 9\ 2\ 0 \\ \hline 2\ 2\ 5\ 7\ 6 \\ 1\ 1 \end{array}$	2 marks for the correct answer, otherwise 1 mark for the correct method with no more than one error. Award no marks if the error is the placing of digits in incorrect columns.	2 (5C7a)
26	10% of 2400 = $2400 \div 10 = 240$ 20% of 2400 = $240 \times 2 = 480$		1 (6R2)
27	$\begin{array}{r} 2\ 5 \\ 39\overline{)9\ 7\ 5} \\ -\ 7\ 8 \\ \hline 1\ 9\ 5 \\ -\ 1\ 9\ 5 \\ \hline 0 \end{array}$	2 marks for the correct answer, otherwise 1 mark for the correct method with no more than one error.	2 (6C7b)
28	$\frac{5}{6} + 1\frac{1}{12} = \frac{10}{12} + \frac{13}{12}$ $= \frac{10+13}{12} = \frac{23}{12} \text{ or } 1\frac{11}{12}$		1 (6F4)
29	$\begin{array}{r} 1\ 5\ 6\ 1\ 2\ 1\ 5\ 3 \\ -\ 7\ 3\ 6\ 0 \\ \hline 8\ 8\ 9\ 3 \end{array}$		1 (5F8)
30	$\begin{array}{r} 4\ 9\ 2\ 2 \\ \times\ 7\ 7 \\ \hline 3\ 4\ 4\ 5\ 4 \\ 3\ 4\ 4\ 5\ 4\ 0 \\ \hline 3\ 7\ 8\ 9\ 9\ 4 \end{array}$	2 marks for the correct answer, otherwise 1 mark for the correct method with no more than one error. Award no marks if the error is the placing of digits in incorrect columns.	2 (5C7a)
31	10% of 350 = $350 \div 10 = 35$ 20% of 350 = $35 \times 2 = 70$ 1% of 350 = $35 \div 10 = 3.5$ 2% of 350 = $3.5 \times 2 = 7$ So, 22% of 350 = $70 + 7 = 77$		1 (6R2)
32	$\frac{1}{2} \times \frac{2}{3} = \frac{1 \times 2}{2 \times 3} = \frac{2}{6} \text{ or } \frac{1}{3}$		1 (6F5a)
33	$\begin{array}{r} 1\ 5\ 3 \\ 45\overline{)6\ 8\ 8\ 5} \\ -\ 4\ 5 \\ \hline 2\ 3\ 8 \\ -\ 2\ 2\ 5 \\ \hline 1\ 3\ 5 \\ -\ 1\ 3\ 5 \\ \hline 0 \end{array}$	2 marks for the correct answer, otherwise 1 mark for the correct method with no more than one error.	2 (6C7b)
34	$\frac{7}{10} \div 9 = \frac{7}{10 \times 9} = \frac{7}{90}$		1 (6F5b)
35	$\frac{1}{4} + \frac{4}{5} = \frac{5}{20} + \frac{16}{20} = \frac{5+16}{20}$ $= \frac{21}{20} \text{ or } 1\frac{1}{20}$		1 (6F4)
36	$44 + 72 \div 12 = 44 + 6 = 50$		1 (6C9)

Set A — Answers

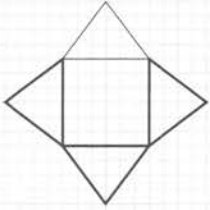
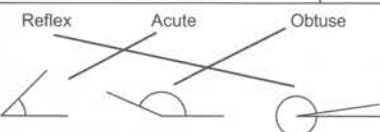
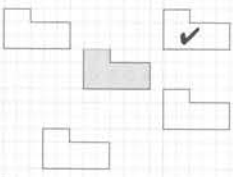
Set A Paper 2

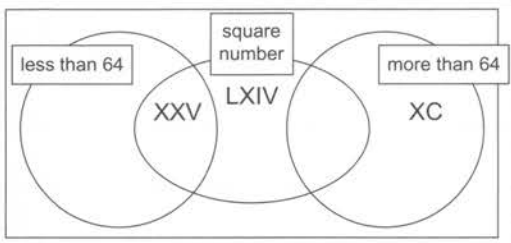
Qu.	Requirement	Guidance	Marks (Domain)
1a			1 (4G2b)
1b			1 (4G2c)
2	He bought $6 \times 22 = 132$ slices of bread. So, he has $132 - 120 = 12$ slices of bread left over.	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (4C8)
3a	$27 \text{ ml} - 12 \text{ ml} = 15 \text{ ml}$		1 (3M2c)
3b			1 (3M2c)
4	March, June, April, May		1 (6N2)
5a	Tom		1 (5N5/6N5)
5b	4		1 (5N5/6N5)
6	$\begin{array}{r} 529 \\ - 374 \\ \hline 155 \end{array}$ <p>In the standard format, the subtraction would be written as: $\begin{array}{r} 529 \\ - 374 \\ \hline 155 \end{array}$</p>	2 marks for all three digits correct, otherwise 1 mark for two digits correct.	2 (4C2)
7a	5.22		1 (5F8)
7b	$5.525 - 5.22 = 0.305$		1 (5F8)
8	The shape is a pentagon . It is irregular .	1 mark for 'pentagon', 1 mark for 'irregular'.	2 (4P3b/5G2b)
9a	7		1 (5C5a)
9b	121		1 (5C5a)
10	<p>The total number of custard pies needed is $17 \times 5 = 85$. Each pie needs 35 ml of cream:</p> $\begin{array}{r} 85 \\ \times 35 \\ \hline 425 \\ 2550 \\ \hline 2975 \end{array}$ <p>So, that's 2975 ml of cream.</p>	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (5C8a)

Qu.	Requirement	Guidance	Marks (Domain)
11	$\triangle + \star = 40$, so $\star + \triangle = 40$ This means $\square + \square + 40 = 72$, so $\square + \square = 72 - 40 = 32$. So, $\square = 32 \div 2 = 16$.	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (6A2)
12	$(15 + 12 + 24 + 9) \div 4 = 15 \text{ kg}$		1 (6S3)
13	8 mangoes cost $\pounds 1.25 \times 8 = \pounds 10$ One pineapple costs $\pounds 10 \div 5 = \pounds 2$.	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (6R1/5M9a)
14	The height of the rectangle is $96 \div 12 = 8$. So, the area of the triangle is $\frac{1}{2} \times 10 \times 8 = 40 \text{ cm}^2$.	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (6M7b)
15	$2.5 \times 4 = 10$, so $2.5 \times 40 = 100$		1 (6C8)
16	The end of the pool is an equilateral triangle, so all of its sides are the same length. This means the vertical height of the rectangular part of the pool is 12.7 m. So, the perimeter of the pool is $25.4 + 25.4 + 12.7 + 12.7 + 12.7 = 50.8 + 38.1 = 88.9 \text{ m}$.	2 marks for the correct answer, otherwise 1 mark for correctly identifying the length of each side of the shape.	2 (5M7a)
17	$\left(\frac{6}{7}\right)^{\frac{5}{7}} \frac{11}{7} \left(\frac{4}{7}\right)^{\frac{1}{7}} \frac{1}{7} \frac{2}{7}$		1 (5F2a/6F4)
18	E.g. A parallelogram has two pairs of equal angles. So if A is 130° and B is 70° then the angles inside the parallelogram would add up to 400° . This is impossible, as the angles in a quadrilateral add up to 360° . So Mina must be wrong.		1 (6G4a)
19	$8 \text{ km} \approx 5 \text{ miles}$ $96 \div 8 \times 5 = 12 \times 5 = 60 \text{ miles}$		1 (6M6)
20	$\begin{array}{r} 255 \\ \times 6 \\ \hline 1530 \end{array}$ <p>So, the books weigh 1530 g. 20 pens is $20 \div 5 = 4$ sets. This weighs $4 \times 30 \text{ g} = 120 \text{ g}$. So there's $1530 \text{ g} + 120 \text{ g} = 1650 \text{ g}$ in the parcel so far. $2 \text{ kg} = 2000 \text{ g}$, so the rubbers can weigh up to $2000 \text{ g} - 1650 \text{ g} = 350 \text{ g}$. $350 \div 20 = 17 \text{ remainder } 10$, so Aziza can send 17 rubbers.</p>	3 marks for the correct answer. Otherwise, 2 marks for finding 1650 g, or for a correct method with no more than one error. 1 mark for a correct method with more than one error.	3 (6C8)

Set A — Answers

Set A Paper 3

Qu.	Requirement	Guidance	Marks (Domain)
1a	$\begin{array}{r} 9\ 5\ 6\ 2 \\ +\ 8\ 7\ 2\ 1 \\ \hline 1\ 8\ 2\ 8\ 3 \end{array}$		1 (4S2)
1b	$\begin{array}{r} 8\ 9\ 1\ 4\ 1\ 5\ 1\ 2 \\ -\ 7\ 8\ 8\ 8 \\ \hline 1\ 6\ 7\ 4 \end{array}$		1 (4S2)
2	0.83		1 (4F6b)
3			1 (6G3b)
4a	$60 \times 8 = 480$ seconds		1 (3M4e)
4b	$24 \times 3 = 72$ hours		1 (3M4e)
5	Tom has £3.75, Aziza has £2.15. Together they have £5.90, so they need another £4.10 .	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (5M9a)
6	27, 46, 65, 84 , 103 (The rule for the sequence is 'add 19'.)		1 (6A3)
7	 2 marks for all three angles matched correctly, otherwise 1 mark for one angle matched correctly.		2 (4G4)
8a	19 minutes		1 (5S1)
8b	14:05		1 (5S1)
9	The only even prime is 2. So the number is $2 \times 3 \times 5 = 30$.		1 (5CSb)
10			1 (5P2)
11a	$a = 2 \times b = 2 \times 44 = 88$		1 (6A2)
11b	$5c = 75 - 50 = 25$ So $c = 25 \div 5 = 5$		1 (6A2)
12	$4 \times 250 = 1000$ ml $\frac{2}{5} \times 1000 = \frac{2 \times 1000}{5}$ $= \frac{2000}{5} = 400$ ml	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (4F10a)

Qu.	Requirement	Guidance	Marks (Domain)
13a	$6 \times 50\ 000 = 300\ 000$		1 (6C3)
13b	You would expect the estimate to be more than the actual answer as you have rounded both the numbers up.		1 (6C3)
14	 2 marks for all three Roman numerals in the correct positions, otherwise 1 mark for two numerals in the correct positions.		2 (5C5d/ 4N3b)
15	height of drawers $= 2 \times \text{height of desk}$ $= 2 \times 0.7\text{ m} = 1.4\text{ m}$ height of wardrobe $= \text{height of drawers} + 0.5\text{ m}$ $= 1.4\text{ m} + 0.5\text{ m} = 1.9\text{ m}$	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (5F10)
16	The angles inside a triangle add up to 180° , so the missing angle inside the triangle is $180^\circ - (75^\circ + 50^\circ)$ $= 180^\circ - 125^\circ = 55^\circ$. Angle a and this angle make a straight line, so $a = 180^\circ - 55^\circ = 125^\circ$.	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (6G4a/ 6G4b)
17	$4\text{ kg} = 4000\text{ g}$ $4000 \div 80 = 40 \div 8 = 50$, so 4000 g of ice cream needs $25 \times 50 = 125 \times 10$ $= 1250\text{ ml}$ of syrup. $1250\text{ ml} = 1.25\text{ litres}$	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (6M5/ 6R4)
18a	$\frac{5}{6} \div 3 = \frac{5}{18}$		1 (6F5a/ 6F5b)
18b	$\frac{2}{3} \times \frac{6}{7} = \frac{4}{7}$		1 (6F5a/ 6F5b)
19	Kishan has $1 - \frac{5}{7} = \frac{2}{7}$ of the swim still to do. $\frac{2}{7}$ of the swim $= 100\text{ m}$, so $\frac{1}{7}$ is 50 m . So the sponsored swim is $7 \times 50\text{ m} = 350\text{ m}$ long.	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (6R1)
20	$5 \times (7 - 3) + 4 = 24$ $(6 - 3) \times (4 + 8) = 36$	1 mark for each correct calculation.	2 (6C9)

Set B — Answers

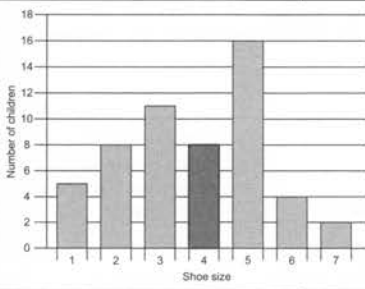
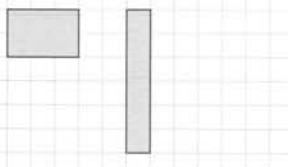
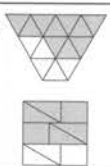
Set B Paper 1

[illegible]

Qu.	Requirement	Guidance	Marks (Domain)
24	$\begin{array}{r} 59 \\ \times 52 \\ \hline 118 \\ 2950 \\ \hline 3068 \end{array}$	2 marks for the correct answer, otherwise 1 mark for the correct method with no more than one error. Award no marks if the error is the placing of digits in incorrect columns.	2 (5C7a)
25	$1\frac{2}{3} + \frac{2}{3} = \frac{5}{3} + \frac{2}{3} = \frac{5+2}{3} = \frac{7}{3}$ or $2\frac{1}{3}$		1 (6F4)
26	$\frac{1}{6} \times \frac{1}{7} = \frac{1}{6 \times 7} = \frac{1}{42}$		1 (6F5a)
27	$\begin{array}{r} 35 \\ 17 \overline{) 595} \\ \underline{-51} \\ 85 \\ \underline{-85} \\ 0 \end{array}$	2 marks for the correct answer, otherwise 1 mark for a correct method with no more than one error.	2 (6C7b)
28	$15 \times \frac{3}{5} = \frac{15 \times 3}{5} = \frac{45}{5} = 9$		1 (5F5)
29	$10 \times 5.6 = 56$ $3 \times 5.6 = 16.8$ So, $13 \times 5.6 = 56 + 16.8 = 72.8$		1 (6F9b)
30	$10\% \text{ of } 80 = 80 \div 10 = 8$ $80\% \text{ of } 80 = 8 \times 8 = 64$ $5\% \text{ of } 80 = 8 \div 2 = 4$ So, $85\% \text{ of } 80 = 64 + 4 = 68$		1 (6R2)
31	$\frac{13}{14} + \frac{1}{28} = \frac{26}{28} + \frac{1}{28} = \frac{26+1}{28} = \frac{27}{28}$		1 (5F4)
32	$\begin{array}{r} 3784 \\ \times 26 \\ \hline 22704 \\ + 75680 \\ \hline 98384 \end{array}$	2 marks for the correct answer, otherwise 1 mark for the correct method with no more than one error. Award no marks if the error is the placing of digits in incorrect columns.	2 (6C7a)
33	$\begin{array}{r} 73 \\ 37 \overline{) 2701} \\ \underline{-259} \\ 111 \\ \underline{-111} \\ 0 \end{array}$	2 marks for the correct answer, otherwise 1 mark for a correct method with no more than one error.	2 (6C7b)
34	$1\frac{2}{3} - \frac{3}{4} = \frac{5}{3} - \frac{3}{4} = \frac{20}{12} - \frac{9}{12} = \frac{11}{12}$		1 (6F4)
35	$\frac{4}{5} \div 5 = \frac{4}{5 \times 5} = \frac{4}{25}$		1 (6F5b)
36	$(10 - 2) + 14 \times 2 = 8 + 14 \times 2$ $= 8 + 28 = 36$		1 (6C9)

Set B — Answers

Set B Paper 2

Qu.	Requirement	Guidance	Marks (Domain)
1	45 294, 35 294, 25 294, 15 294, 5294		1 (5N1)
2a			1 (3S1)
2b	$5 + 8 + 11 = \mathbf{24}$ children		1 (3S2)
3	19 and 5 , or 17 and 7 , or 13 and 11		1 (5C5c)
4a	$\begin{array}{r} 3\ 1\ 7\ 6\ 5 \\ +\ 1\ 8\ 9\ 9\ 9 \\ \hline \pounds\ 5\ 0\ 7\ 6\ 4 \\ \begin{smallmatrix} 1 & 1 & 1 & 1 & 1 \end{smallmatrix} \end{array}$		1 (5C8b)
4b	$\begin{array}{r} \overset{2}{9}\ \overset{10}{8}\ \overset{16}{8}\ \overset{15}{6}\ \overset{15}{5} \\ -\ 1\ 8\ 9\ 9\ 9 \\ \hline \pounds\ 1\ 2\ 7\ 6\ 6 \end{array}$		1 (5C8b)
5	0.783, 0.82, 0.824, 1.02, 1.1		1 (5F8)
6	The analogue clock shows 4.05 pm. The digital clock shows 15:57 = 3.57 pm. So the digital clock is 8 minutes slow.		1 (4M4b)
7	E.g. 		1 (5M7b/ 6M7a)
8	Two trumpets are $192 \div 2 = 96$ cm long. So, the clarinet is $155 - 96 = \mathbf{59}$ cm.	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (5M9b)
9	$6.3\text{ km} = 6.3 \times 1000 = 6300\text{ m}$ $63 \div 7 = 9$, so $6300 \div 7$ $= 9 \times 100 = 900$ So Juan walks 900 m each day.	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (5M5/ 5C7b)
10	E.g. 		2 (3F2)
11	Cost = $\pounds 5.50 \times 20 + \pounds 50$ $\pounds 5.50 \times 20 = \pounds 5.50 \times 10 \times 2$ $= \pounds 55 \times 2 = \pounds 110$ $\pounds 110 + \pounds 50 = \mathbf{\pounds 160}$		1 (6A2)
12	$\frac{2}{5} = \frac{4}{10}$ and $1\frac{1}{10} = \frac{11}{10}$ So $1\frac{1}{10} - \frac{2}{5} = \frac{11}{10} - \frac{4}{10} = \frac{7}{10}$ So $\frac{2}{5} + \frac{7}{10} = 1\frac{1}{10}$		1 (5F2a/ 5F4)

Qu.	Requirement	Guidance	Marks (Domain)									
13	1.598 and 0.402		1 (5F8)									
14	The temperature in the bedroom is 25 °C. The temperature in the garden is -5 °C. You add 5 °C to go from -5 °C to 0 °C, and then add 25 °C to get to 25 °C. So the difference between the two temperatures is 5 °C + 25 °C = 30 °C. 30 °C ÷ 2 = 15 °C, so halfway between the temperatures is 15 °C below 25 °C. So the temperature in the garage is 25 °C – 15 °C = 10 °C .	2 marks for the correct answer, otherwise 1 mark for reading both thermometers correctly, or for a correct method.	2 (6N5)									
15	<table border="1"><tr><td></td><td>Multiple of 8</td><td>Number ending in 2</td></tr><tr><td>Multiple of 6</td><td>Any common multiple of 6 and 8, e.g. 48</td><td>Any multiple of 6 ending in 2, e.g. 12</td></tr><tr><td>Number starting with 3</td><td>Any multiple of 8 starting with 3, e.g. 32</td><td>302</td></tr></table> 2 marks for the correct answers in all three boxes, otherwise 1 mark for correct answers in two boxes.		Multiple of 8	Number ending in 2	Multiple of 6	Any common multiple of 6 and 8, e.g. 48	Any multiple of 6 ending in 2, e.g. 12	Number starting with 3	Any multiple of 8 starting with 3, e.g. 32	302		2 (5C5a)
	Multiple of 8	Number ending in 2										
Multiple of 6	Any common multiple of 6 and 8, e.g. 48	Any multiple of 6 ending in 2, e.g. 12										
Number starting with 3	Any multiple of 8 starting with 3, e.g. 32	302										
16	(0, 0), (1, -1) and (2, 0)	2 marks for all three correct coordinates, otherwise 1 mark for two correct coordinates.	2 (6P3)									
17	12 large buckets fill a 60 litre tub, so 3 large buckets contain 60 ÷ 4 = 15 litres of water. This means that 5 small buckets contain 15 litres of water, so one small bucket holds 15 ÷ 5 = 3 litres .	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (6R4)									
18	$\begin{array}{r} 375 - 7 = 368 \\ \begin{array}{r} 2\ 3 \\ 1\ 6\ 3\ \overline{) 3\ 6\ 8} \\ -\ 3\ 2 \\ \hline 4\ 8 \\ -\ 4\ 8 \\ \hline 0 \end{array} \end{array}$ So, each child takes 23 raisins.	2 marks for the correct answer, otherwise 1 mark for a long division with no more than one error.	2 (6C8)									
19a	The apple sector is $\frac{1}{4}$ of the pie chart. $\frac{1}{2}$ of 300 = 150, so $\frac{1}{4}$ of 300 = 150 ÷ 2 = 75		1 (6S1)									
19b	The cherry segment is 60°. So the fraction that were cherry tarts is $\frac{60}{360} = \frac{6}{36} = \frac{1}{6}$.		1 (6S1)									
20	The grey triangle is isosceles, so the other base angle is 65°, and the third angle in the triangle is 180° – 65° – 65° = 50°. Angle a is vertically opposite this angle, so a = 50° .	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (6C4a/ 6C4b)									

Set B — Answers

Qu.	Requirement	Guidance	Marks (Domain)
21	$\begin{array}{r} 17 \\ 6 \overline{) 1104} \\ \underline{6} \\ 50 \\ \underline{48} \\ 24 \\ \underline{24} \\ 0 \end{array}$ <p>So, Juan needs 17 packs of stamps. To find 3.30×17, work out 33×17, then divide by 10.</p> $\begin{array}{r} 33 \\ \times 17 \\ \hline 231 \\ 330 \\ \hline 561 \end{array}$ <p>$561 \div 10 = 56.1$, so $\text{£}3.30 \times 17 = \text{£}56.10$. So, Juan gets $3 \times \text{£}20 - \text{£}56.10 = \text{£}3.90$ change.</p>	3 marks for the correct answer. Otherwise, 2 marks for a correct method with no more than one error. 1 mark for a correct method with more than one error.	3 (5M9a/ 5C8a)

Set B Paper 3

Qu.	Requirement	Guidance	Marks (Domain)
1a	3690		1 (4N4b)
1b	12 000		1 (4N4b)
2a	6:30 pm = 18:30 13 minutes before 18:30 = 18:17 .		1 (3M4f/ 4M4b)
2b	Two hours on from 6.30 pm is 8.30 pm. 9.12 pm is 30 + 10 + 2 minutes = 42 minutes on from 8.30 pm, so the play is 2 hours and 42 minutes long.		1 (3M4f/ 4M4b)
3a	Morning: $20 + 20 + \frac{3}{4} \times 20 = 20 + 20 + 15 = 55$ cups Afternoon: $20 + \frac{1}{4} \times 20 = 20 + 5 = 25$ cups Evening: $20 + 20 + \frac{1}{2} \times 20 = 20 + 20 + 10 = 50$ cups So total = $55 + 25 + 50 = \textbf{130}$.		1 (4S2)
3b	$50 - 25 = \textbf{25}$		1 (4S2)
4	Two hundred thousand		1 (6N3)
5a	22° (accept any angle between 20° and 24°).		1 (5G4c)
5b	Right-angled		1 (4G2a)
6	The area of the room is $6 \times 8 = 48 \text{ m}^2$. $\begin{array}{r} 48 \\ \times 4 \\ \hline 192 \end{array}$ So, the carpet will cost £192 .	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (5M7b/ 4C8)
7	$\begin{array}{r} 572 \\ \times 3 \\ \hline 1716 \end{array}$	2 marks for all three digits correct, otherwise 1 mark for 2 digits correct.	2 (4C7)

Qu.	Requirement	Guidance	Marks (Domain)
8	The left-hand vertical side of the shape is $5 + 4 = 9 \text{ cm}$ long. So, the perimeter is $4 + 4 + 7 + 5 + 11 + 9 = \textbf{40 cm}$.		1 (5M7a)
9	$101 \div 1000 = \textbf{0.101}$		1 (5C6b/ 6F6)
10	Half of $\text{£}2.40$ is $\text{£}1.20$. $6 \times \text{£}1.20 = \text{£}7.20$ So the total price is $\text{£}7.20 + \text{£}2.40 = \textbf{£9.60}$.	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (5M9a/ 5C8a)
11	Each piece of chocolate weighs $72 \text{ g} \div 12 = 6 \text{ g}$. $5 \times 6 \text{ g} = 30 \text{ g}$, so there is $72 \text{ g} - 30 \text{ g} = \textbf{42 g}$ remaining.	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (6R1)
12	$\frac{1}{5} = 0.2$, and $0.2 + 0.3 = 0.5$. So $\frac{1}{5}$ and 0.3 should be circled.		1 (6F11)
13	Volume of carton = $5 \times 9 \times 10 = 450 \text{ cm}^3$. $450 \div 150 = 45 \div 15 = 3$, so it takes Billy 3 days to drink the carton.	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (6M8a/ 5M9c)
14a	E.g. 99×101 is the same as $99 \times 100 + 99$.		1 (6C8)
14b	9999		1 (6C8)
15	10% of 50 = 5, so 40% of 50 = $5 \times 4 = 20$. So, there are $50 - 20 - 18 = 12$ brown fish. So $\frac{12}{50}$ (or $\frac{6}{25}$) of the fish are brown.	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (6R2/ 6F11)
16a	$20 + 10 = 30$ $30 \div 6 = \textbf{5}$		1 (5C8b)
16b	$1 \times 6 - 10 = 6 - 10 = -4$, so he rolled a 1 .		1 (5C8b)
17	7		1 (6C5)
18a	$Q = 10P + 3$		1 (6A2)
18b	E.g. $P = 1$, $Q = 13$ $P = 2$, $Q = 23$		1 (6A4)
19	$\begin{array}{r} 3.60 \\ + 4.75 \\ \hline 8.35 \end{array}$ <p>$\frac{4}{5}$ of the bag is left, so $\frac{1}{5}$ of the bag of compost is 8.35 kg. $\begin{array}{r} 8.35 \\ \times 5 \\ \hline 41.75 \end{array}$ So there were 41.75 kg of compost in the bag to start with.</p>	2 marks for the correct answer, otherwise 1 mark for a correct method.	2 (5F10)
20a	Diameter = $3 \times 2 = \textbf{6}$		1 (6C5)
20b	The horizontal line between P and (7, 5) goes through the centre of the circle, so it is a diameter. So, the x coordinate of P is $7 - 6 = 1$. The y coordinate is the same as for the point (7, 5). So, P = (1, 5) .		1 (6P3)



Key Stage Two

Mathematics

SATS Practice Papers

Pupil-friendly Answers

- Perfect for Key Stage Two pupils
- Can be used to mark their own work
- Or swap with a partner and mark each other's

Set A Paper 1: Arithmetic

Ask your teacher if you're not sure how many marks to give.

1. **4941**

2. **148**

3. **364**

4. **11**

5. **730**

6. **240**

7.
$$\begin{array}{r} 7\ 6\ 9\ 8\ 5 \\ +\ 5\ 2\ 3\ 6 \\ \hline 8\ 2\ 2\ 2\ 1 \\ \text{1 1 1 1} \end{array}$$

8. **225**

9. **1600**

10. **795**

11. **86 600**

12. Method 1:

$$\begin{array}{r} 5\ 4\ 6 \\ \times\ 4 \\ \hline 2\ 1\ 8\ 4 \\ \text{1 2} \end{array}$$

Method 2:

×	4
500	2000
40	160
6	24
	2184

13. **657**

14.
$$\begin{array}{r} 7.6\ 5 \\ -\ 6.5\ 4 \\ \hline 1.1\ 1 \end{array}$$

15.
$$\begin{array}{r} 1\ 3.7\ 7\ 7 \\ +\ 9.4\ 6\ 0 \\ \hline 2\ 3.2\ 3\ 7 \\ \text{1 1 1} \end{array}$$

16. **76 293**

17.
$$\begin{array}{r} 7\ 8\ 2 \\ 7\overline{)5\ 4\ 5\ 7\ 1\ 4} \end{array}$$

18. $\frac{2}{7} + \frac{4}{7} = \frac{2+4}{7} = \frac{6}{7}$

19.
$$\begin{array}{r} 4\ 5\ 14\ 9\ 10 \\ -\ 5.7\ 2 \\ \hline 4\ 9.2\ 8 \end{array}$$

20.
$$\begin{array}{r} 4\ 5\ 16\ 8\ 18\ 8\ 18 \\ -\ 7\ 0\ 9\ 1\ 9 \\ \hline 4\ 9\ 8\ 9\ 7\ 9 \end{array}$$

21. **0.0015**

22. $2^3 + 2 = 8 + 2 = 10$

23.
$$\begin{array}{r} 2\ 1\ 0 \\ 11\overline{)2\ 3\ 1\ 0} \end{array}$$

24. $10 \times 7.4 = 74$, $2 \times 7.4 = 14.8$
So, $12 \times 7.4 = 74 + 14.8 = \mathbf{88.8}$

25. Method 1:

$$\begin{array}{r} 6\ 6\ 4 \\ \times\ 3\ 4 \\ \hline 2\ 6\ 5\ 6 \\ 1\ 9\ 9\ 2\ 0 \\ \hline 2\ 2\ 5\ 7\ 6 \\ \text{1 1} \end{array}$$

Method 2:

×	30	4
600	18 000	2400
60	1800	240
4	120	16
	19 920	2656
	22 576	

Give **2 marks** if the answer is **22 576**.

Give **1 mark** if the answer is wrong but they've tried to use a correct method.

26. $10\% \text{ of } 2400 = 2400 \div 10 = 240$
 $20\% \text{ of } 2400 = 240 \times 2 = \mathbf{480}$

27. Method 1:

$$\begin{array}{r}
 25 \\
 39 \overline{) 975} \\
 \underline{- 78} \\
 195 \\
 \underline{- 195} \\
 0
 \end{array}$$

Method 2:

$$\begin{array}{r}
 25 \\
 39 \overline{) 9^{97} 195}
 \end{array}$$

Give **2 marks** if the answer is **25**.Give **1 mark** if the answer is wrong but they've tried to use a correct method.

$$\begin{aligned}
 28. \quad \frac{5}{6} + 1\frac{1}{12} &= \frac{10}{12} + \frac{13}{12} \\
 &= \frac{10+13}{12} = \frac{23}{12} \text{ or } 1\frac{11}{12}
 \end{aligned}$$

$$\begin{array}{r}
 15 11 15 3 \\
 \cancel{18} \cancel{2} 15 3 \\
 - 7 3 6 0 \\
 \hline
 8 8 9 3
 \end{array}$$

30. Method 1:

$$\begin{array}{r}
 4922 \\
 \times 77 \\
 \hline
 34454 \\
 344540 \\
 \hline
 378994
 \end{array}$$

Method 2:

×	70	7
4000	280 000	28 000
900	63 000	6300
20	1400	140
2	140	14
	344 540	34 454
	378 994	

Give **2 marks** if the answer is **378 994**.Give **1 mark** if the answer is wrong but they've tried to use a correct method.

31. $10\% \text{ of } 350 = 350 \div 10 = 35$

$20\% \text{ of } 350 = 35 \times 2 = 70$

$1\% \text{ of } 350 = 35 \div 10 = 3.5$

$2\% \text{ of } 350 = 3.5 \times 2 = 7$

So, $22\% \text{ of } 350 = 70 + 7 = 77$

32. $\frac{1}{2} \times \frac{2}{3} = \frac{1 \times 2}{2 \times 3} = \frac{2}{6} \text{ or } \frac{1}{3}$

33. Method 1:

$$\begin{array}{r}
 153 \\
 45 \overline{) 6885} \\
 \underline{- 45} \\
 238 \\
 \underline{- 225} \\
 135 \\
 \underline{- 135} \\
 0
 \end{array}$$

Method 2:

$$\begin{array}{r}
 153 \\
 45 \overline{) 6^{68} 23^{13} 5}
 \end{array}$$

Give **2 marks** if the answer is **153**.Give **1 mark** if the answer is wrong but they've tried to use a correct method.

34. $\frac{7}{10} \div 9 = \frac{7}{10 \times 9} = \frac{7}{90}$

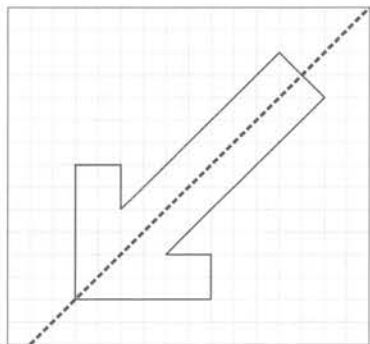
$$\begin{aligned}
 35. \quad \frac{1}{4} + \frac{4}{5} &= \frac{5}{20} + \frac{16}{20} = \frac{5+16}{20} \\
 &= \frac{21}{20} \text{ or } 1\frac{1}{20}
 \end{aligned}$$

36. $44 + 72 \div 12 = 44 + 6 = 50$

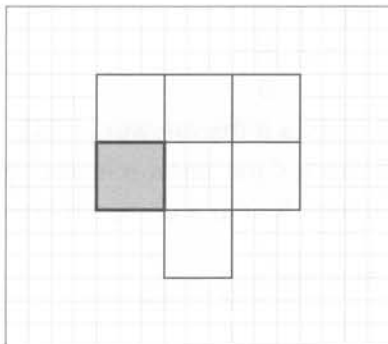
Set A Paper 2: Reasoning

Ask your teacher if you're not sure how many marks to give.

1a.



1b.



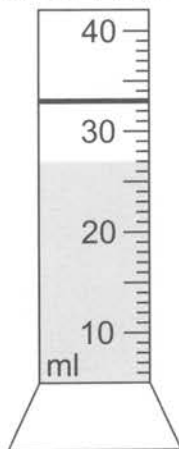
2. He bought $6 \times 22 = 132$ slices of bread.
So he has $132 - 120 = 12$ slices of bread left over.

Give **2 marks** if the answer is **12**.

Give **1 mark** if the answer is wrong but they've used a sensible method.

- 3a. $27 \text{ ml} - 12 \text{ ml} = 15 \text{ ml}$

- 3b. $27 \text{ ml} + 6 \text{ ml} = 33 \text{ ml}$



4. **March, June, April, May**

- 5a. **Tom**

- 5b. The difference between 3 and -1 is **4**.

6.

$$\begin{array}{r} 529 \\ - 374 \\ \hline 155 \end{array}$$

Usually this subtraction would be written as:

$$\begin{array}{r} 45129 \\ - 374 \\ \hline 155 \end{array}$$

Give **2 marks** if all three digits are correct.
Give **1 mark** if only two digits are correct.

- 7a. **5.22**

- 7b. $5.525 - 5.22 = 0.305$

8. The shape is a **pentagon**.
It is **irregular**.

Give **1 mark** if they wrote '**pentagon**'.

Give **1 mark** if they circled '**irregular**'.

- 9a. The factors of 28 are: 1, 2, 4, 7, 14, 28.
The odd factors are 1 and 7,
so the largest odd factor is **7**.

- 9b. $11 \times 11 = 121$
 $11 \times 12 = 132$, which is bigger than 130,
so the largest multiple of 11 less than 130 is **121**.

10. The total number of custard pies needed is $17 \times 5 = 85$. Each pie needs 35 ml of cream, so the total amount used is $85 \times 35 \text{ ml}$.

Method 1:

$$\begin{array}{r} 85 \\ \times 35 \\ \hline 425 \\ 2550 \\ \hline 2975 \end{array}$$

Method 2:

\times	30	5
80	2400	400
5	150	25
	2550	425
	2975	

So that's **2975 ml** of cream.

Give **2 marks** if the answer is **2975**.

Give **1 mark** if the answer is wrong but they've used a sensible method.

11. $\triangle + \star = 40$, so $\star + \triangle = 40$

This means $\square + \square + 40 = 72$,

so $\square + \square = 72 - 40 = 32$.

So, $\square = 32 \div 2 = 16$.

Give **2 marks** if the answer is **16**.

Give **1 mark** if the answer is wrong but they've used a sensible method.

12. Total weight = $15 + 12 + 24 + 9 = 60$ kg

Mean = $60 \div 4 = 15$ kg

13. 8 mangoes cost $\pounds 1.25 \times 8 = \pounds 10$.

One pineapple costs $\pounds 10 \div 5 = \pounds 2$.

Give **2 marks** if the answer is **£2**.

Give **1 mark** if the answer is wrong but they've used a sensible method.

14. The height of the rectangle is

$96 \div 12 = 8$ cm.

So, the area of the triangle is

$\frac{1}{2} \times 10 \times 8 = 40$ cm².

Give **2 marks** if the answer is **40 cm²**.

Give **1 mark** if the answer is wrong but they've used a sensible method.

15. $2.5 \times 4 = 10$, so $2.5 \times 40 = 100$

16. The end of the pool is an equilateral triangle, so all of its sides are the same length.

This means the vertical height of the rectangular part of the pool is 12.7 m.

So, the perimeter of the pool is

$25.4 + 25.4 + 12.7 + 12.7 + 12.7$

$= 50.8 + 38.1 = 88.9$ m

Give **2 marks** if the answer is **88.9 m**.

Give **1 mark** if the answer is wrong but they found the length of each side of the shape.

17. $\frac{6}{7}$ and $\frac{4}{7}$ (because $\frac{6}{7} + \frac{4}{7} = \frac{10}{7} = 1\frac{3}{7}$)

Give **1 mark** if only these two are circled.

18. E.g. A parallelogram has two pairs of equal angles. So if A is 130° and B is 70° then the angles inside the parallelogram would add up to $130^\circ + 70^\circ + 130^\circ + 70^\circ = 400^\circ$. This is impossible as the angles in a quadrilateral add up to 360° . So Mina must be wrong.

Give **1 mark** for any sensible explanation.

19. $8 \text{ km} \approx 5 \text{ miles}$

$96 \div 8 \times 5 = 12 \times 5 = 60$ miles

20. Books:

The books weigh $255 \text{ g} \times 6$.

Method 1:

$$\begin{array}{r} 255 \\ \times 6 \\ \hline 1530 \end{array}$$

Method 2:

\times	6
200	1200
50	300
5	30
	1530

So the 6 books weigh 1530 g.

Pens:

20 pens is $20 \div 5 = 4$ sets.

So 20 pens weigh $4 \times 30 \text{ g} = 120 \text{ g}$.

This means that so far the parcel weighs $1530 \text{ g} + 120 \text{ g} = 1650 \text{ g}$.

Rubbers:

The parcel can weigh up to $2 \text{ kg} = 2000 \text{ g}$.

So the rubbers can weigh up to

$2000 \text{ g} - 1650 \text{ g} = 350 \text{ g}$.

Divide by the weight of a rubber:

$350 \div 20 = 35 \div 2 = 17$ remainder 1,

so Aziza can send **17 rubbers**.

Give **3 marks** if the answer is **17**.

Give **2 marks** if the answer is wrong but they found that the weight of the parcel without the rubbers is 1650 g, or if they used a sensible method. Give **1 mark** if they only found either the total weight of the books or the total weight of the pens.

Set A Paper 3: Reasoning

Ask your teacher if you're not sure how many marks to give.

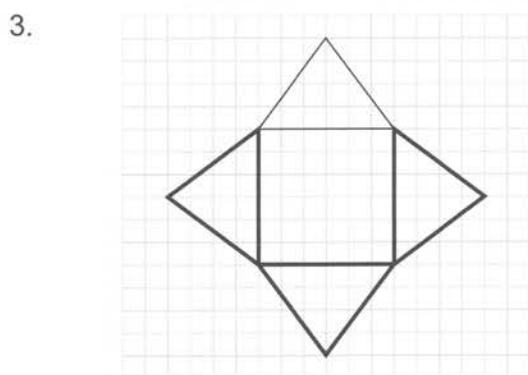
1a.

$$\begin{array}{r} 9\ 5\ 6\ 2 \\ +\ 8\ 7\ 2\ 1 \\ \hline 1\ 8\ 2\ 8\ 3 \\ \text{1} \end{array}$$

1b.

$$\begin{array}{r} 8\ 1\ 4\ 1\ 5\ 1\ 2 \\ -\ 7\ 8\ 8\ 8 \\ \hline 1\ 6\ 7\ 4 \end{array}$$

2. **0.83**



4a. $60 \times 8 = \mathbf{480 \text{ seconds}}$

4b. $24 \times 3 = \mathbf{72 \text{ hours}}$

5. Tom has £3.75, Aziza has £2.15.
Together they have:

$$\begin{array}{r} £\ 3\ .\ 7\ 5 \\ +\ £\ 2\ .\ 1\ 5 \\ \hline £\ 5\ .\ 9\ 0 \\ \text{1} \end{array}$$

The kite costs £10, so find $£10 - £5.90$:

$$\begin{array}{r} £\ 10\ .\ 0\ 0 \\ -\ £\ 5\ .\ 9\ 0 \\ \hline £\ 4\ .\ 1\ 0 \end{array}$$

So they need another **£4.10**.

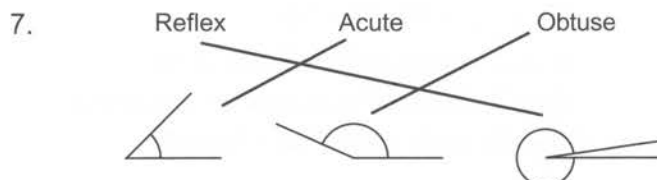
Give **2 marks** if the answer is **£4.10**.

Give **1 mark** if the answer is wrong but they've used a sensible method.

6. 27, 46, 65, **84**, **103**

(The rule for the sequence is 'add 19'.)

Give **1 mark** if **both** numbers are correct.

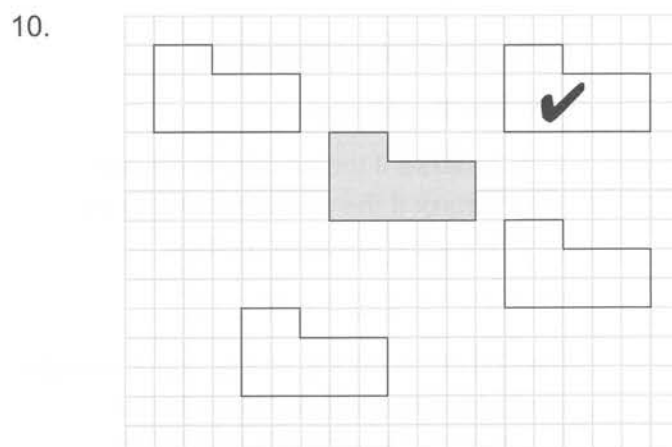


Give **2 marks** if they matched all three angles correctly. Give **1 mark** if they only matched one or two angles correctly.

8a. **19 minutes**

8b. **14:05**

9. The only even prime is 2.
So the number is $2 \times 3 \times 5 = \mathbf{30}$.



11a. $a = 2 \times b = 2 \times 44 = \mathbf{88}$

11b. $5c = 75 - 50 = 25$
So $c = 25 \div 5 = \mathbf{5}$

12. $4 \times 250 = 1000 \text{ ml green paint}$

$$\frac{2}{5} \times 1000 = \frac{2 \times 1000}{5} = \frac{2000}{5} = \mathbf{400 \text{ ml blue paint}}$$

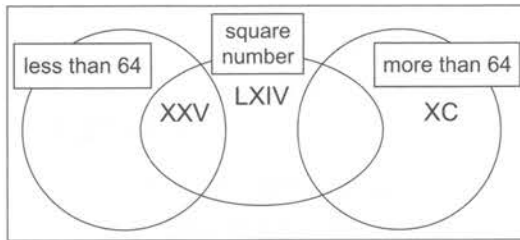
Give **2 marks** if the answer is **400 ml**.

Give **1 mark** if the answer is wrong but they've used a sensible method.

13a. $6 \times \mathbf{50\ 000} = \mathbf{300\ 000}$

13b. E.g. You would expect the estimate to be more than the actual answer as you have rounded both the numbers up.
Give **1 mark** for any sensible explanation.

14. XC is 90, XXV is 25 and LXIV is 64.



Give **2 marks** if all three Roman numerals are in the correct positions.

Give **1 mark** if only two Roman numerals are in the correct positions.

15. Height of drawers = $2 \times$ height of desk
 $= 2 \times 0.7 \text{ m} = 1.4 \text{ m}$

Height of wardrobe
 $=$ height of drawers + 0.5 m
 $= 1.4 \text{ m} + 0.5 \text{ m} = \mathbf{1.9 \text{ m}}$

Give **2 marks** if the answer is **1.9 m**.

Give **1 mark** if the answer is wrong but they've used a sensible method.

16. The angles inside a triangle add up to 180° , so the missing angle inside the triangle is:
 $180^\circ - (75^\circ + 50^\circ) = 180^\circ - 125^\circ = 55^\circ$.
 Angle a and this angle make a straight line, so $a = 180^\circ - 55^\circ = \mathbf{125^\circ}$.

Give **2 marks** if the answer is **125°** .

Give **1 mark** if the answer is wrong but they've used a sensible method.

17. $4 \text{ kg} = 4000 \text{ g}$
 $4000 \div 80 = 40 \div 8 = 50$
 So 4000 g of ice cream is 50 lots of 80 g , which means they use
 $25 \times 50 = 125 \times 10 = 1250 \text{ ml}$ of syrup.
 $1250 \text{ ml} = \mathbf{1.25 \text{ litres}}$

Give **2 marks** if the answer is **1.25 litres**.

Give **1 mark** if the answer is wrong but they've used a sensible method.

18a. $\frac{5}{6} \div 3 = \frac{5}{18}$

18b. $\frac{2}{3} \times \frac{6}{7} = \frac{4}{7}$

19. Kishan has $1 - \frac{5}{7} = \frac{2}{7}$ of the swim still to do.
 $\frac{2}{7}$ of the swim = 100 m , so $\frac{1}{7}$ is 50 m .

So the sponsored swim is

$7 \times 50 \text{ m} = \mathbf{350 \text{ m}}$ long.

Give **2 marks** if the answer is **350 m**.

Give **1 mark** if the answer is wrong but they've used a sensible method.

20. $5 \times (7 - 3) + 4 = 24$
 $(6 - 3) \times (4 + 8) = 36$

Give **1 mark** for **each** correct calculation.

Set B Paper 1: Arithmetic

Ask your teacher if you're not sure how many marks to give.

1. $5 \times 3 = 15$, so $50 \times 3 = \mathbf{150}$

2. **1**

3. **2105**

4. **421**

5. **88**

6. **2**

7. **12**

8.
$$\begin{array}{r} 70006 \\ + 7995 \\ \hline 78001 \\ \text{1 1 1} \end{array}$$

9. $8 \times 7 = 56$

$80 \times 70 = 8 \times 7 \times 100 = \mathbf{5600}$

10. **29 200**

11. Method 1:

$$\begin{array}{r} 746 \\ \times 5 \\ \hline 3730 \\ \text{2 3} \end{array}$$

Method 2:

\times	5
700	3500
40	200
6	30
	3730

12. **89 000**

13.
$$\begin{array}{r} 97 \\ 6 \overline{) 55842} \end{array}$$

$$\begin{array}{r} 14. \quad \begin{array}{r} 20.002 \\ + 1.180 \\ \hline 21.182 \end{array} \end{array}$$

$$15. \quad 0.36$$

$$\begin{array}{r} 16. \quad \begin{array}{r} \overset{2}{\cancel{3}} \overset{9}{\cancel{0}} \overset{1}{\cancel{2}} \overset{1}{\cancel{0}} \overset{1}{\cancel{0}} 6 \\ - 5492 \\ \hline 24724 \end{array} \end{array}$$

$$17. \quad 10\% \text{ of } 640 = 640 \div 10 = \mathbf{64}$$

$$\begin{array}{r} 18. \quad \begin{array}{r} 333.36 \\ - 21.21 \\ \hline 312.15 \end{array} \end{array}$$

$$19. \quad \frac{11}{13} - \frac{5}{13} = \frac{11-5}{13} = \frac{6}{13}$$

$$20. \quad 5^2 + 5 = 25 + 5 = \mathbf{30}$$

$$\begin{array}{r} 21. \quad \begin{array}{r} 6 \overset{7}{\cancel{8}} \overset{9}{\cancel{0}} \overset{1}{\cancel{4}} \overset{9}{\cancel{0}} \overset{1}{\cancel{0}} 1 \\ - 12689 \\ \hline 667812 \end{array} \end{array}$$

$$22. \quad 84 \div 12 = 7$$

So, $8400 \div 12 = 7 \times 100 = \mathbf{700}$

$$23. \quad 3.65$$

24. Method 1:

$$\begin{array}{r} \begin{array}{r} 59 \\ \times 52 \\ \hline 118 \\ 2950 \\ \hline 3068 \end{array} \end{array}$$

Method 2:

\times	50	2
50	2500	100
9	450	18
	2950	118
	3068	

Give **2 marks** if the answer is **3068**.

Give **1 mark** if the answer is wrong but they've tried to use a correct method.

$$25. \quad 1\frac{2}{3} + \frac{2}{3} = \frac{5}{3} + \frac{2}{3} = \frac{5+2}{3} = \frac{7}{3} \text{ or } \mathbf{2\frac{1}{3}}$$

$$26. \quad \frac{1}{6} \times \frac{1}{7} = \frac{1}{6 \times 7} = \frac{1}{42}$$

27. Method 1:

$$\begin{array}{r} \begin{array}{r} 35 \\ 17 \overline{) 595} \\ - 51 \\ \hline 85 \\ - 85 \\ \hline 0 \end{array} \end{array}$$

Method 2:

$$\begin{array}{r} \begin{array}{r} 35 \\ 17 \overline{) 5^9 8^5} \end{array} \end{array}$$

Give **2 marks** if the answer is **35**.

Give **1 mark** if the answer is wrong but they've tried to use a correct method.

$$28. \quad 15 \times \frac{3}{5} = \frac{15 \times 3}{5} = \frac{45}{5} = \mathbf{9}$$

$$29. \quad 10 \times 5.6 = 56$$

$$3 \times 5.6 = 16.8$$

$$\text{So, } 13 \times 5.6 = 56 + 16.8 = \mathbf{72.8}$$

$$30. \quad 10\% \text{ of } 80 = 80 \div 10 = 8$$

$$80\% \text{ of } 80 = 8 \times 8 = 64$$

$$5\% \text{ of } 80 = 8 \div 2 = 4$$

$$\text{So, } 85\% \text{ of } 80 = 64 + 4 = \mathbf{68}$$

$$31. \quad \frac{13}{14} + \frac{1}{28} = \frac{26}{28} + \frac{1}{28} = \frac{26+1}{28} = \frac{27}{28}$$

32. Method 1:

$$\begin{array}{r} \begin{array}{r} 3784 \\ \times 26 \\ \hline 22704 \\ + 75680 \\ \hline 98384 \end{array} \end{array}$$

Method 2:

\times	20	6
3000	60 000	18 000
700	14 000	4200
80	1600	480
4	80	24
	75 680	22 704
	98 384	

Give **2 marks** if the answer is **98 384**.

Give **1 mark** if the answer is wrong but they've tried to use a correct method.

33. Method 1:

$$\begin{array}{r} \begin{array}{r} 73 \\ 37 \overline{) 2701} \\ - 259 \\ \hline 111 \\ - 111 \\ \hline 0 \end{array} \end{array}$$

Method 2:

$$37 \overline{) 27^{27} 0^{11} 1}$$

Give **2 marks** if the answer is **73**.

Give **1 mark** if the answer is wrong but they've tried to use a correct method.

$$34. \quad 1\frac{2}{3} - \frac{3}{4} = \frac{5}{3} - \frac{3}{4} = \frac{20}{12} - \frac{9}{12} = \frac{11}{12}$$

$$35. \quad \frac{4}{5} \div 5 = \frac{4}{5 \times 5} = \frac{4}{25}$$

$$36. \quad (10 - 2) + 14 \times 2 = 8 + 14 \times 2$$

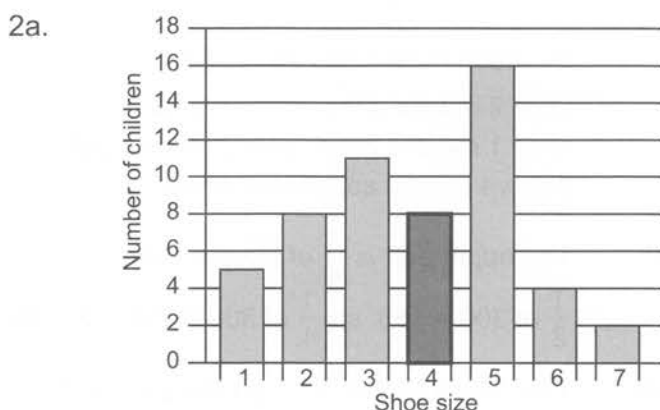
$$= 8 + 28 = \mathbf{36}$$

Set B Paper 2: Reasoning

Ask your teacher if you're not sure how many marks to give.

1. 45 294, 35 294, 25 294, **15 294, 5294**

Give **1 mark** if both numbers are correct.



- 2b. $5 + 8 + 11 = \mathbf{24}$ children

3. **19 and 5** or **17 and 7** or **13 and 11**

Give **1 mark** for a correct pair of numbers in either order.

4a.

$$\begin{array}{r} 3 \ 1 \ 7 \ 6 \ 5 \\ + 1 \ 8 \ 9 \ 9 \ 9 \\ \hline \pounds \ 5 \ 0 \ 7 \ 6 \ 4 \\ \text{\scriptsize 1 \ 1 \ 1 \ 1} \end{array}$$

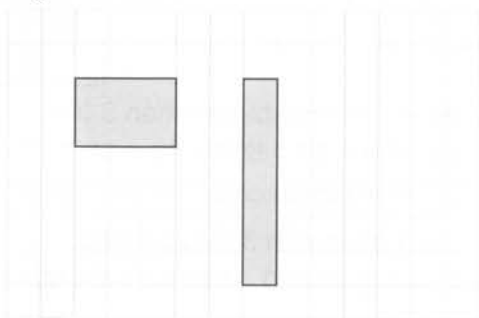
4b.

$$\begin{array}{r} \overset{2}{\cancel{2}} \overset{10}{\cancel{10}} \overset{16}{\cancel{16}} \overset{15}{\cancel{15}} \overset{15}{\cancel{15}} \\ - 1 \ 8 \ 9 \ 9 \ 9 \\ \hline \pounds \ 1 \ 2 \ 7 \ 6 \ 6 \end{array}$$

5. **0.783, 0.82, 0.824, 1.02, 1.1**

6. The analogue clock shows 4.05 pm.
The digital clock shows 15:57 = 3.57 pm.
So the digital clock is **8 minutes** slow.

7. E.g.



Give **1 mark** if they've drawn any **2 × 3** rectangle **and** any **1 × 6** rectangle.

8. Two trumpets are $192 \div 2 = 96$ cm long.
So, the clarinet is $155 - 96 = \mathbf{59}$ cm.

Give **2 marks** if the answer is **59 cm**.

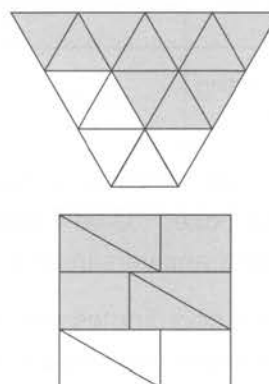
Give **1 mark** if the answer is wrong but they've used a sensible method.

9. $6.3 \text{ km} = 6.3 \times 1000 = 6300 \text{ m}$
 $63 \div 7 = 9$, so $6300 \div 7 = 9 \times 100 = 900$
So Juan walks **900 m** each day.

Give **2 marks** if the answer is **900 m**.

Give **1 mark** if the answer is wrong but they've used a sensible method.

10. E.g.



Give **1 mark** if any 10 triangles have been shaded in the first shape.

Give **1 mark** if any 4 triangles and any 2 rectangles have been shaded in the second shape.

11. Cost = $\pounds 5.50 \times 20 + \pounds 50$
 $\pounds 5.50 \times 20 = \pounds 5.50 \times 10 \times 2$
 $= \pounds 55 \times 2 = \pounds 110$
 $\pounds 110 + \pounds 50 = \mathbf{\pounds 160}$

12. $\frac{2}{5} = \frac{4}{10}$ and $1\frac{1}{10} = \frac{11}{10}$
So $1\frac{1}{10} - \frac{2}{5} = \frac{11}{10} - \frac{4}{10} = \frac{7}{10}$
So $\frac{2}{5} + \frac{7}{10} = 1\frac{1}{10}$

13. **1.598** and **0.402**

Give **1 mark** if both correct numbers are circled.

14. The temperature in the bedroom is 25°C .
The temperature in the garden is -5°C .
You add 5°C to go from -5°C to 0°C ,
and then add 25°C to get to 25°C .
So the difference between the two
temperatures is $5^{\circ}\text{C} + 25^{\circ}\text{C} = 30^{\circ}\text{C}$.
 $30^{\circ}\text{C} \div 2 = 15^{\circ}\text{C}$, so halfway between
the temperatures is 15°C below 25°C .
So the temperature in the garage is
 $25^{\circ}\text{C} - 15^{\circ}\text{C} = 10^{\circ}\text{C}$.

Give **2 marks** if the answer is **10°C** .

Give **1 mark** if the answer is wrong but
they've used a sensible method.

15.

	Multiple of 8	Number ending in 2
Multiple of 6	e.g. 24, 48, 72	e.g. 12, 42, 72
Number starting with 3	e.g. 32	302

Give **2 marks** if they have correct answers
in all three boxes. Give **1 mark** if they
have correct answers in only two boxes.

16. The correct coordinates are those that
make a triangle with two equal sides.
These are **(0, 0)**, **(1, -1)** and **(2, 0)**.
Give **2 marks** if they circled all three
correct coordinates. Give **1 mark** if they
circled only two correct coordinates.
17. 12 large buckets fill the 60 litre tub.
1 large bucket contains $60 \div 12 = 5$ litres,
so 3 large buckets contain $5 \times 3 = 15$ litres.
This means that 5 small buckets contain
15 litres of water, so 1 small bucket holds
 $15 \div 5 = 3$ litres.
Give **2 marks** if the answer is **3 litres**.
Give **1 mark** if the answer is wrong but
they've used a sensible method.

18. They took $375 - 7 = 368$ raisins in total.
Divide to find the number they each took.

Method 1:

$$\begin{array}{r} \\ \\ 1 \\ - \\ \\ - \\ \end{array}$$

Method 2:

$$\begin{array}{r} \\ \\ 1 \\ - \\ \end{array}$$

So, each child takes **23** raisins.

Give **2 marks** if the answer is **23**.

Give **1 mark** if the answer is wrong but
they've used a sensible method.

- 19a. The apple part is $\frac{1}{4}$ of the pie chart.
 $\frac{1}{2}$ of 300 = 150, so $\frac{1}{4}$ of 300 = $150 \div 2 = 75$
- 19b. The cherry part is 60° . So the fraction that
were cherry tarts is $\frac{60}{360} = \frac{6}{36} = \frac{1}{6}$.
20. The grey triangle is isosceles, so the other
base angle is 65° , and the third angle in
the triangle is $180^{\circ} - 65^{\circ} - 65^{\circ} = 50^{\circ}$.
Angle a is vertically opposite this angle,
so $a = 50^{\circ}$.
Give **2 marks** if the answer is **50°** .
Give **1 mark** if the answer is wrong but
they've used a sensible method.
21. Juan needs $\frac{1 \ 7}{6 \overline{) 1 \ 0 \ 4 \ 2}}$ packs of stamps.

To find $\text{£}3.30 \times 17$, first work out 33×17 .

Method 1:

$$\begin{array}{r} \\ \\ \times \\ \\ 2 \\ \\ 3 \\ \end{array}$$

Method 2:

\times	10	7
30	300	210
3	30	21
	330	231
	561	

33 is 10 times bigger than 3.30,
so $3.30 \times 17 = 561 \div 10 = 56.1$.

So the stamps cost **$\text{£}56.10$** in total.

Juan pays with $3 \times \text{£}20 = \text{£}60$.

So he gets $\text{£}60 - \text{£}56.10 = \text{£}3.90$ change.

Give **3 marks** if the answer is **$\text{£}3.90$** .

Give **2 marks** if the answer is wrong but
they found that the total cost of stamps is
 $\text{£}56.10$, or if they used a sensible method.

Give **1 mark** if they only found that he
needs 17 packs of stamps.

Set B Paper 3: Reasoning

Ask your teacher if you're not sure how many marks to give.

1a. **3690**

1b. **12 000**

2a. 6:30 pm = 18:30
13 minutes before 18:30 = **18:17**

2b. Two hours on from 6.30 pm is 8.30 pm.
9.12 pm is $30 + 10 + 2 = 42$ minutes
on from 8.30 pm, so the play is
2 hours and 42 minutes long.

3a. Morning:
 $20 + 20 + \frac{3}{4} \times 20 = 20 + 20 + 15 = 55$ cups

Afternoon:
 $20 + \frac{1}{4} \times 20 = 20 + 5 = 25$ cups

Evening:
 $20 + 20 + \frac{1}{2} \times 20 = 20 + 20 + 10 = 50$ cups
So total = $55 + 25 + 50 = \mathbf{130}$

3b. $50 - 25 = \mathbf{25}$

4. **Two hundred thousand**

5a. **22°**
(Accept any angle between 20° and 24°.)

5b. **Right-angled**

6. The area of the room is $6 \times 8 = 48 \text{ m}^2$.
Multiply by 4 to get the cost.

Method 1:

$$\begin{array}{r} 48 \\ \times 4 \\ \hline 192 \end{array}$$

Method 2:

\times	4
40	160
8	32
	192

So, the carpet will cost **£192**.

Give **2 marks** if the answer is **£192**.

Give **1 mark** if the answer is wrong but they've used a sensible method.

7.

$$\begin{array}{r} 572 \\ \times 3 \\ \hline 1716 \end{array}$$

Give **2 marks** if they got all three numbers correct. Give **1 mark** if they only got two numbers correct.

8. The left-hand vertical side of the shape is $5 + 4 = 9$ cm long.
So, the perimeter is
 $4 + 4 + 7 + 5 + 11 + 9 = \mathbf{40 \text{ cm}}$

9. $101 \div 1000 = \mathbf{0.101}$

10. Half of £2.40 is £1.20.
 $6 \times £1.20 = £7.20$
So the total price is
 $£7.20 + £2.40 = \mathbf{£9.60}$.

Give **2 marks** if the answer is **£9.60**.
Give **1 mark** if the answer is wrong but they've used a sensible method.

11. Each piece of chocolate weighs
 $72 \text{ g} \div 12 = 6 \text{ g}$.
 $5 \times 6 \text{ g} = 30 \text{ g}$, so there is
 $72 \text{ g} - 30 \text{ g} = \mathbf{42 \text{ g}}$ remaining.

Give **2 marks** if the answer is **42 g**.
Give **1 mark** if the answer is wrong but they've used a sensible method.

12. $\frac{1}{5} = 0.2$, and $0.2 + 0.3 = 0.5$.

So $\frac{1}{5}$ and **0.3** should be circled.

Give **1 mark** if both correct answers are circled.

13. Volume of carton = $5 \times 9 \times 10 = 450 \text{ cm}^3$.
 $450 \div 150 = 45 \div 15 = 3$,
so it takes Billy **3 days** to drink the carton.
Give **2 marks** if the answer is **3**.
Give **1 mark** if the answer is wrong but they've used a sensible method.

- 14a. E.g. 99×101 is the same as $99 \times 100 + 99$.
Give **1 mark** for any sensible explanation.

14b. **9999**

15. 10% of $50 = 5$,
 40% of $50 = 5 \times 4 = 20$,
so there are 20 green fish.
This means there are
 $50 - 20 - 18 = 12$ brown fish.
So $\frac{12}{50}$ (or $\frac{6}{25}$) of the fish are brown.
Give **2 marks** if the answer is $\frac{12}{50}$ or $\frac{6}{25}$.
Give **1 mark** if the answer is wrong but
they've used a sensible method.

- 16a. $20 + 10 = 30$,
 $30 \div 6 = 5$

- 16b. $1 \times 6 - 10 = 6 - 10 = -4$,
so he rolled a **1**.

17. Factors of 63: 1, 3, 7, 9, 21, 63
Factors of 28: 1, 2, 4, 7, 14, 28
So the largest common factor is **7**.

- 18a. **$Q = 10P + 3$**

- 18b. E.g.
 $P = 1, Q = 13$
 $P = 2, Q = 23$
 $P = 3, Q = 33$ etc.
Give **1 mark** for any **two** correct
pairs of numbers.

19. Amount of compost Tom has used:

$$\begin{array}{r} 3.60 \\ + 4.75 \\ \hline 8.35 \text{ kg} \end{array}$$

$\frac{4}{5}$ of the bag is left, so $\frac{1}{5}$ of the bag of
compost is 8.35 kg.

So work out $8.35 \text{ kg} \times 5$ to find how
much was in the bag to start with.

First work out 835×5 .

Method 1:

$$\begin{array}{r} 835 \\ \times 5 \\ \hline 4175 \end{array}$$

Method 2:

\times	5
800	4000
30	150
5	25
	4175

835 is 100 times bigger than 8.35,
so $8.35 \times 5 = 4175 \div 100 = 41.75$.

So there were **41.75 kg** of compost
in the bag to start with.

Give **2 marks** if the answer is **41.75 kg**.

Give **1 mark** if the answer is wrong but
they've used a sensible method.

- 20a. Diameter = $3 \times 2 = 6$

- 20b. The horizontal line between P and (7, 5)
goes through the centre of the circle,
so it is a diameter.
So, the x coordinate of P is $7 - 6 = 1$.
The y coordinate is the same as for the
point (7, 5). So, P = **(1, 5)**.