

Year 9 into 10 Bridging Project Foundation

Please complete the Mathematics Papers attached. You do not need to print this and can answer the questions in your book. Make sure you label the questions clearly and write your workings out. You do not need to write out the full question.

You may use your books and notes to help you.

Spend a maximum of 1 Hour on each paper.

The Mark Scheme is on a separate document if you finish early and are able to mark it. Following this you will find it beneficial to make a list on the front page of:

- 3 topics/questions you understand and were successful at – full marks.
- 3 topics/questions you nearly understand – some marks or processes were correct.
- 3 topics/questions you do not understand including after you have looked at the mark scheme – no marks.

Ma

KEY STAGE

3

TIER

3–5

Mathematics test

Paper 1

Calculator not allowed

First name _____

Last name _____

School _____

Remember

- The test is 1 hour long.
- You **must not** use a calculator for any question in this test.
- You will need: pen, pencil, rubber, ruler, tracing paper and mirror (optional).
- This test starts with easier questions.
- Try to answer all the questions.
- Write all your answers and working on the test paper – do not use any rough paper. Marks may be awarded for working.
- Check your work carefully.
- Ask your teacher if you are not sure what to do.

2009

TOTAL MARKS	
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Instructions

Answers



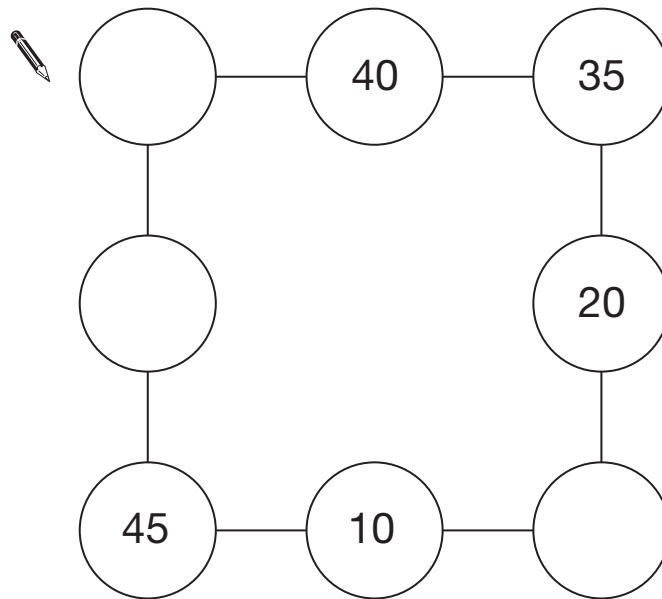
This means write down your answer or show your working and write down your answer.

Calculators



You **must not** use a calculator to answer any question in this test.

1. In the diagram, three circles in a straight line must **add up to 100**
Write in the missing numbers.



2 marks



2. In a restaurant, the colour of each dish shows how much the food in it costs.
The table shows the different colours and costs.

Colour of dish	Cost
Green	£1.50
Blue	£2.00
Red	£2.50
Orange	£3.00
Pink	£3.50

- (a) Meera pays for **two blue** dishes and **two pink** dishes.
Altogether, how much did they cost?



1 mark

- (b) Victor pays for one **green**, one **red** and one **pink** dish.
He pays with a **£10 note**.

How much change should he get?



2 marks

- (c) Rachel pays for **two dishes** that cost **exactly £4.50** altogether.

What colours could her dishes be?

There are two possible answers. Write them both.



colours: _____ and _____

_____ 1 mark

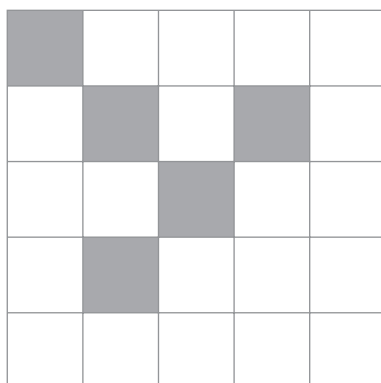
or colours: _____ and _____

_____ 1 mark



3. (a) This diagram has **one line of symmetry**.

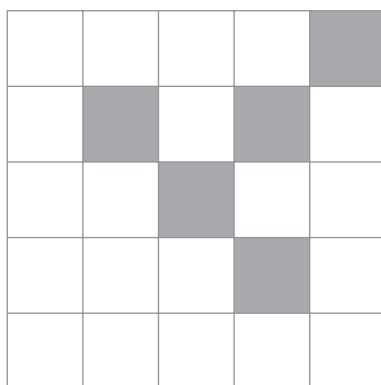
Draw the line of symmetry on the diagram below.



Square
grid

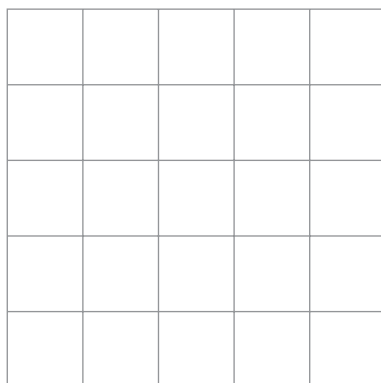
1 mark

- (b) Here is the same diagram after a **quarter-turn clockwise**.



Square
grid

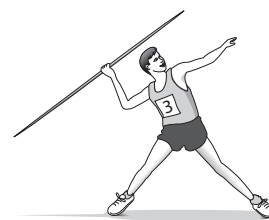
Complete the diagram below to show it after **another quarter-turn clockwise**.



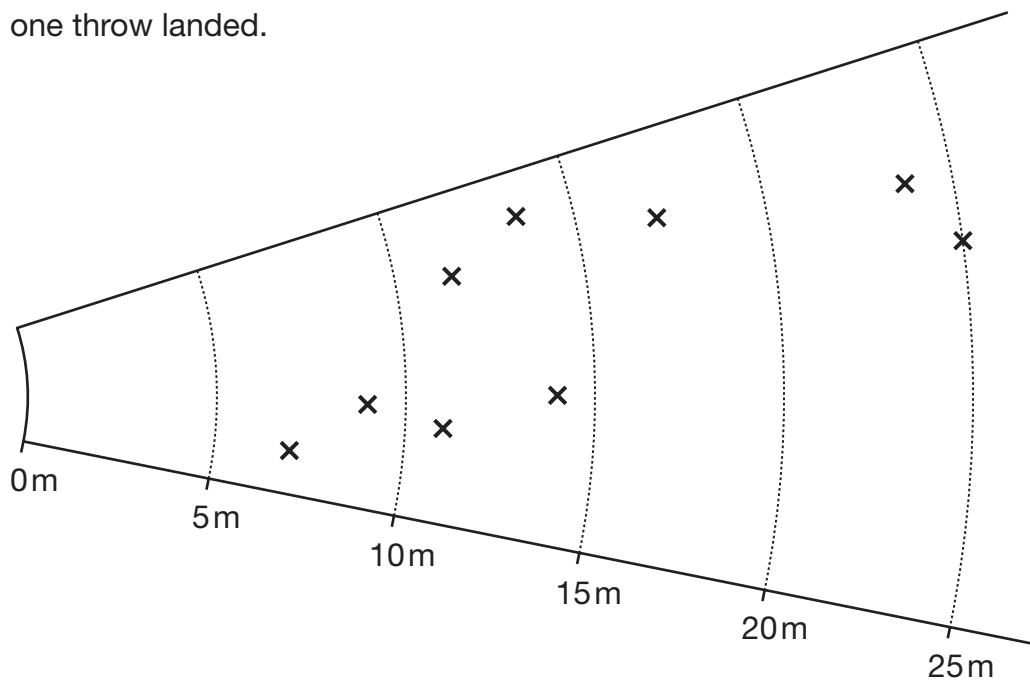
Square
grid

1 mark

4. At a school sports day, nine pupils threw the javelin.



In the diagram, each cross shows where one throw landed.



- (a) One throw was **between 15m and 20m** long.

About how long was this throw?

 _____ m

_____ 1 mark

- (b) How many throws were **between 10m and 15m** long?

 _____

_____ 1 mark

- (c) About how much **further** was the longest throw than the shortest throw?

 _____ m

_____ 1 mark



5. Look at the digit cards numbered from 1 to 9



Use the digit cards to complete the calculations below.

You can use each card more than once.



$$\square + \square = \square \square$$

1 mark



$$\square \times \square = \square \square$$

1 mark



$$\square \square - \square = \square \square$$

1 mark



$$\square \square \div \square = \square$$

1 mark

6. Here is a picture of Fred standing outside his house.



- (a) Which measurement below is most likely to be **Fred's height**?

Put a ring round the correct answer.



0.8 metres

1.8 metres

2.8 metres

3.8 metres

_____ 1 mark

- (b) Which measurement below is most likely to be the **height of Fred's house**?

Put a ring round the correct answer.



1 metre

7 metres

17 metres

27 metres

_____ 1 mark



7. (a) Kate has **one 10p** coin, **one 50p** coin and some 20p coins.

Altogether she has **£1.20**

How many **20p** coins does she have?



1 mark

- (b) Show the different ways of making **£1.60** using **two 50p coins**, and 20p and 10p coins.

The first way is done for you.



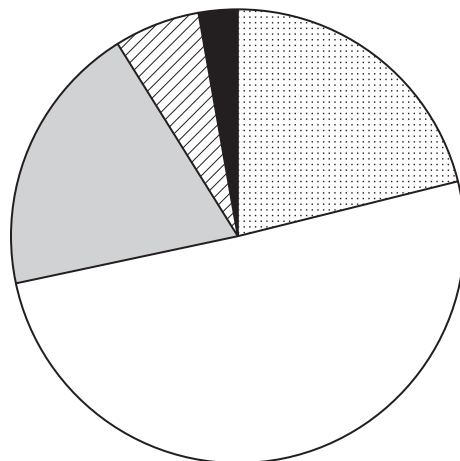
	Number of 50p coins	Number of 20p coins	Number of 10p coins
First way:	2	3	0
Second way:	2		
Third way:	2		
Fourth way:	2		

2 marks

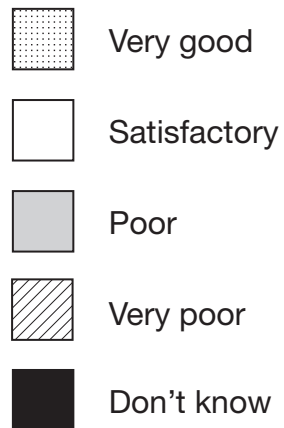
8. In a survey, people were asked:

How good is your doctor?

The pie chart shows the results.



Key:



- (a) About what percentage of the people said **'Satisfactory'**?



_____ %

1 mark

- (b) Altogether, about what percentage of the people said **'Poor'** or **'Very poor'**?



_____ %

1 mark

- (c) Give one reason why a person may say **'Don't know'**.

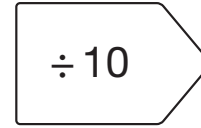
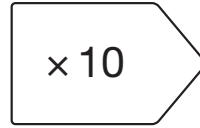
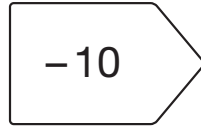
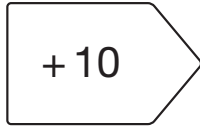


1 mark

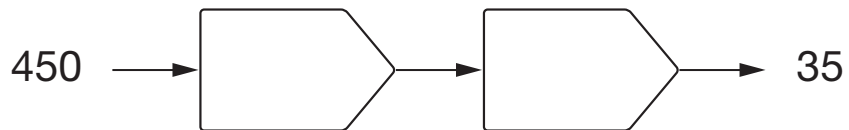


9. Fill in the boxes to complete each number chain.

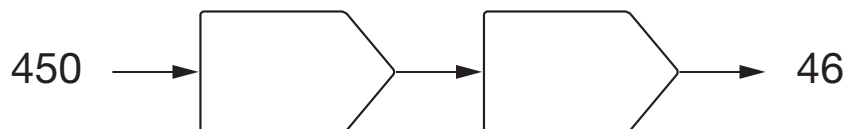
Use any of the following:



1 mark

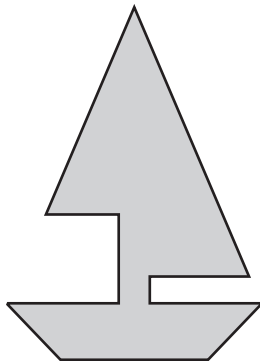


1 mark



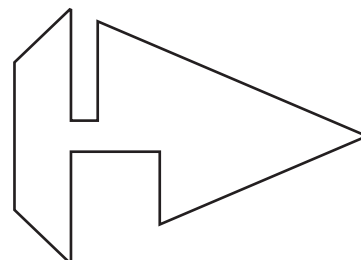
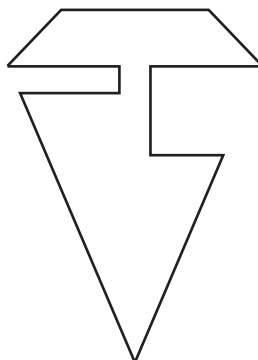
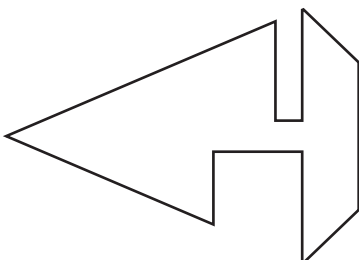
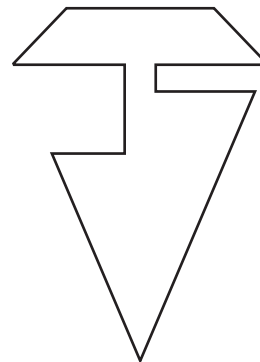
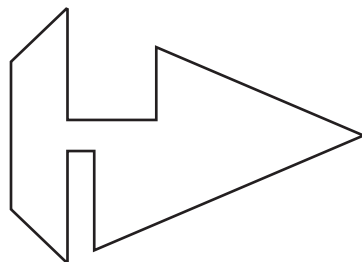
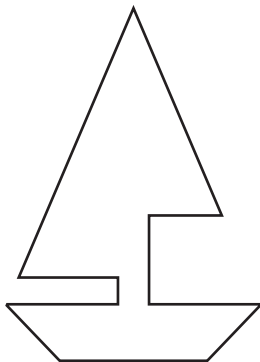
1 mark

10. Samir has a piece of card that is grey on one side and white on the other.
He cuts out this shape from the card.



He turns over the shape so that the white side is showing.

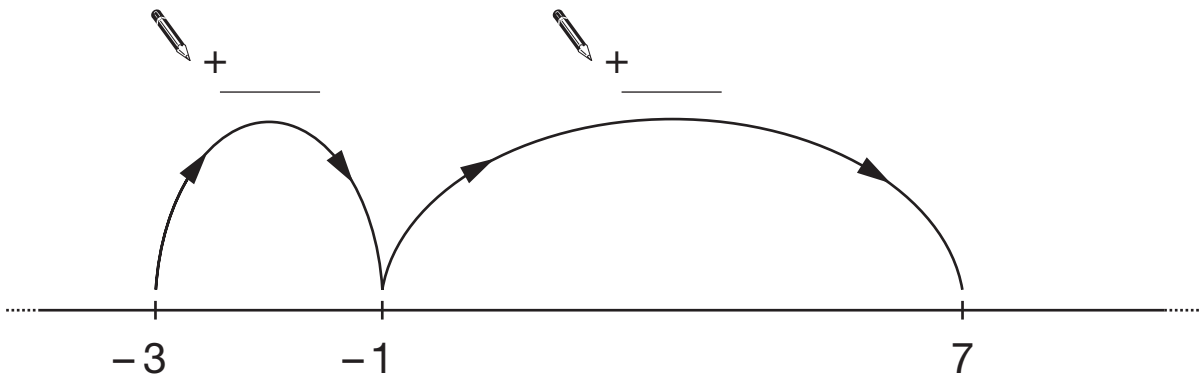
Tick (✓) **all** the shapes below that show the **white** side of Samir's shape.



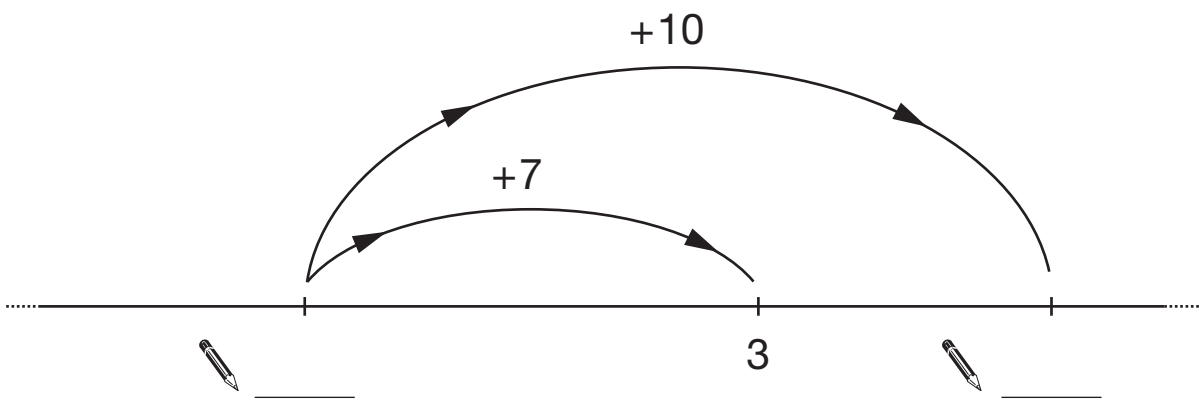
2 marks



11. Write in the missing numbers.



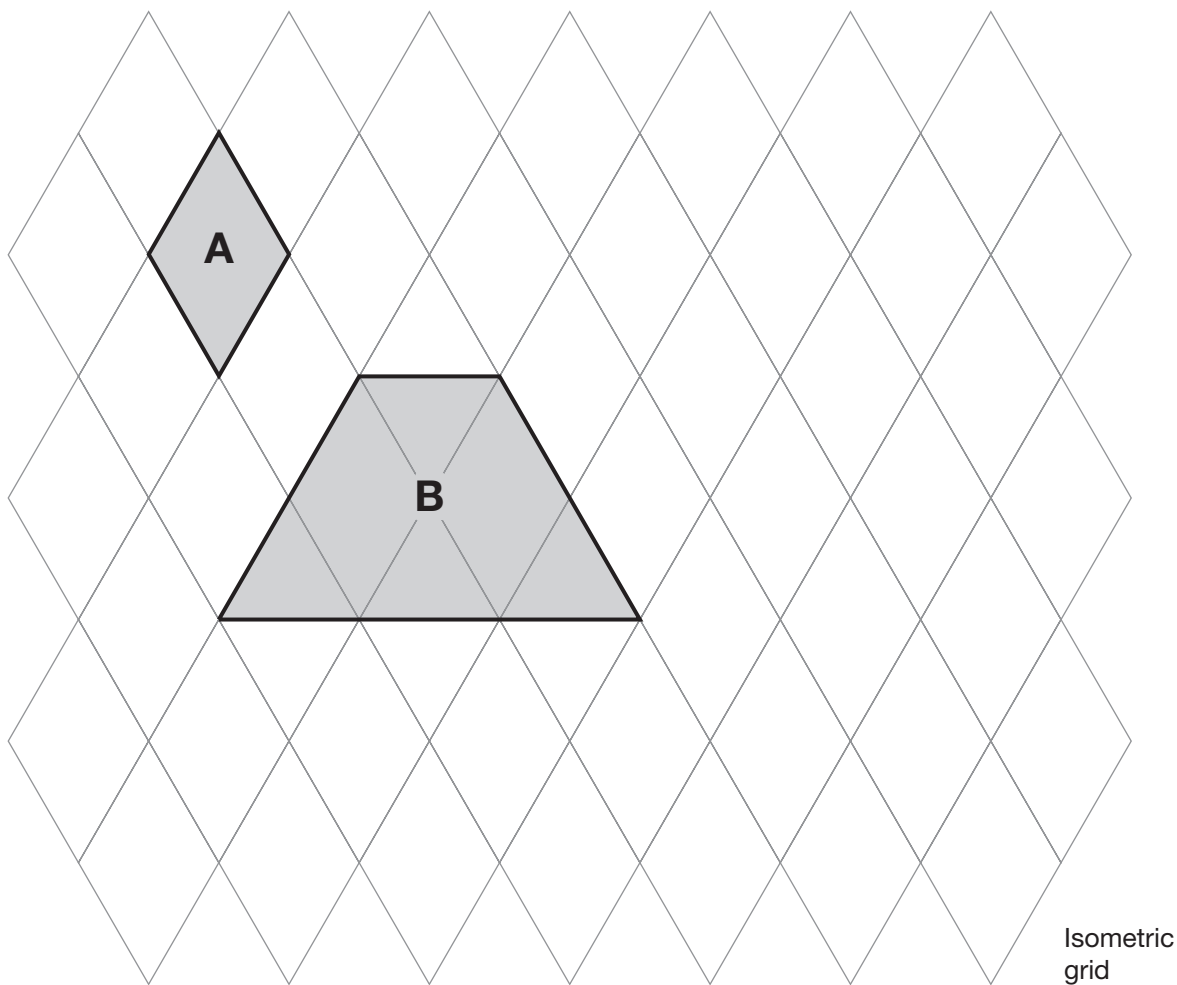
1 mark



1 mark

1 mark

12. Look at the shaded shapes.



- (a) The area of shape **A** is 3cm^2
What is the area of shape **B**?



_____ cm^2

1 mark

- (b) On the grid, draw a **triangle** that has an area of 6cm^2


1 mark




13. Write the missing digits in each calculation below.

The first one is done for you.

$$\begin{array}{|c|c|} \hline 1 & 9 \\ \hline \end{array} \times 3 = \begin{array}{|c|c|} \hline 5 & 7 \\ \hline \end{array}$$

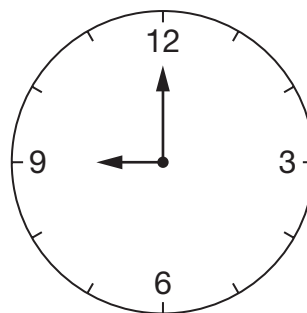

$$\begin{array}{|c|c|} \hline & \\ \hline \end{array} \times 3 = \begin{array}{|c|c|} \hline 5 & 1 \\ \hline \end{array}$$

1 mark


$$\begin{array}{|c|c|} \hline & \\ \hline \end{array} \times 3 = \begin{array}{|c|c|} \hline 4 & \\ \hline \end{array}$$

1 mark

14. (a) I started swimming at **9am**.



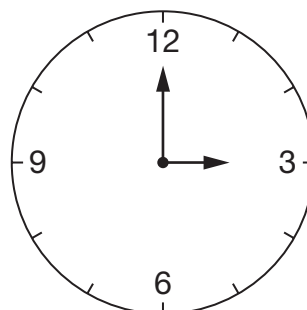
When I finished swimming, the **minute hand** of the clock had **turned 360°**

What time did I finish swimming?



1 mark

- (b) I started walking at **3pm**.



When I finished walking, the **hour hand** of the clock had **turned 90°**

What time did I finish walking?



1 mark

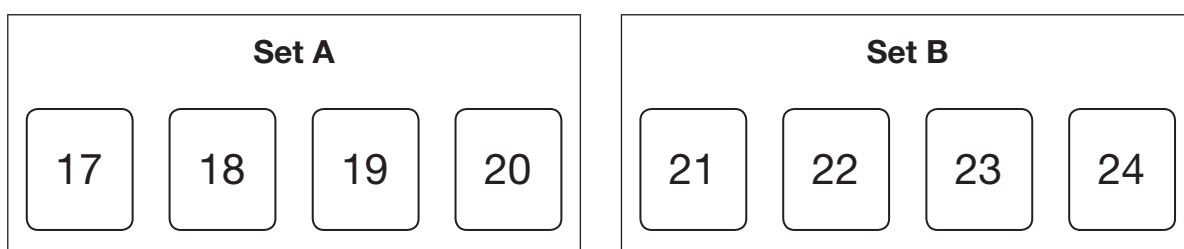


15. Look at this set of four number cards.



The **sum** of these numbers is **80**

Now look at the two sets of number cards below.



Which set has a **sum** that is **closer to 80**?



Set A

Set B

Explain your answer.



1 mark

16. (a) A number chain starts

1 \longrightarrow 2 \longrightarrow 5 \longrightarrow ...

To find the next number you use the rule

$\times 3$ then $- 1$

Write the next two numbers in the number chain.



1 \longrightarrow 2 \longrightarrow 5 \longrightarrow _____ \longrightarrow _____

1 mark

(b) Here is a different number chain.

3 \longrightarrow 9 \longrightarrow 27 \longrightarrow 81 \longrightarrow ...

What could the **rule** be to find the next number?




1 mark



17. (a) Join all the pairs of numbers that **add** together to equal 1

The first one is done for you.




0.1	0.99
0.11	0.9
0.01	0.999
0.91	0.89
0.001	0.09

2 marks

(b) Now join all the pairs of numbers that **multiply** to equal 1

The first one is done for you.



1	2
0.5	4
0.25	1
0.1	20
0.05	10

2 marks

18. Paul has **15** T-shirts.

The information shows the colours of his T-shirts.

5 black
3 white
3 red
2 dark blue
1 light blue
1 yellow

Paul is going to take one of his T-shirts at random.

(a) What is the probability that the T-shirt will be **red**?



1 mark

(b) What is the probability that the T-shirt will **not** be **black**?



1 mark

(c) He takes one of his **blue** T-shirts at random.

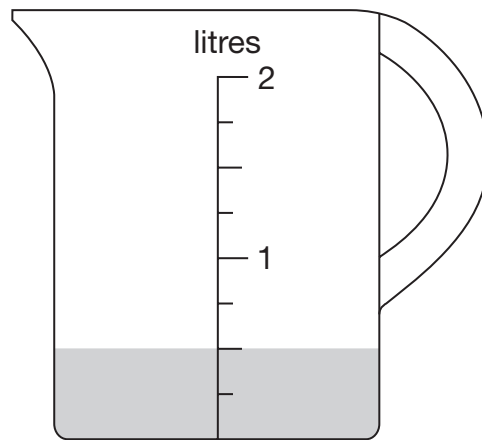
What is the probability that the T-shirt is **light blue**?



1 mark

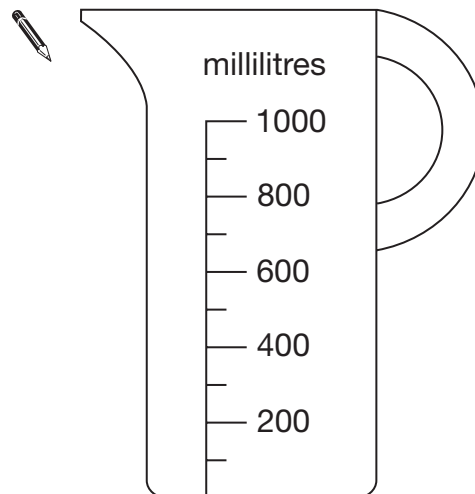


19. Zak has some water in a jug.



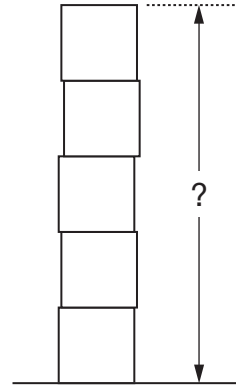
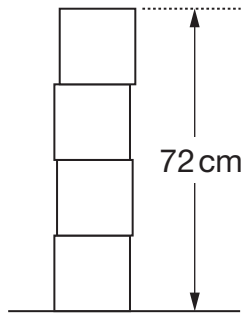
He pours this water into the jug below.

Draw the correct level of the water on the jug.



1 mark

20. Lisa has some boxes that are all cubes of the same size.
She uses four of the boxes to make a pile with a height of **72 cm**.
She puts one more box on top of the pile.



Work out the height of the pile of **five** boxes.



_____ cm

 2 marks



21. (a) Work out **5%** of **360**



1 mark

(b) Work out **15%** of **360**

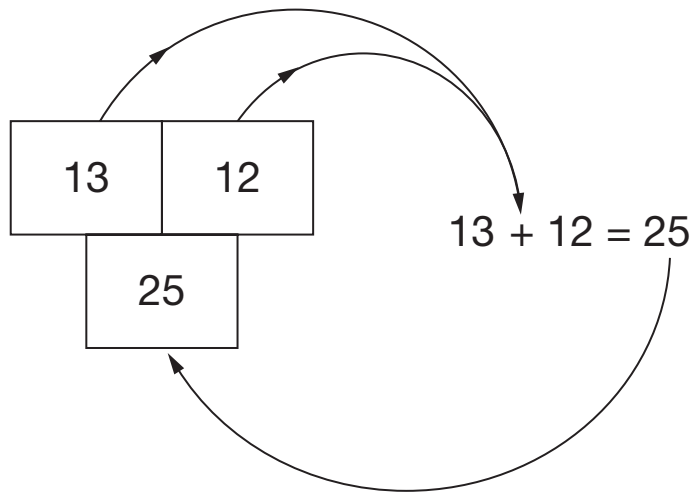
You can use part (a) to help you.



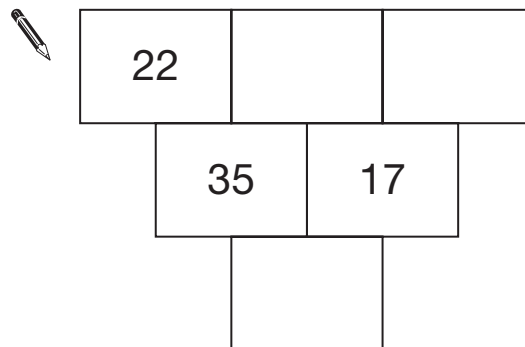
1 mark

22. In these number grids, two numbers are added to give the number below.

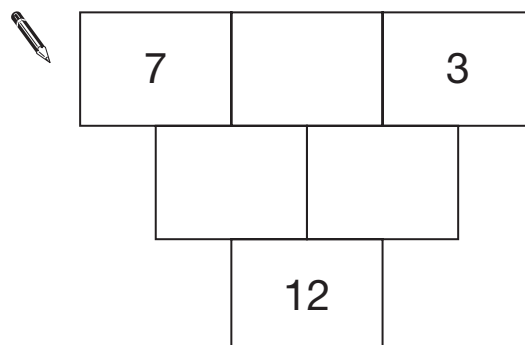
Example:



Write numbers in the number grids below to make them correct.



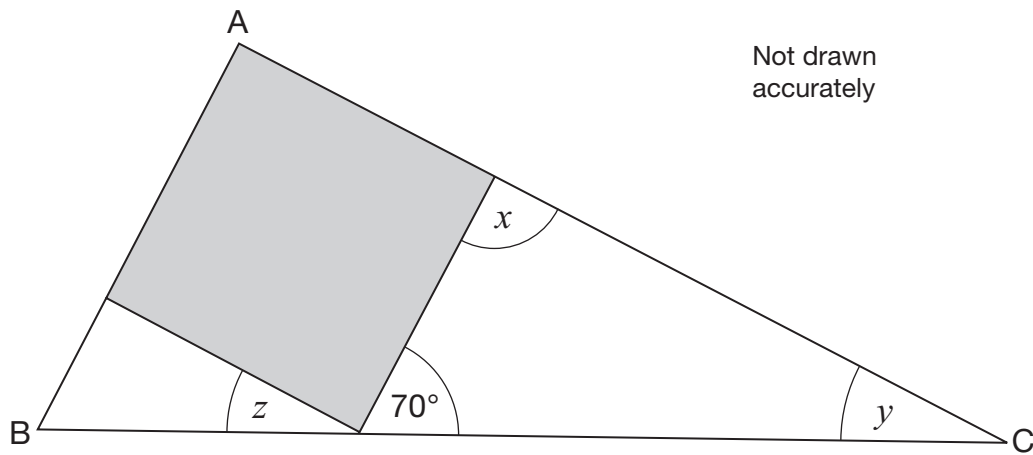
1 mark



1 mark



23. Look at the right-angled triangle ABC.



The square fits exactly inside the triangle.

Work out the sizes of angles x , y and z



$$x = \text{_____}^\circ$$

$$y = \text{_____}^\circ$$

$$z = \text{_____}^\circ$$

3 marks

24. Look at these equations.

$$11 = 6 + a$$

$$a + 7 = 10 + b$$

Use **both** equations to work out the value of b



$$b = \underline{\hspace{2cm}}$$

2 marks



END OF TEST

Ma

KEY STAGE

3

TIER

3–5

Mathematics test

Paper 2

Calculator allowed

First name _____

Last name _____

School _____

Remember

- The test is 1 hour long.
- You **may** use a calculator for any question in this test.
- You will need: pen, pencil, rubber, ruler, tracing paper and mirror (optional) and a calculator.
- This test starts with easier questions.
- Try to answer all the questions.
- Write all your answers and working on the test paper – do not use any rough paper. Marks may be awarded for working.
- Check your work carefully.
- Ask your teacher if you are not sure what to do.

2009

TOTAL MARKS	
-------------	--

Instructions

Answers



This means write down your answer or show your working and write down your answer.

Calculators



You **may** use a calculator to answer any question in this test.

1. The table shows the items sold in a school shop in one week.

	Mon	Tue	Wed	Thu	Fri
Pencil	25	18	13	21	16
Pen	17	20	19	9	12
Ruler	5	1	2	6	8
Protractor	5	1	4	3	2
Compasses	5	1	2	1	0

- (a) How many **pens** were sold in the shop on **Wednesday**?



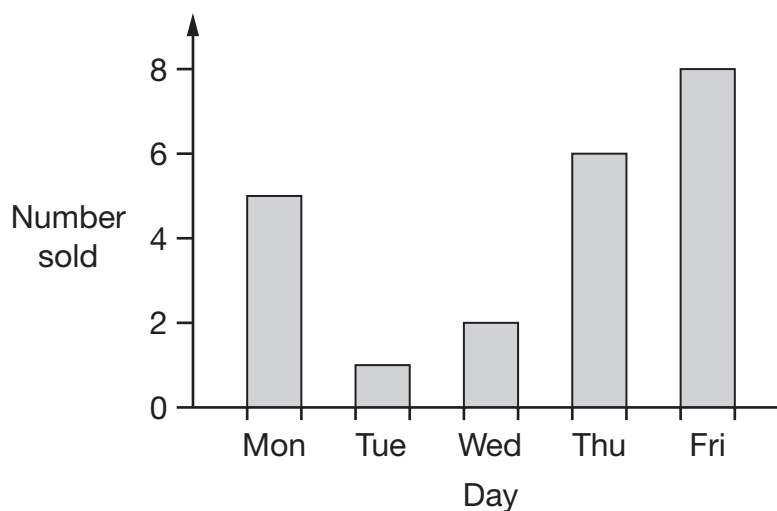
1 mark

- (b) On what day did the shop sell **2 protractors**?



1 mark

- (c) The bar chart shows information for **one** of the items.



Which item is this?



1 mark



2. Write the missing numbers in the boxes.



$$\square \times 9 = 234$$

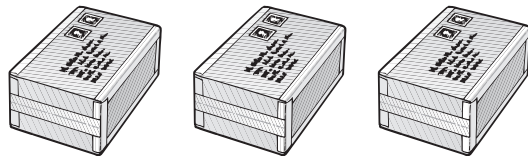
1 mark



$$81 \div \square = 27$$

1 mark

3. Lauren wants to post three parcels.



Each parcel costs **£1.30** to post.

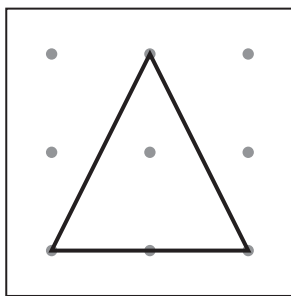
How much change should she get from **£10**?



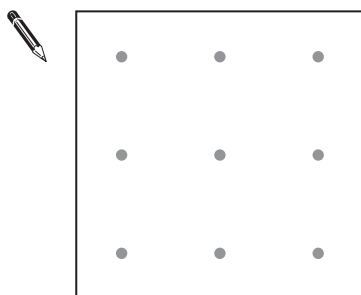
£

2 marks

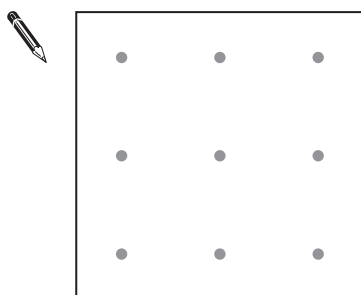
4. Here is a triangle made using the pins on a pin board.



Show how to make a **square**. Use the pins below.

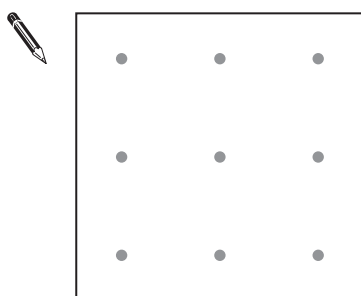


Now show how to make a **different sized square**. Use the pins below.



Now show how to make **another square** which is a **different size** to the ones you have drawn.

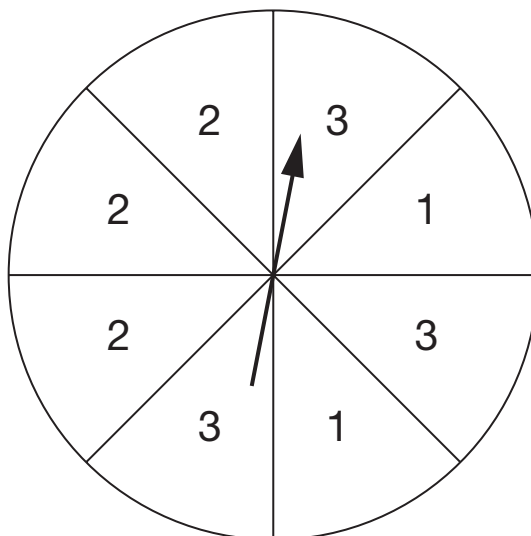
Use the pins below.



2 marks



5. Here is a fair spinner divided into 8 equal sections.



I am going to spin the pointer.

For each statement below, tick (✓) True or False.



I am **equally likely** to spin a 2 as to spin a 3

True False

I am **more likely** to spin an even number than an odd number.

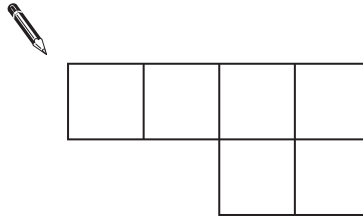
It is **impossible** that I will spin a number less than 2

It is **certain** that I will spin a number less than 4

2 marks

6. The shapes in this question are drawn on square grids.

(a) Shade $\frac{1}{2}$ of the shape below.



_____ 1 mark

(b) What **fraction** of the shape below is shaded?



_____ 1 mark



7. How many **sides** do these shapes have?

Draw lines to match each shape to the correct box.

The first one is done for you.

Shape	Number of sides
	2
Triangle	3
Hexagon	4
Octagon	5
Quadrilateral	6
	7
	8

2 marks

8. In this grid, the numbers **1, 2** and **3** are in **each row** and **each column**.

2	1	3
3	2	1
1	3	2

Now complete this grid so that the numbers **1, 2** and **3** are in **each row** and **each column**.



	3	
	1	2

2 marks

9. Complete the table to show the different times in words and on a digital clock. The first row is done for you.

	Time in words	Time on digital clock
	Half past twelve	12 : 30
	Quarter to eleven	
		10 : 05

1 mark

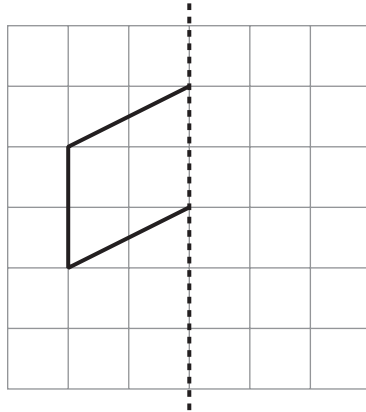
1 mark



10. The diagrams in this question are drawn on square grids.
 Reflect the shapes in the mirror lines.



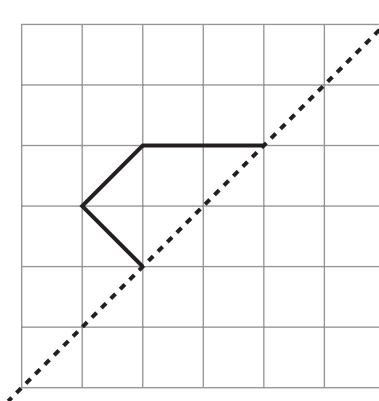
Mirror line



1 mark



Mirror line



1 mark

11. The table shows the cost of tickets for visiting a castle.

Tickets	
Family	£17.00
Adult	£6.50
Child	£4.50

Two adults and two children visit the castle.

They buy a **family** ticket.

How much **more** would it have cost to buy **two adult** tickets and **two child** tickets?



£

2 marks



12. Pupils take a test that has three different papers.

Each pupil adds their marks from all three papers to find their total mark.

The table shows how to change the total mark to a grade.

Total mark	Grade
104 or more	A
From 79 to 103	B
From 53 to 78	C
From 34 to 52	D
33 or less	E

(a) Here are Simon's marks.

Paper 1	Paper 2	Paper 3
26 marks	33 marks	18 marks

What grade did Simon get on the test?



grade _____

1 mark

(b) Here are Jenna's marks from paper 1 and paper 2

Paper 1	Paper 2	Paper 3
48 marks	35 marks	?

Jenna's grade on the test was **grade A**.

Complete the sentence below.



Jenna must have scored **at least** _____ marks on paper 3

_____ 1 mark

13. (a) Write the missing numbers in the sentences below.



2735 rounded to the **nearest hundred** is _____

_____ 1 mark



2735 rounded to the **nearest thousand** is _____

_____ 1 mark

(b) Give an example of what the missing number could be in the sentence below.



_____ rounded to the **nearest ten** is **800**

_____ 1 mark



14. Here is some information about a baby.

He was born on 2nd March 2005.

He smiled for the first time on 30th March 2005.

His first tooth appeared on 2nd December 2005.

- (a) **How many weeks** old was the baby when he smiled for the first time?



_____ weeks

_____ 1 mark

- (b) **How many months** old was the baby when his first tooth appeared?



_____ months

_____ 1 mark

15. (a) I count on in **equal steps**.

My fourth number is 42, my fifth number is 47

?			42	47
---	--	--	----	----

What is my first number?



1 mark

(b) I count on in **equal steps**.

My first number is -3, my fifth number is 5

-3		?		5
----	--	---	--	---

What is my third number?



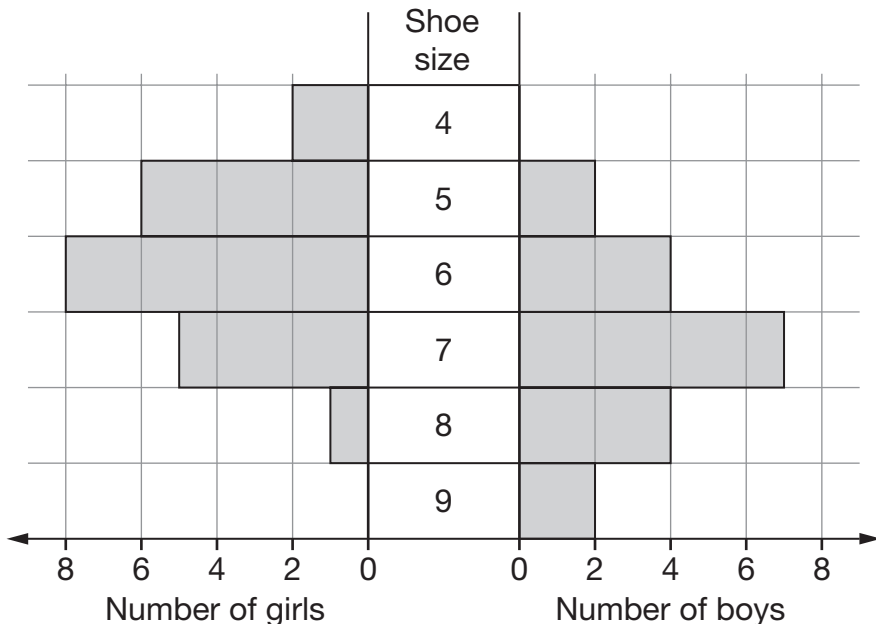
2 marks



16. Kim asked some pupils:

To the nearest whole number, what is your shoe size?

The chart shows her results.



(a) How many pupils had **size 6** shoes?



1 mark

(b) Kim asked **more girls** than boys.

How many more?



1 mark

(c) Who had the bigger **range** of shoe sizes?



Girls

Boys

Both the same

Explain your answer.



1 mark

17. Find the values of x and y

$$694 + 396 + x = 1742$$



$x = \underline{\hspace{2cm}}$

1 mark

$$y \div 13 = 34$$



$y = \underline{\hspace{2cm}}$

1 mark

18. Dan says:

‘All **factors of 70** are even numbers.’

Is he correct?



Yes

No

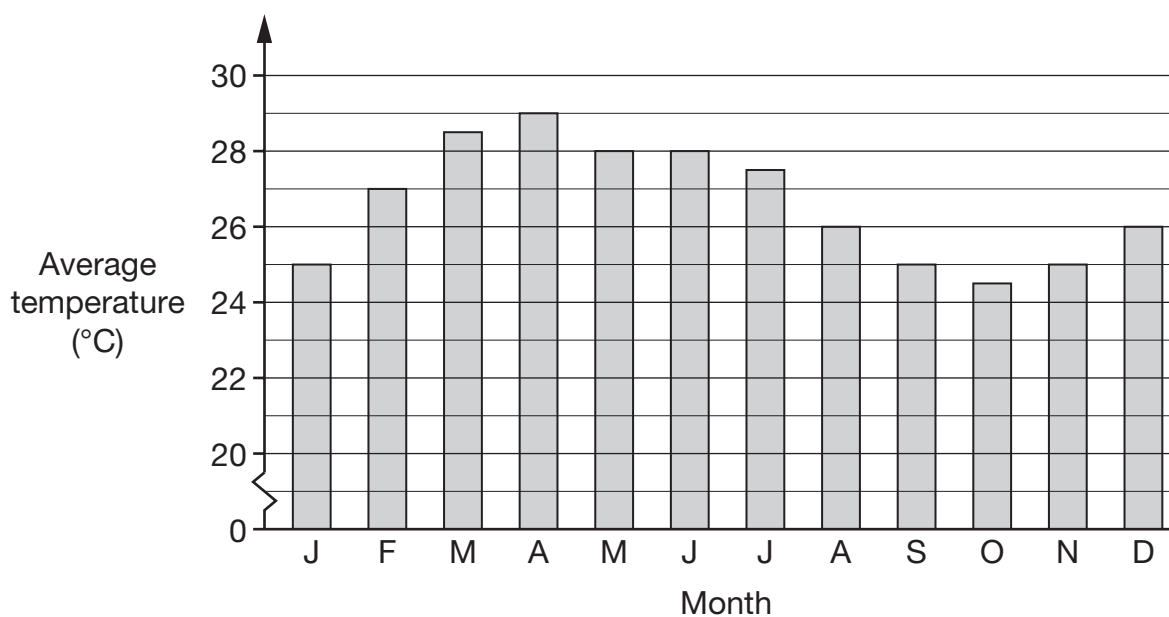
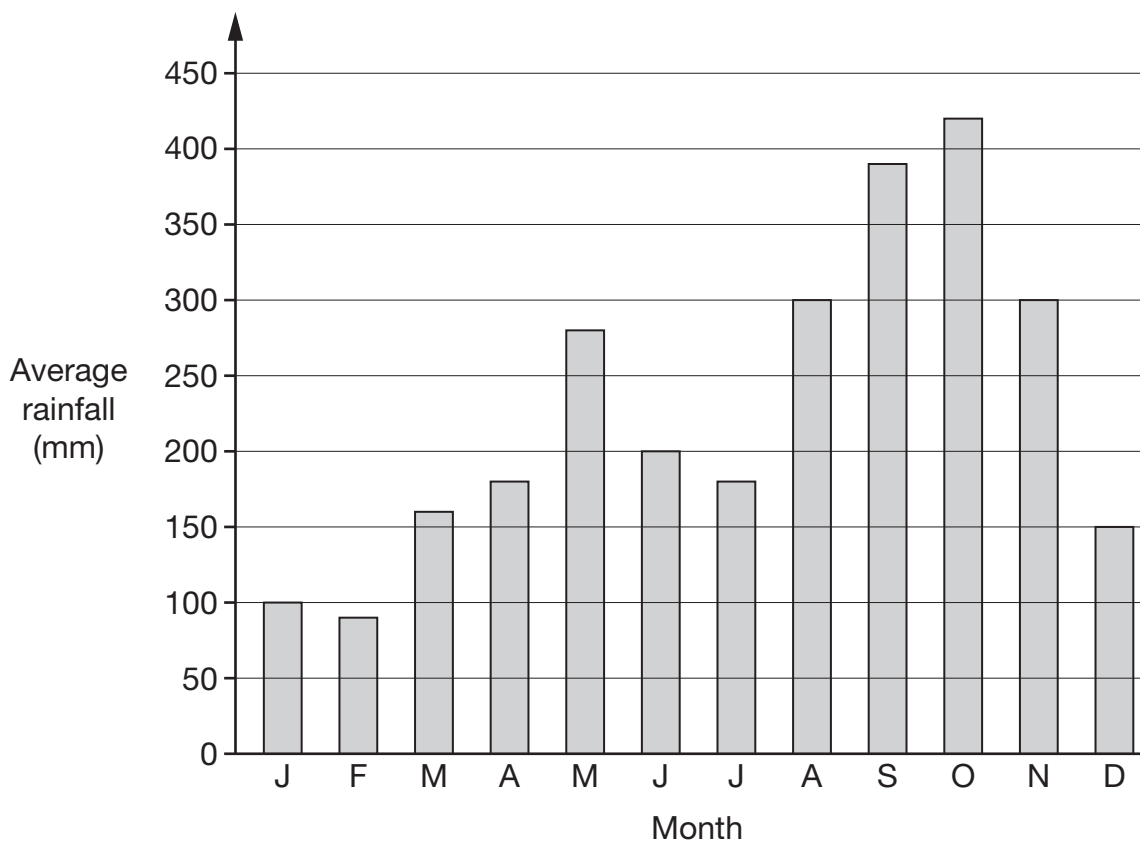
Explain your answer.



1 mark



19. The charts show information about a rainforest.



Use the charts to answer these questions.

- (a) In the month that has the **lowest** average **rainfall**,
what is the average **temperature**?



_____ °C

1 mark

- (b) In the month that has the **highest** average **temperature**,
what is the average **rainfall**?



_____ mm

1 mark

- (c) Sanjay has decided to visit the rainforest.
He does **not** like high temperatures and does **not** like high rainfall.
In which month do you think Sanjay should visit?
Put a ring round the correct month below.



January

March

April

October

December

1 mark



20. Complete the table to show what the units measure.

The first row is done for you.



	Length	Area	Volume	Mass
Centimetres	✓			
Litres				
Miles				
Grams				
Square metres				
Ounces				

2 marks

21. Here are the prices of doughnuts at two different shops.

Shop A	Shop B
3 doughnuts for £2	5 doughnuts for £3.50

I want to buy **15** doughnuts.

In which shop are the doughnuts **cheaper**?

You **must** show your working.



Tick (✓) your answer.



Shop A

Shop B

2 marks



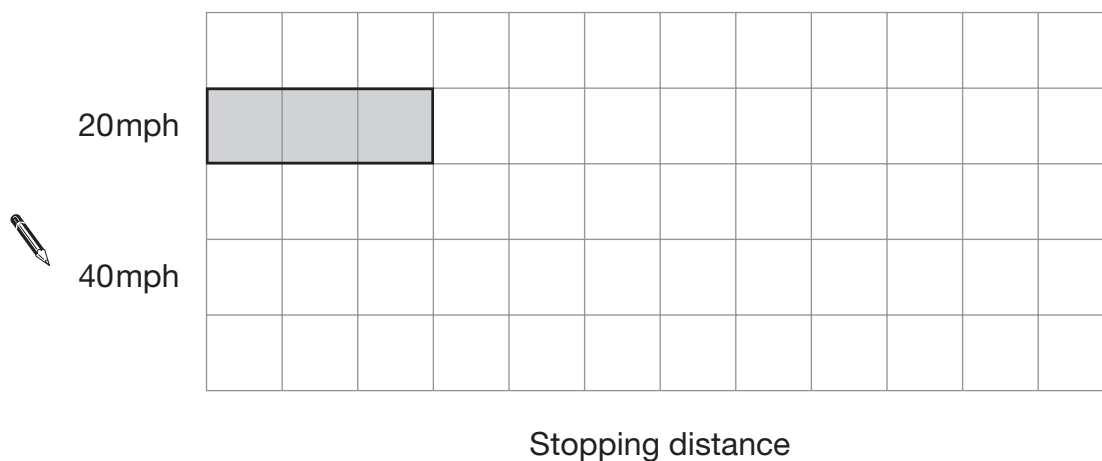
22. The table shows the stopping distances for a car at different speeds.

Speed	Stopping distance
20mph	12 metres
40mph	36 metres
60mph	72 metres

(a) Look at the square grid below.

It shows the bar for the stopping distance at 20mph.

Use the same scale to draw the bar for the stopping distance at **40mph**.



1 mark

(b) The bar for the stopping distance at 60mph will not fit on the grid.

How many squares long should the bar be?

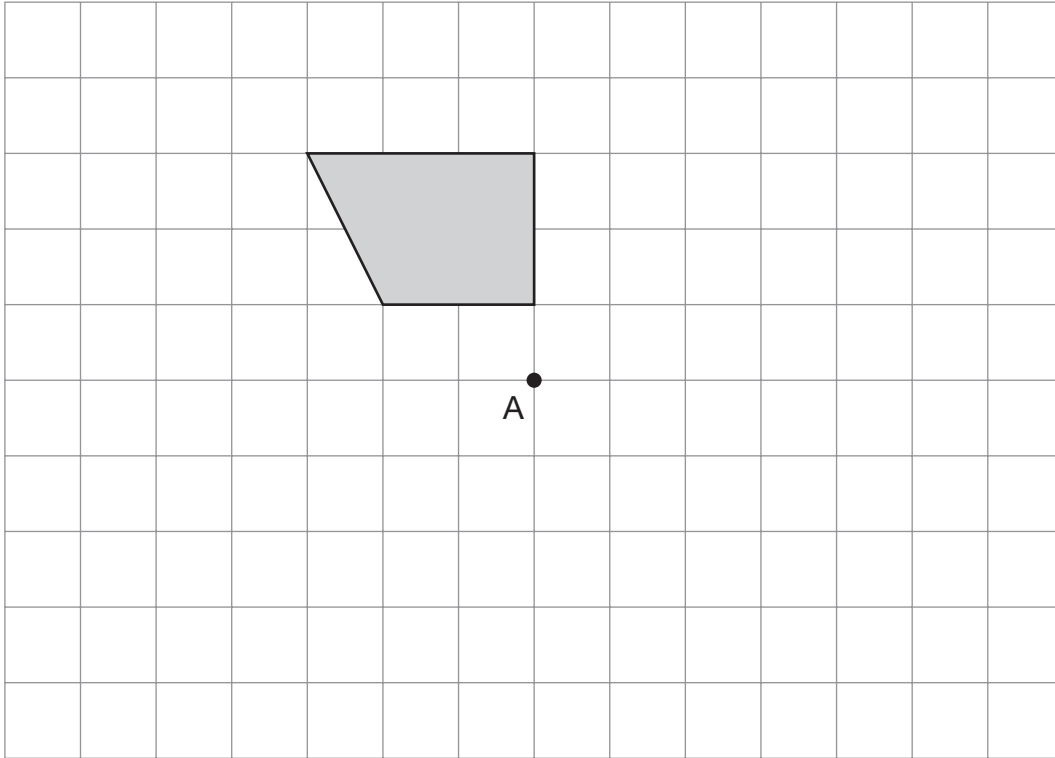


1 mark

23. Here is a shaded shape drawn on a square grid.

Rotate the shape 180° about point A.

Draw the shape in its new position on the grid.



2 marks



24. Use $a = 7$ and $b = 28$ to work out the value of these expressions.

The first one is done for you.

$$a + b = \underline{35}$$



$$ab = \underline{\hspace{2cm}}$$

1 mark



$$\frac{b}{a} = \underline{\hspace{2cm}}$$

1 mark

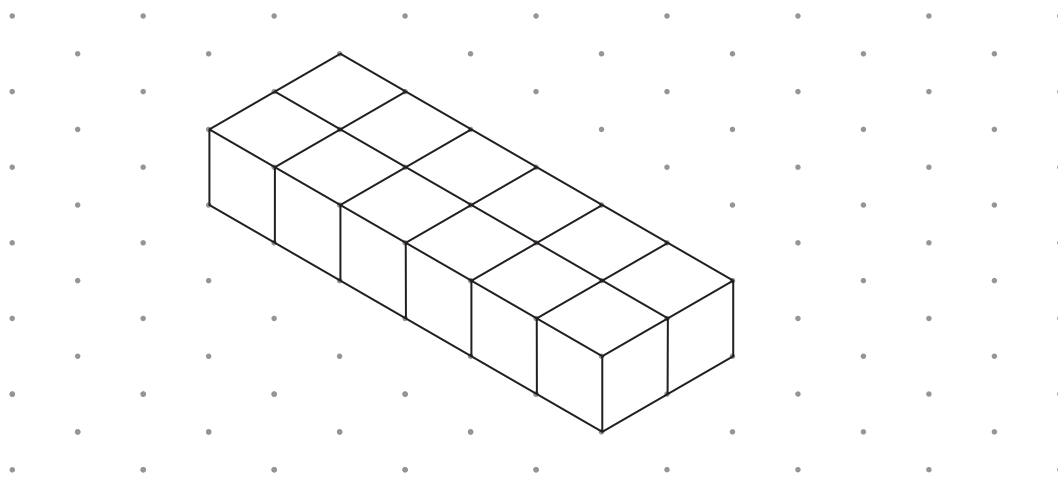


$$(a + b)^2 = \underline{\hspace{2cm}}$$

1 mark

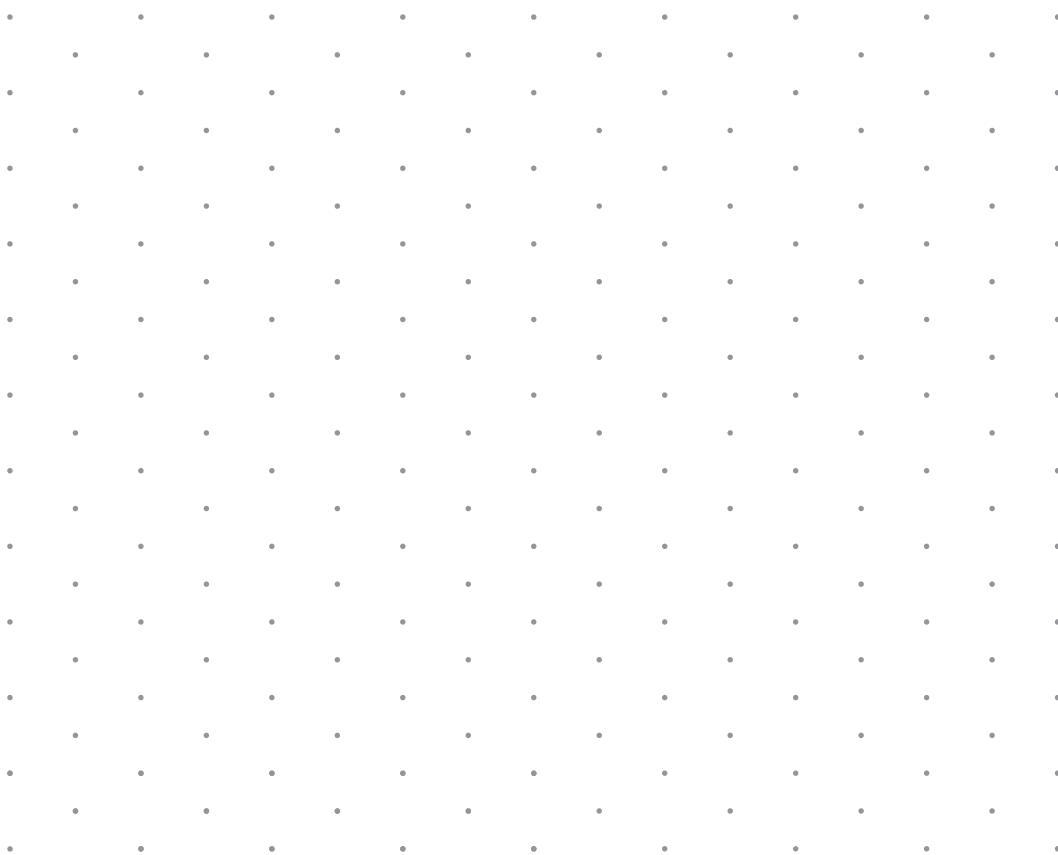
25. Look at the cuboid drawn on the grid.

It is made from **12 cubes**.



Isometric grid

On the grid below, draw a **different** cuboid made from 12 cubes.

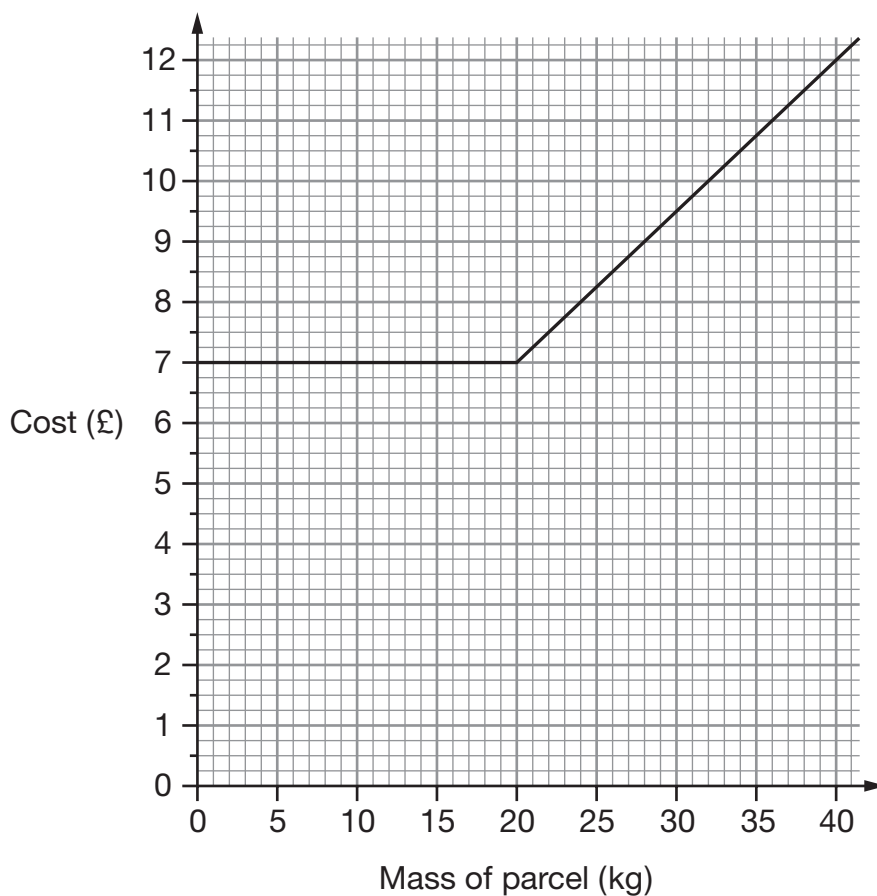


Isometric grid

2 marks



26. The graph shows how much a company charges to deliver parcels.



(a) Use the graph to complete the sentences below.



The company charges exactly £ _____ for parcels up to _____ kg.

_____ 1 mark



Then for **each** extra kilogram the company charges another _____.

_____ 1 mark

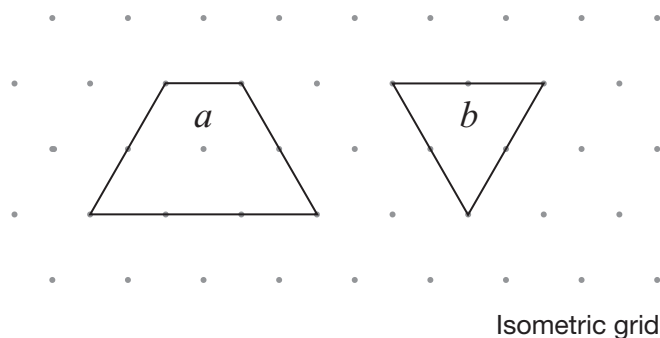
(b) Altogether, how much would the company charge to deliver two parcels, one of **15kg** and one of **37kg**?



£

_____ 1 mark

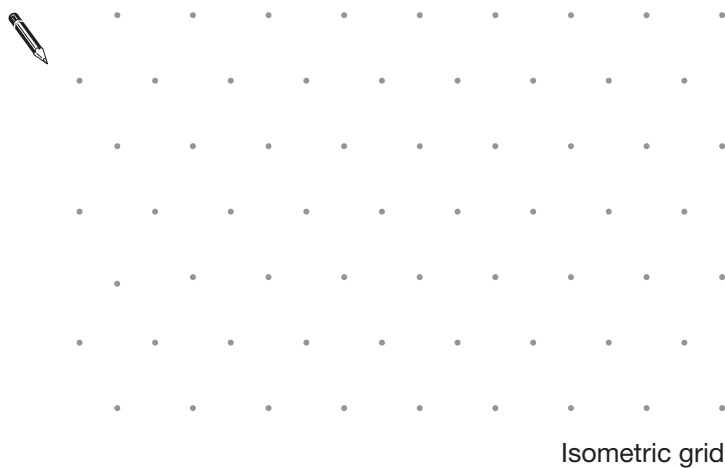
27. The diagram below shows a trapezium and an equilateral triangle.



The **trapezium** has area a

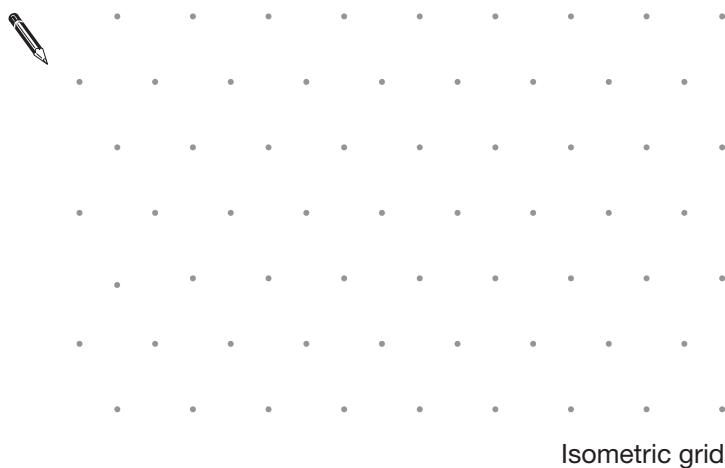
The **triangle** has area b

- (a) On the grid below, draw a shape with area $a + 2b$



1 mark

- (b) On the grid below, draw a shape with area $a - b$



1 mark



END OF TEST