Ma

KEY STAGE 3

TIER 3–5

2005

Mathematics test

Paper 1

Calculator **not** allowed

Please read this page, but do not open your booklet until your teacher tells you to start. Write your name and the name of your school in the spaces below.

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 and tracing paper (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.

For marker's use only

Total marks	

QCA/05/1429

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. The table shows the average heights of boys and girls of different ages.

Age (years)	Average height for **boys** (cm)	Average height for **girls** (cm)
7	122	121
9	134	133
11	143	144
13	155	155
15	169	162

(a) What is the average height for **girls** aged **9 years old**?

..... cm

1 mark

(b) A boy and a girl are both **15 years old**.

Their heights are average for their age.

How much taller is the boy than the girl?

..... cm

1 mark

2. Write numbers in the boxes to make correct calculations.

You must use **different numbers** each time.

□ × □ = 24

□ × □ = 24

□ × □ = 24

. . . .

. . . .

2 marks

---

3. (a) Write a number that is **bigger than one thousand** but **smaller than one thousand one hundred**.

Write the number in figures not words.

. . . .

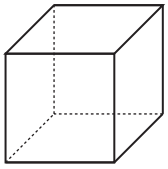
1 mark

(b) Now write a **decimal** number that is **bigger than zero** but **smaller than one**.

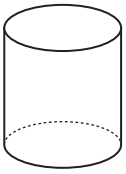
. . . .

1 mark

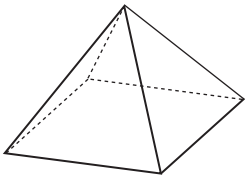
4. Look at the diagrams showing 3-D shapes.



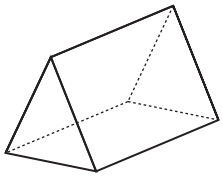
A



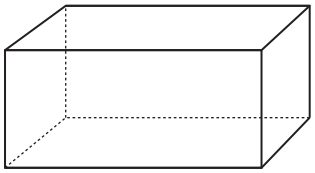
B



C



D



E

(a) One of the shapes has **one square face** and **four triangular faces**.

Write the letter of this shape.

....

1 mark

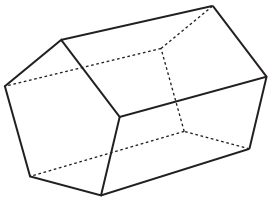
(b) Two of the shapes have **six faces**.

Write the letters of these shapes.

..... and ....

1 mark

(c) Now look at this diagram showing another 3-D shape.

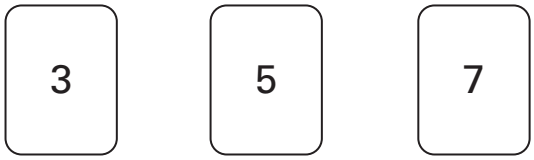


How many faces does the shape have?

..... faces . . . .

1 mark

5. (a) You can make six different numbers using these three digit cards:



Complete the list to show the six different numbers.

357
375

. . . .
1 mark

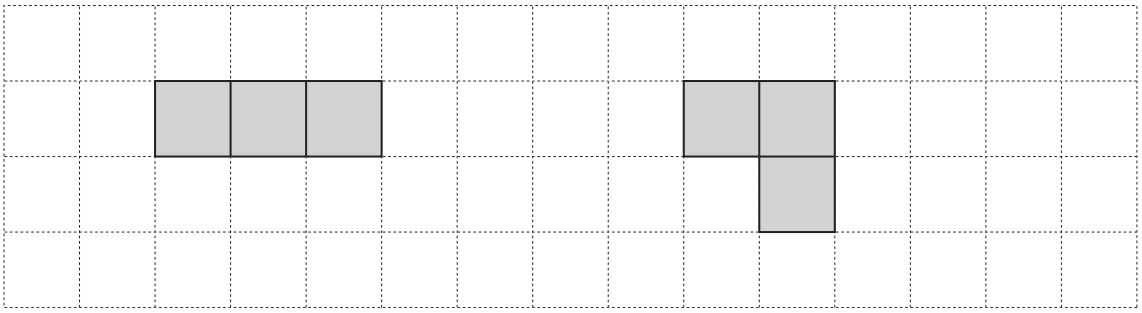
(b) From the list, write down the **smallest** number and the **biggest** number, then **add** them together.

. . . .
1 mark

. . . . . .

. . . .
1 mark

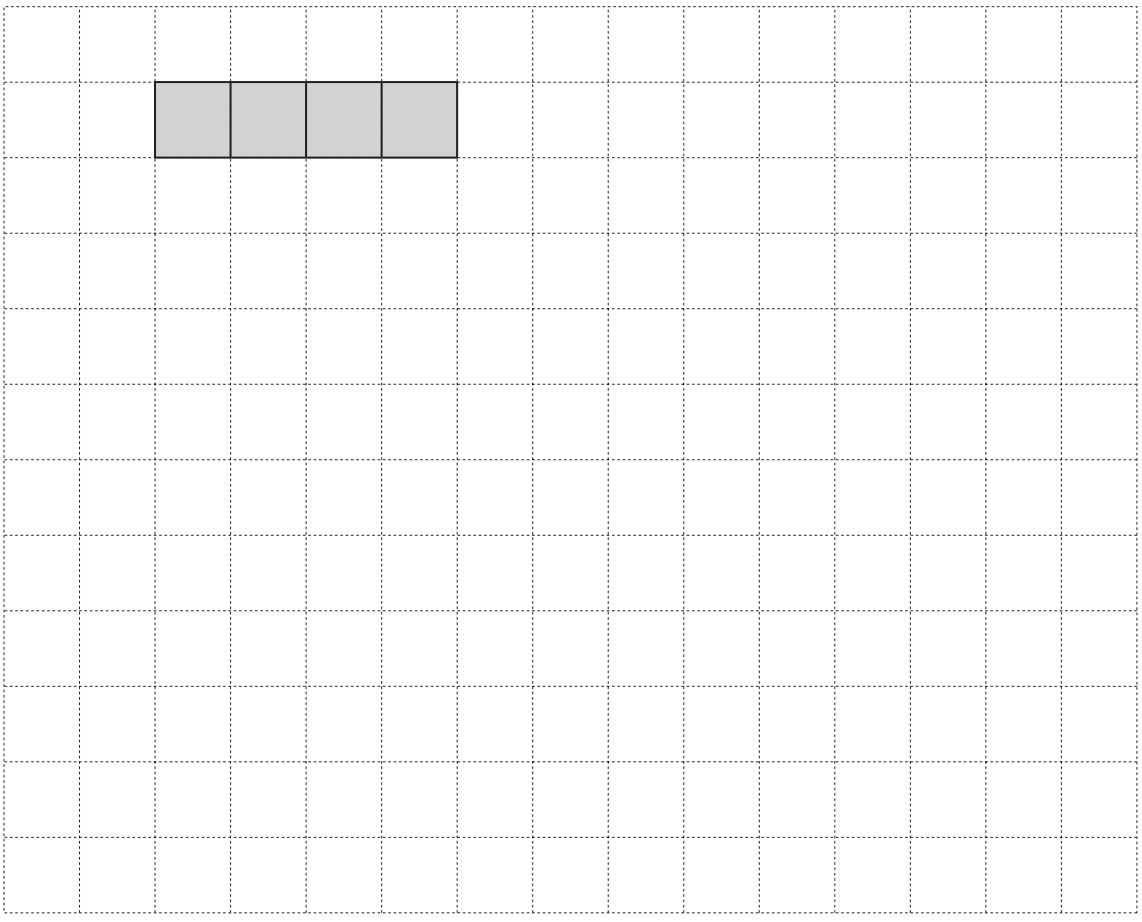
6. Without reflections or rotations,
three squares can join side-to-side to make only **two different** shapes.



Square grid

Without reflections or rotations,
four squares can join side-to-side to make only **five different** shapes.

Complete the five different shapes on the grid below.
The first one is done for you.



Square grid

. . . . .

. . . . .

. . . . .

3 marks

7. Here are the prices of food and drinks in a café.

Food		Drinks	
Pizza	£1.40	Tea	65p
Burger	95p	Coffee	90p
Sandwich	£1.20	Cola	80p
Toast	90p	Juice	£1.00

(a) Sally wants to buy **one** item of **food** and **one drink**.

What is the **least** amount of money she can pay?

£ . . . .

1 mark

(b) Lee buys **one** item of **food** and **one drink**.

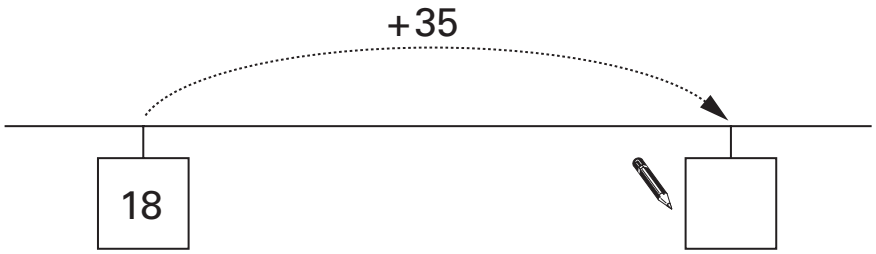
He pays with a **£5 note** and gets **£2.60 change**.

What did Lee buy?

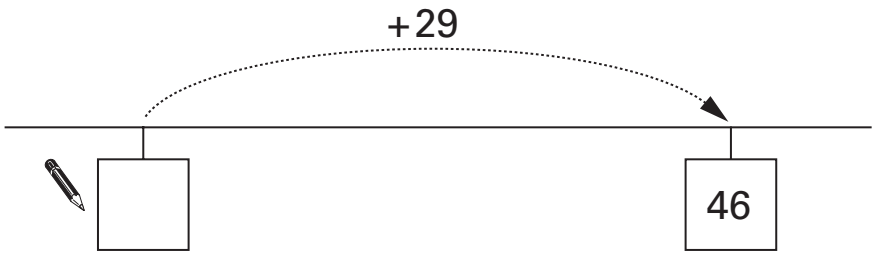
..... and ....

2 marks

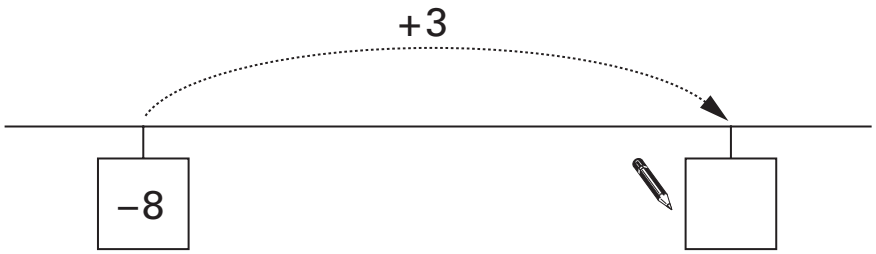
8. Write the missing numbers on the number lines.



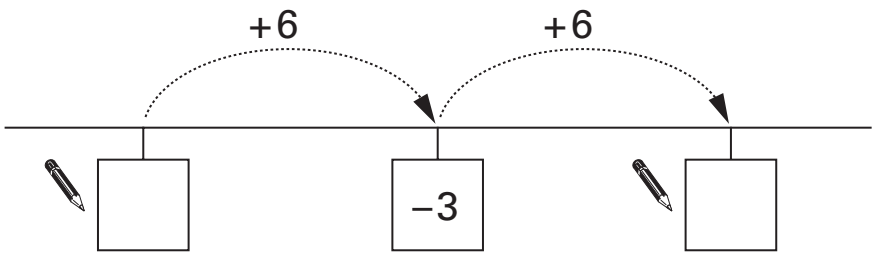
. . . . .
1 mark



. . . . .
1 mark



. . . . .
1 mark

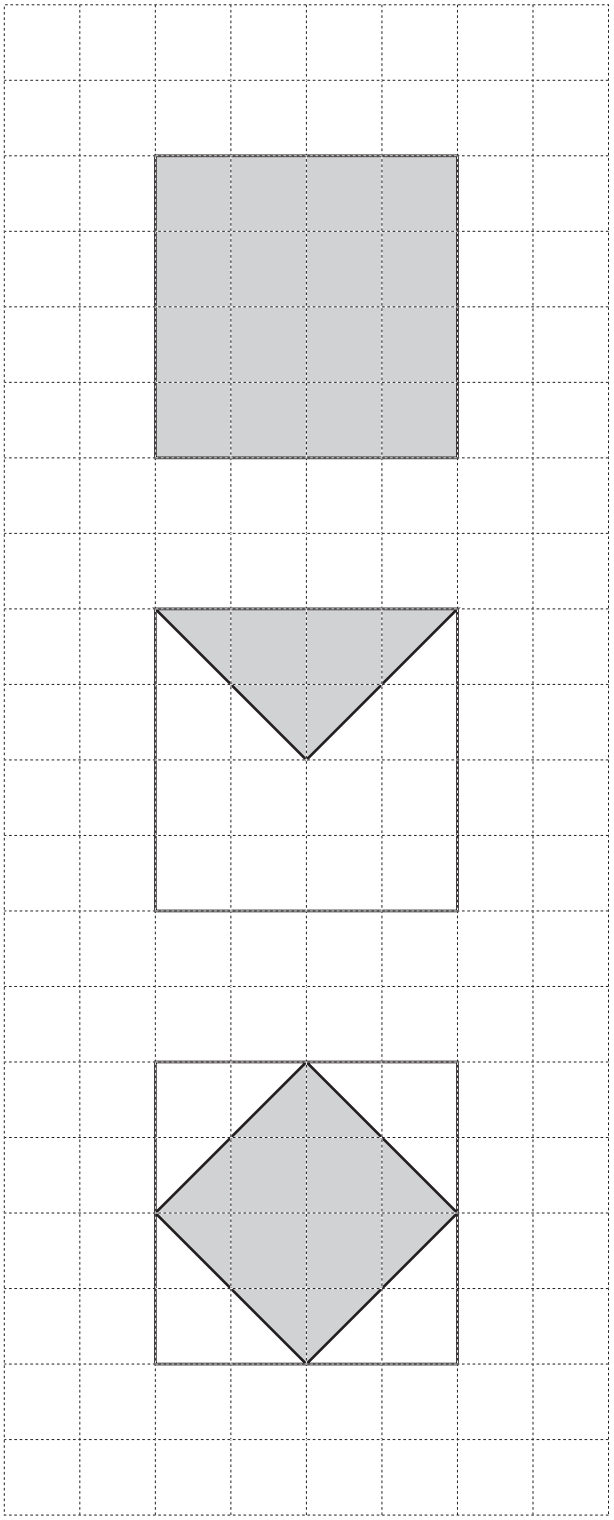


. . . . .

. . . . .
2 marks

9. Look at the diagrams on the centimetre square grid.

Work out the **area** that is **shaded** on each diagram.



..... cm^2

..... cm^2

..... cm^2

. . . .

. . . .

2 marks

10. (a) Add together **3.7** and **6.5**

. . . . . .

1 mark

(b) Subtract **5.7** from **15.2**

. . . . . .

1 mark

(c) Multiply **254** by **5**

. . . . . .

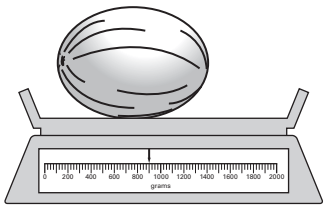
1 mark

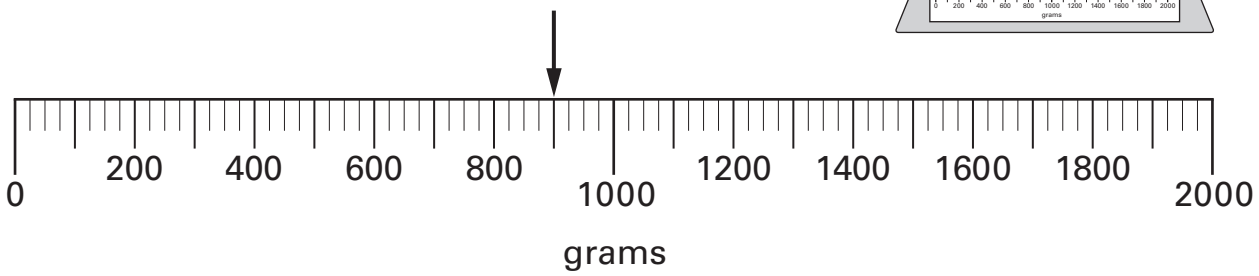
(d) Divide **342** by **6**

. . . . . .

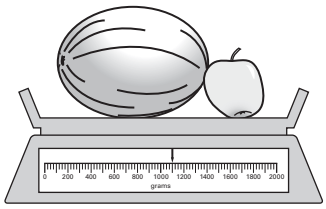
1 mark

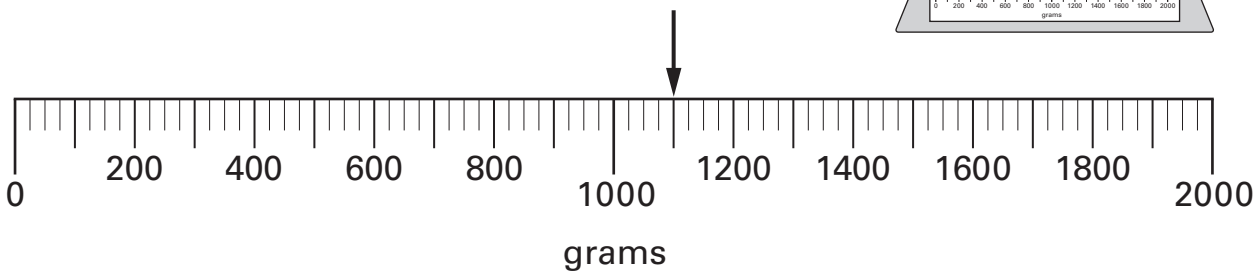
11. (a) I weigh a melon.





Then I weigh an apple and the melon.





Write the missing numbers in the sentences below.

The **melon** weighs ..... grams. . . . .
1 mark

The **apple** weighs ..... grams. . . . .
1 mark

(b) **How many grams** are in one **kilogram**?

Put a ring round the correct number below.

1 10 100 1000 10 000 . . . . .
1 mark

12. (a) There are two children in the Smith family.

The **range** of their ages is **exactly 7 years**.

What could the ages of the two children be?

Give an example.

..... and ....

1 mark

(b) There are two children in the Patel family.

They are twins of the **same age**.

What is the **range** of their ages?

..... years . . . .

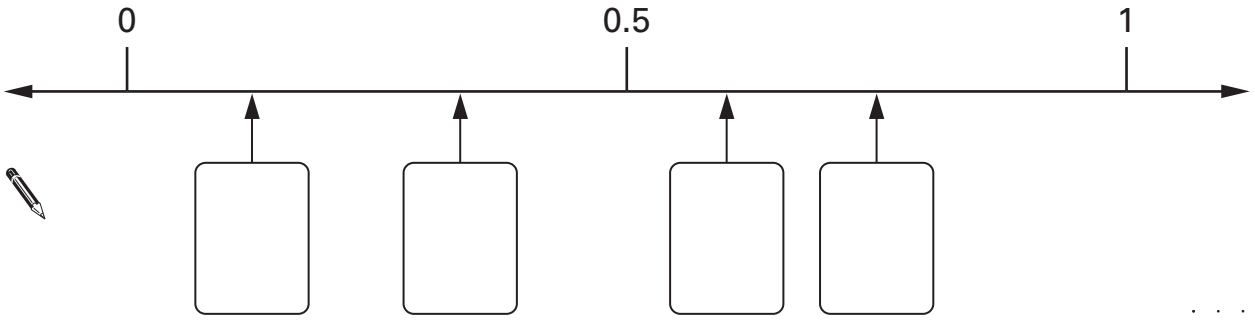
1 mark

13. Here are four fractions.

$\frac{3}{4}$ $\frac{1}{8}$ $\frac{1}{3}$ $\frac{3}{5}$

Look at the number line below.

Write each fraction in the correct box.



. . . .

. . . .

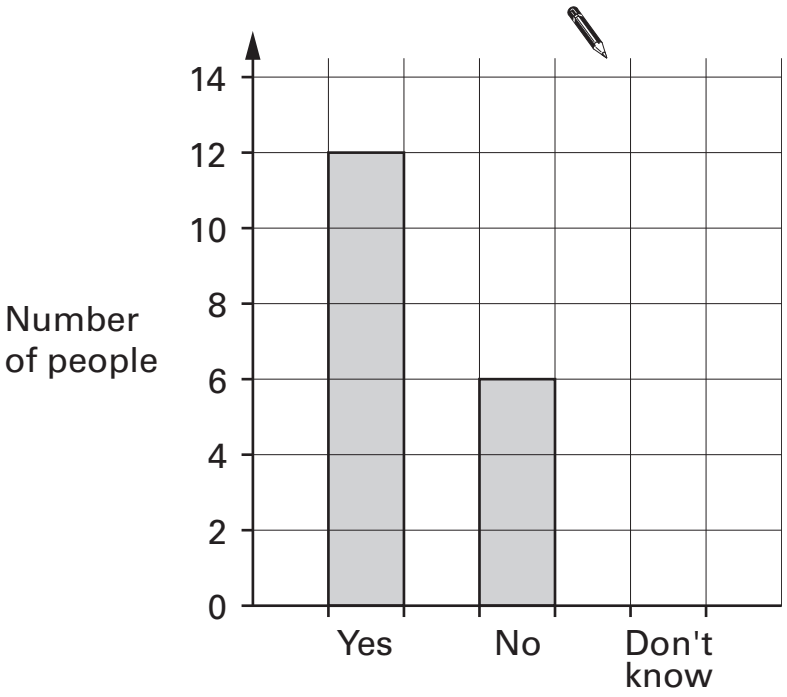
2 marks

14. (a) Jackie asked **27** people:

'Do you like school dinners?'

The bar chart shows her results for 'Yes' and 'No'.

Complete the bar chart to show her result for 'Don't know'.



1 mark

(b) This pictogram also shows her results for 'Yes' and 'No'.

Complete the pictogram to show her result for 'Don't know'.

Yes	● ● ● ●
No	● ●
Don't know	

1 mark

15. (a) Complete the sentences.

..... **out of 10** is the same as **70%**

. . . .
1 mark

10 out of 20 is the same as .....**%**

. . . .
1 mark

(b) Complete the sentence.

..... **out of** ..... is the same as **5%**

. . . .
1 mark

Now complete the sentence using **different** numbers.

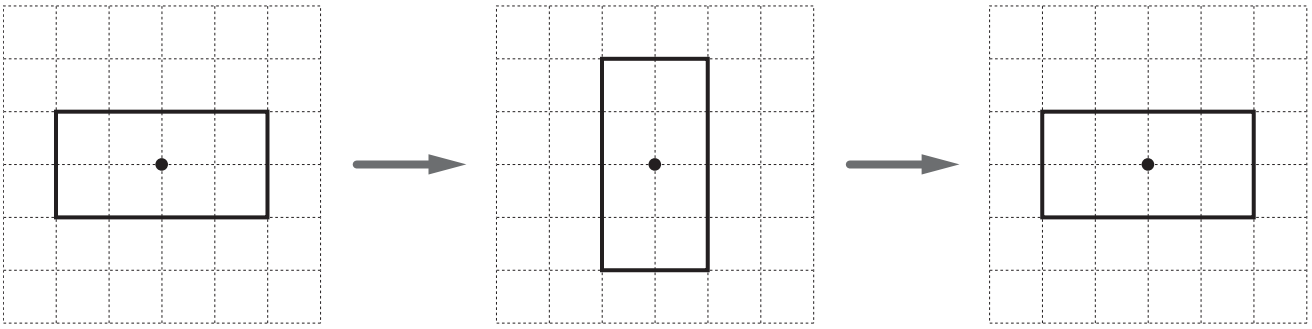
..... **out of** ..... is the same as **5%**

. . . .
1 mark

16. The shapes below are drawn on square grids.

The diagrams show a rectangle that is rotated, then rotated again.

The centre of rotation is marked •

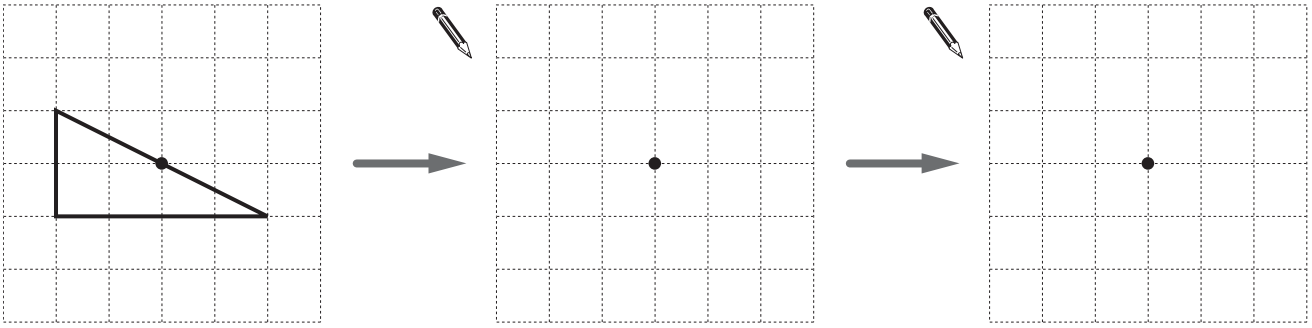


Rotate 90°clockwise

Rotate another 90°clockwise

Complete the diagrams below to show the triangle when it is rotated, then rotated again.

The centre of rotation is marked •



Rotate 90°clockwise

Rotate another 90°clockwise

. . . .

. . . .

2 marks

17. I am thinking of a number.

My number **multiplied by 15** is **315**

My number **multiplied by 17** is **357**

What is my number?

..... 2 marks

18. Complete the statements below.

When x is 8 , $4x$ is ..... 1 mark

When x is ..... , $4x$ is 48 1 mark

When x is 8 , ... is 48 1 mark

19. (a) Look at these three numbers.

9	11	10

Show that the **mean** of the three numbers is **10**

. . . .
1 mark

Explain why the **median** of the three numbers is **10**

. . . .
1 mark

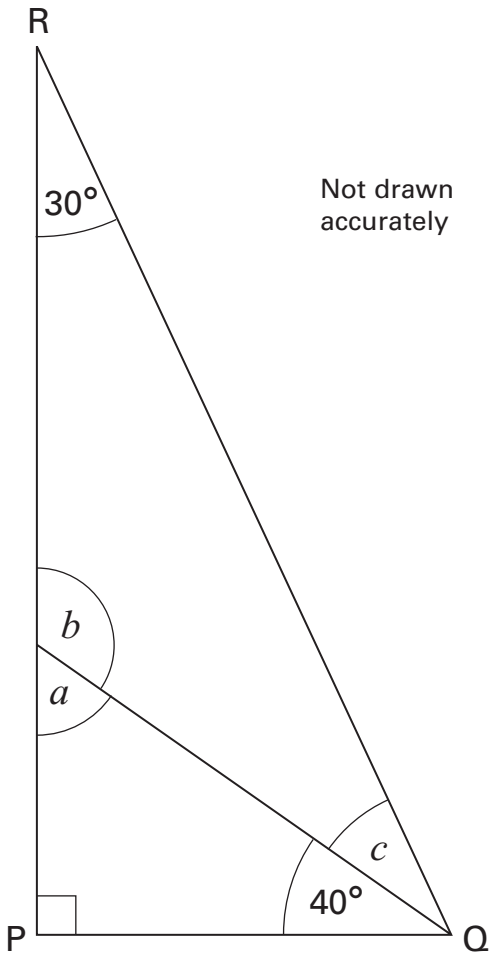
(b) Four numbers have a mean of 10 and a median of 10, but **none** of the numbers is 10

What could the four numbers be?

Give an example.

. . . .
1 mark

20. The diagram shows triangle PQR.



Work out the sizes of angles a, b and c

. . . .
1 mark

. . . .
1 mark

a = ... ° b = ... ° c = ... °

. . . .
1 mark

21. Solve these equations.

$3y + 1 = 16$

$y =$ ....
1 mark

$18 = 4k + 6$

$k =$ ....
1 mark

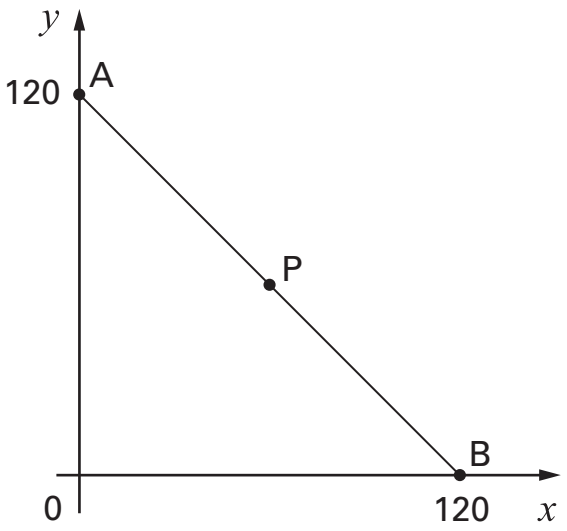
22. Work out

374×23

. . . .

....
2 marks

23. P is the **midpoint** of line AB.



What are the coordinates of point **P**?

P is (..... , ...)

. . . .
1 mark

END OF TEST

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