AQA ❧ Mock Test Papers
Paper2 - Test1

GCSE Mathematics

Foundation tier -- Paper2

F

Morning

1 hour 30 minutes

For this paper you must have:
- ☐ calculator
- ☐ mathematical instrument

Instructions

Use black ink or black ball-point pen.
Draw diagrams in pencil. Fill in the boxes at the bottom of this page.
Answer all questions.
You must answer the questions in the spaces provided.
Do not write outside the box around each page or on blank pages.
Do all rough work in this book.
In all calculations, show clearly how you work out your answer.

Information

The marks for questions are shown in brackets.
The maximum mark for this paper is 80.
You may ask for more answer paper, graph paper and tracing paper.
These must be tagged securely to this answer book.

Advice

In all Calculations, show clearly how you workout your answer

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Answer all questions in the spaces provided.

1 (a)   Here is a number line.

```
 ├──┬──┬──┬──┬──┬──┬──┤
 0           40       X    80
```

What number is at X?

[1 mark]

Answer _____

1 (b)   Here is a different number line.

```
 ├──┬──┬──┬──┬──┬──┬──┤
 -15        Y     0         15
```
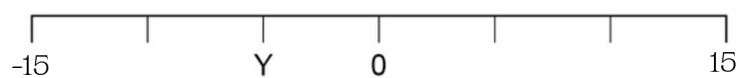
What number is at Y?

[1 mark]

Answer _____
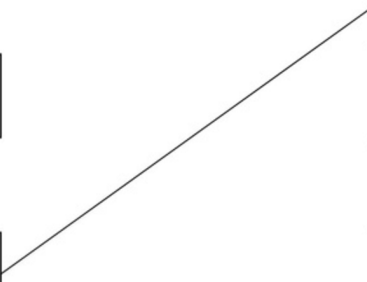
2   Match each description on the left with a number on the right.

One has been done for you.

[4 marks]
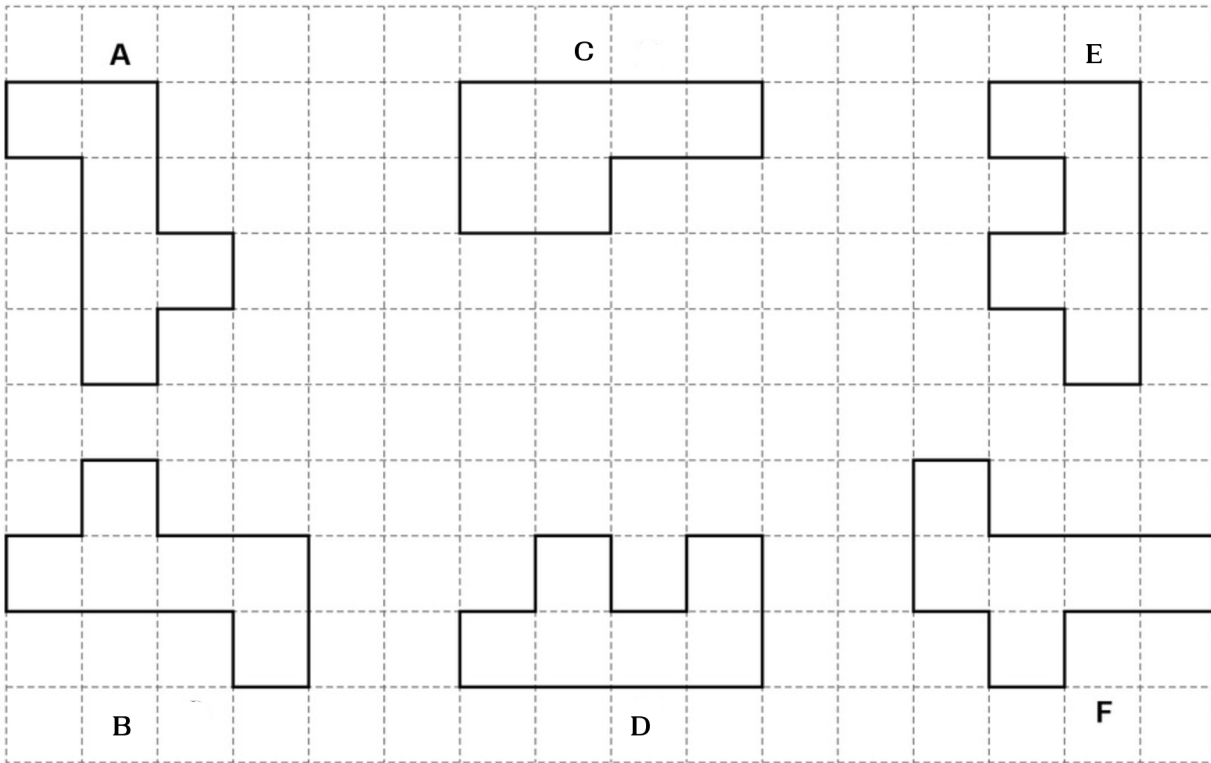
| | 48 |

| A square number | | 49 |

| A multiple of 12 | | 6 |

| A prime number | | 64 |

| A cube number | | 7 |

| A triangular number | | 10 |

Turn over for the next question

6

3   Here are some shapes.

Each shape has an area of six square centimetres.

3   (a)   Which has the bigger perimeter, shape A or shape B?

You must show the lengths of both perimeters.

[2 marks]

Answer _____

3   (b)   Which shape is congruent to shape A?
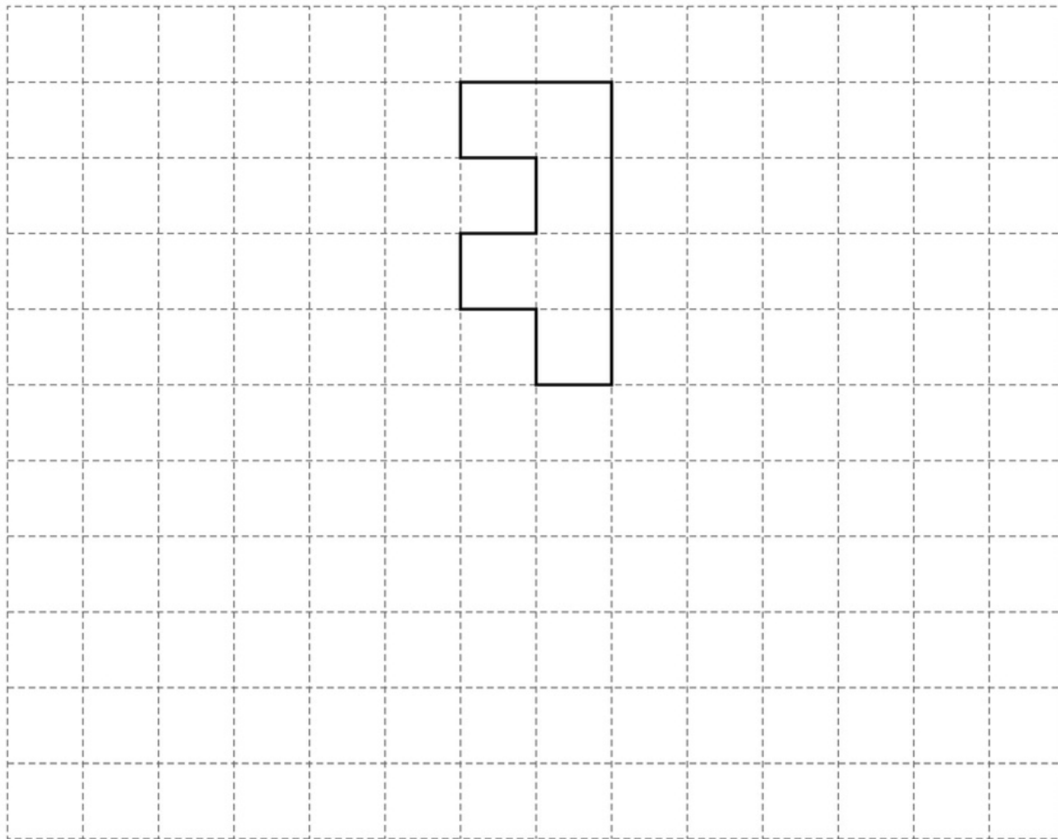
[1 mark]

Answer _____

3 (c) Which two shapes fit together to make a rectangle?
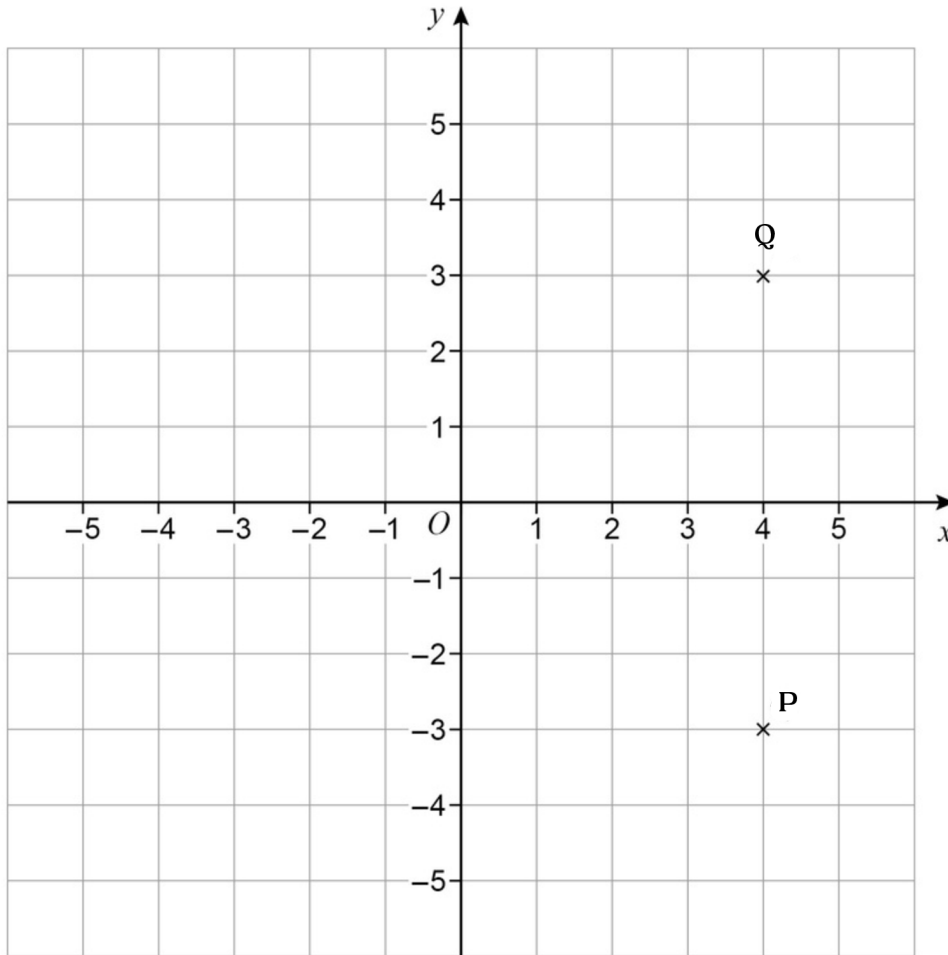
[1 mark]

Answer _____ and _____

3 (d) On this grid draw a reflection of shape C.
Show your mirror
line.

[2 marks]

Turn over for the next question

6

Turn over ▶

4   Points P and Q are shown on the grid.

4 (a)   Write down the coordinates of P .

[1 mark]

Answer (_____ , _____)

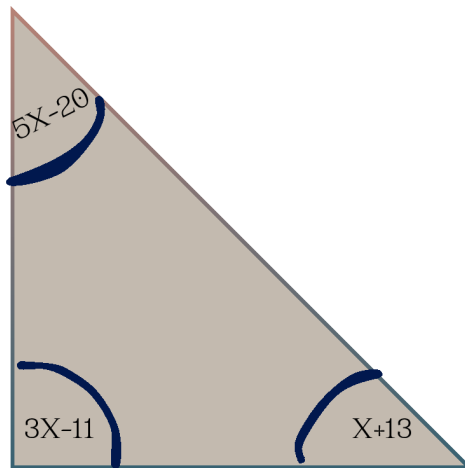4 (b)   Angle PQR is a right angle. Work out possible coordinates for R.

[1 mark]

Answer(_____ , _____)

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5 (a)   Write down all the factors of 50

[2 marks]

_____

_____

_____

_____

Answer _____

5 (b)   Here is triangle ABC.

Show clearly that triangle ABC is a right-angled triangle.

[4 marks]

_____

_____

_____

_____

_____

_____

_____

_____

Answer _____

8

Turn over ▶

6   Bethany and Ivy share some sweets in the ratio 5:7.

Ivy gives 3 sweets to Bethany and now the ratio is 7:8.

How many sweets did each have at the start?

[2 marks]

_____

_____

_____

_____

_____

7   Here are four number cards:
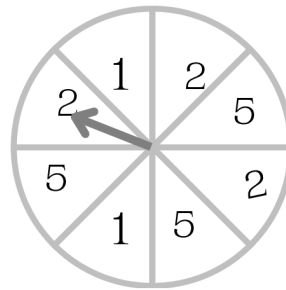
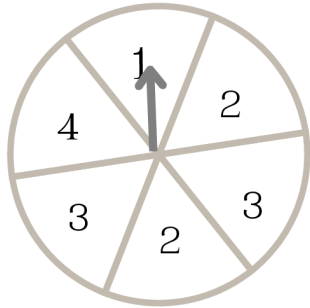| 7 | | 8 | | 9 | | 4 |

[1 mark]

(a)   Write down the largest four-digit number that can be made using each card only once.

_____

[1 mark]

(b) Write down the smallest four-digit even number that can be made using each card only once.

_____

8 (a) Here are two fair spinners. In an experiment, each spinner is spun once and the product of the numbers on each spinner is calculated.

[2 marks]

Draw a sample space diagram to show all possible outcomes of this experiment

8 (b) What is the probability that the product is greater than 8?

[2 marks]

Turn over for the next question

8

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9   Three boxes contain counters.

There are 84 counters in total.

The total number of counters in box A and box B is 54

The difference between the number of counters in box A and box C is 10

Work out the number of counters in each box.

[3 marks]

| Box A | Box B | Box C |

Box A =   Box B =   Box C =

10   One of the 75 people is chosen at random.

<div style="border:1px solid">
P(used social media) is more than 0.63
</div>

What is the smallest possible number of people who used social media?

[2 marks]

Answer _____

Turn over for the next question

11 (a)   Charlie earns £10.50 per hour.

He works for

24 hours each week

48 weeks each year.

He pays tax if he earns more than £10 000 per year.

Does Charlie pay tax?   You must show your working.

[2 marks]

_____

_____

_____

_____

Answer £ _____

11 (b)   A TV series has eight episodes.

Seven episodes are each 30 minutes long.

One episode is 1 hour 15 minutes long.

Work out the total length of the series.

Give your answer in hours and minutes.

[3 marks]

_____

_____

_____

_____

_____

Answer _____ hours _____ minutes

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12 (a)   There are 1500 books in a box.

$\dfrac{3}{5}$ of the books are green.

How many are green?

[2 marks]

_____

_____

_____

Answer _____

12 (b)   There are black pens and blue pens in the box.

The ratio of   black : blue   is   2 : 3

What fraction of the pens are black ?

[1 mark]

_____

_____

_____

Answer _____

12 (c)   There are some calculators in the box.

250 are scientific.

50 are not.

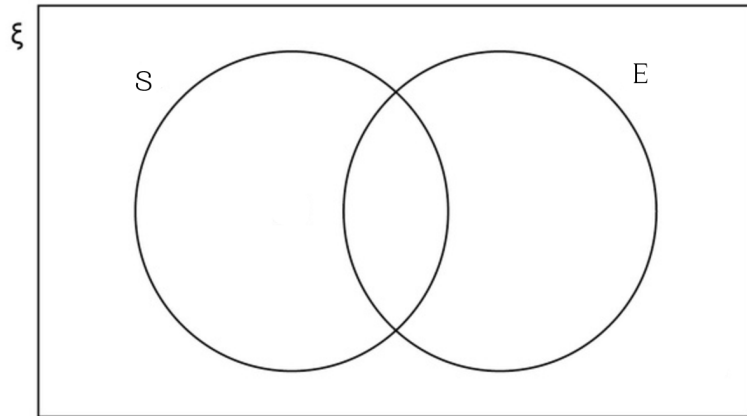What percentage of the calculators are scientific?

[2 marks]

_____

_____

_____

Answer _____ %

10

Turn over ▶

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13   Here is a Venn diagram.

ξ = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12}

S = square numbers

E = even numbers

ξ

13 (a)   Complete the Venn diagram.   [3 marks]

_____

13 (b)   One of the numbers is chosen at random.   [1 mark]

Write down P (S ∩ E)

Answer _____

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14   Which sequence is a geometric progression? Circle your answer.

  1   2   3   4   1   2   4   7

  1   2   4   8   1   2   3   5

[1 mark]

Turn over for the next question

5

15   Marcus runs 400 metres in 1 minute.

He assumes he can run any distance at the same rate.

He says, "I would run 10 000 metres in 25 minutes."

Tick a box to show whether his time to run 10 000 metres is likely to be accurate.

☐ No, the time will be longer

☐ Yes, the time will be 25 minutes

☐ No, the time will be shorter

☐ Give working and a reason to support your answer.

[2 marks]

16   40 is increased by 15%

64 is decreased by 25%

Which answer is bigger?

Show how you decide.

[4 marks]

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Answer _____

Turn over for the next question

6

Turn over ▶

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17   Factorise   8a + 16b

[1 mark]

Answer _____

18   Write down all the integers that satisfy the inequality

$$-3 \leqslant x < 3.5$$

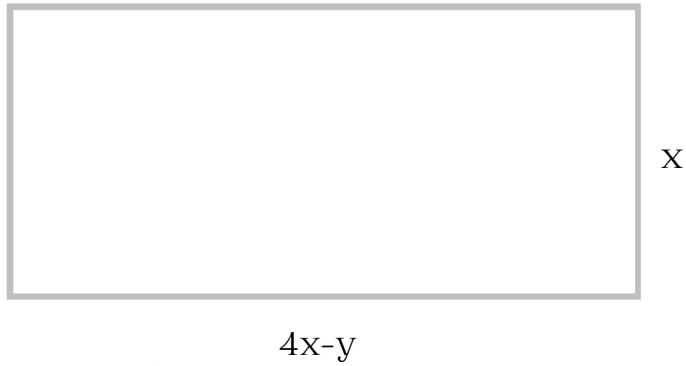[2 marks]

Answer _____

19   Expand and simplify (6x – 1)(x + 4)

[2 marks]

Answer _____

20   An adult ticket for a museum is £20.00

A child ticket costs 50% of the price of an adult ticket.

Mrs Davis and her three children go to the museum.

Mrs Davis has a voucher that reduces the total entry cost by 10

Mrs Davis pays with three £20 notes.

Work out how much change Mrs Davis will receive.

[4 marks]

Answer _____

21   Here is a rectangle

x

$4x-y$

21 (a)   Write an expression for the area of the rectangle.

Give your answer in its simplest form.

[2 marks]

21 (b)   Write an expression for the area of the rectangle.   [3 marks]

Give your answer in its simplest form.

Answer

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22   Claire earns £153 for 15 hours of work.   [3 marks]
      Claire receives a pay rise of 5%.
      Work out Claire's pay per hour after the pay rise.

Answer _____

Turn over for the next question

8

23   A coin is rolled onto a grid of squares. It lands randomly on the grid.
     To win, the coin must land completely within one of the squares.
     Eeshu and Marcus each roll the coin a number of times and record their results

	Number of Wins	Number of losses
Eeshu	28	44
Marcus	18	72

[2 marks]

23 (a) Work out two different estimates for the probability of winning.

Answer _____

23   (b) Which of your estimates is the better estimate for the probability of winning?
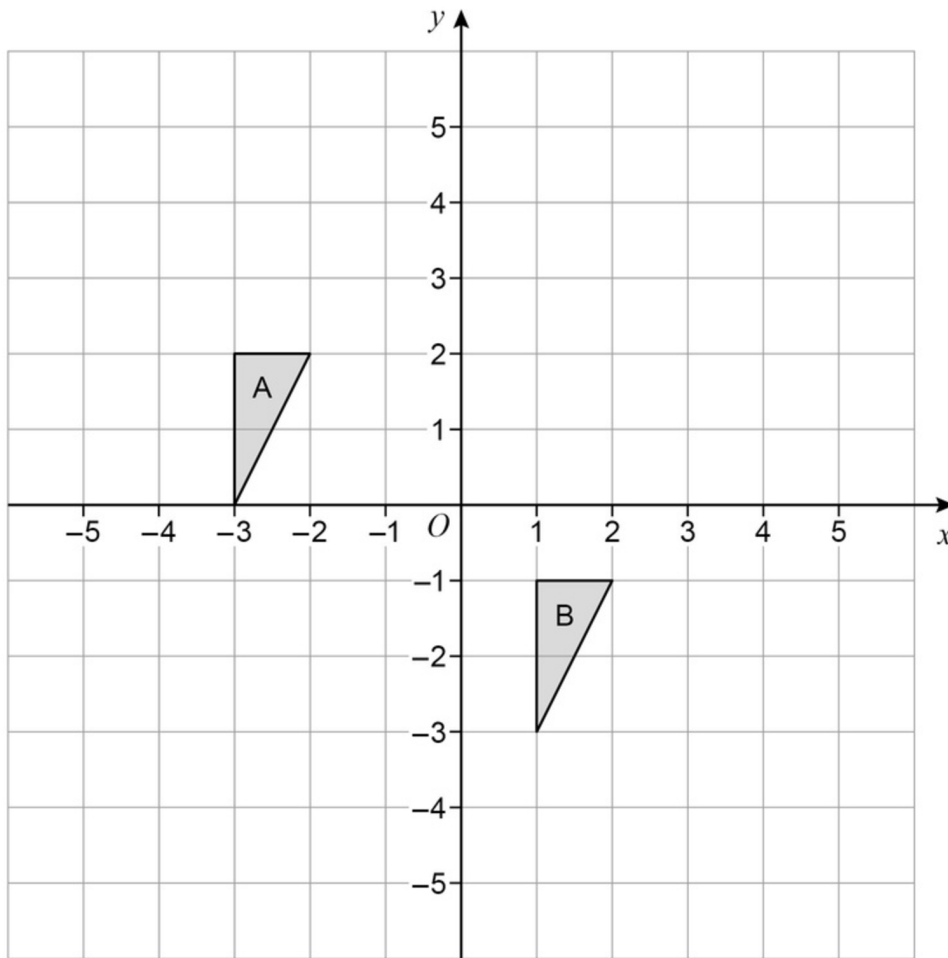   Give a reason for your answer.

[1 mark]

Answer _____

Reason _____

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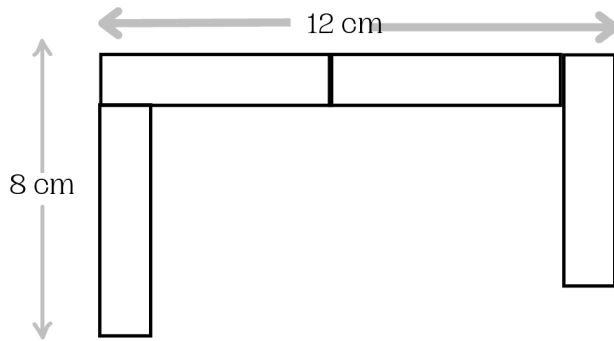24   Write down the translation vector that maps shape A   onto shape B.

[2 marks]

Answer _____

Turn over for the next question

5

Turn over ▶

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25   A pattern is made using identical rectangular tiles.
      Find the total area of the pattern.

[4 marks]

12 cm

8 cm

Not drawn accurately

END OF QUESTIONS

4