

# AQA

GCSE

# Mathematics

## SET B – Paper 2 Foundation Tier

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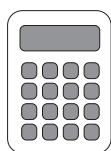
# F

### Materials

Time allowed: 1 hour 30 minutes

#### For this paper you must have:

- calculator
- mathematical instruments



### Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the space provided.
- 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 use additional paper, graph paper and tracing paper.

Name: .....

Answer **all** questions in the spaces provided.

- 1 (a) Circle the number that is a multiple of **both** 5 and 8

[1 mark]

13                      25                      40                      48

- 1 (b) Circle the number that is 25% **more** than 80

[1 mark]

60                      100                      105                      120

- 2 Circle the expression that represents 4 less than  $x$ .

[1 mark]

$4 - x$                        $\frac{x}{4}$                        $x - 4$                        $4x$

- 3 Circle the value of  $3 + 4 \times 5^2$

[1 mark]

103                      175                      403                      1225

- 4 Here are four numbered cards.



- 4 (a) Write down the biggest 4-digit **odd** number that can be made with the cards.

[1 mark]

Answer .....

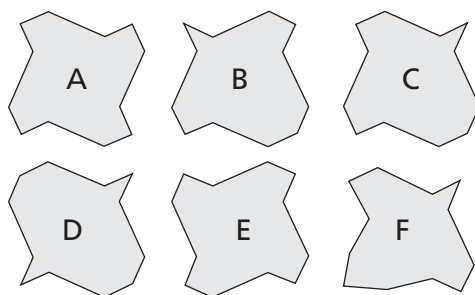
- 4 (b) How many numbers between 4000 and 5000 can be made with the four cards?

[2 marks]

.....

Answer .....

5 Here are six shapes.

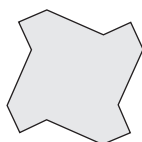


5 (a) Which two shapes are **exactly** the same?

[1 mark]

Answer .....

5 (b) Here is shape A.

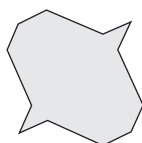


Write down the order of rotational symmetry of this shape.

[1 mark]

Answer .....

5 (c) Here is shape D.

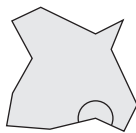


Write down the number of lines of symmetry of this shape.

[1 mark]

Answer .....

5 (d) Here is shape F.



Circle the type of angle marked.

[1 mark]

Acute

Obtuse

Reflex

Right

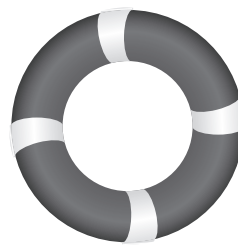
6 A shop sells beach toys.



Bucket £2.49



Spade £1.49



Rubber ring £3.50

6 (a) Josie buys one of each item.

She pays with a £10 note.

How much change should she get?

[2 marks]

Answer £.....

- 6 (b) Josie receives her change in the least number of coins possible.

Which coins did she get?

[2 marks]

.....

Answer .....

- 7 (a) Round the number 278 to the nearest 10

[1 mark]

Answer .....

- 7 (b) Round the number 3850 to the nearest 100

[1 mark]

Answer .....

- 8 (a) Write down the rule for continuing this sequence.

[1 mark]

5                  9                  13                  17                  21                  .....

Answer .....

- 8 (b) Write down the next term in the sequence in part (a).

[1 mark]

.....

8 (c) Write down the next term in this sequence.

[1 mark]

2                      3                      5                      8                      13                      21                      ...

Answer .....

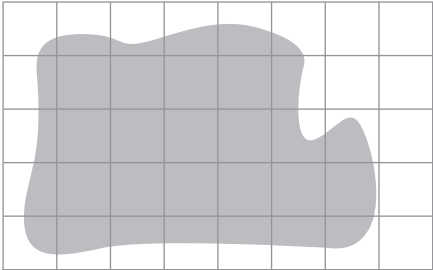
8 (d) Write down the  $n$ th term of this sequence.

[1 mark]

3                      8                      13                      18                      23                      ...

Answer .....

9 A shape is drawn on a centimetre grid.



Show clearly that the area of the shape lies between  $13 \text{ cm}^2$  and  $33 \text{ cm}^2$

[2 marks]

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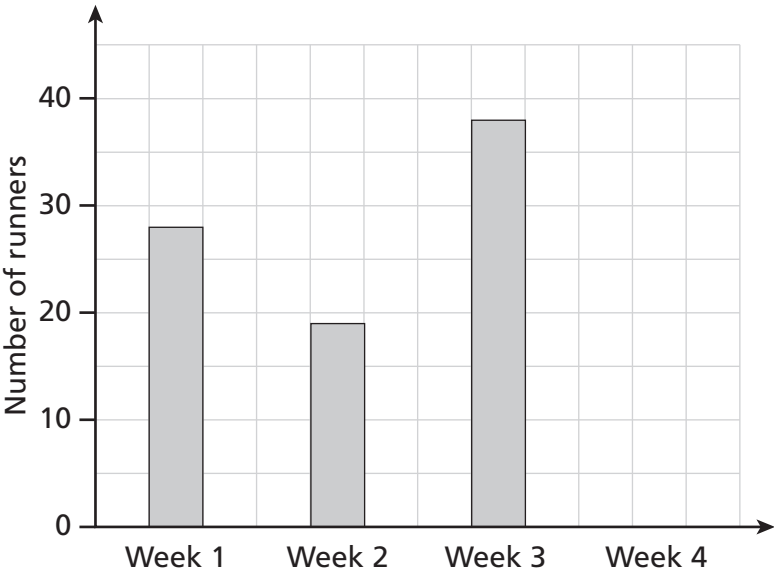
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10 A running club meets on Tuesday evening.

The bar chart shows how many members came each Tuesday in January.

The information for week 4 is missing.



10 (a) How many members came to the club in week 2?

[1 mark]

Answer .....

10 (b) How many more members came in week 3 than week 1?

[1 mark]

Answer .....

10 (c) The club has 60 members.

55% of the members came to the club in week 4

Complete the bar chart.

[3 marks]

10 (d) The club chairman said,  
 "On average over half of our members came each week in January".  
 Is she correct?

Tick a box      ☐ Yes      ☐ No      ☐ Cannot tell

Give reasons for your choice below.

[4 marks]

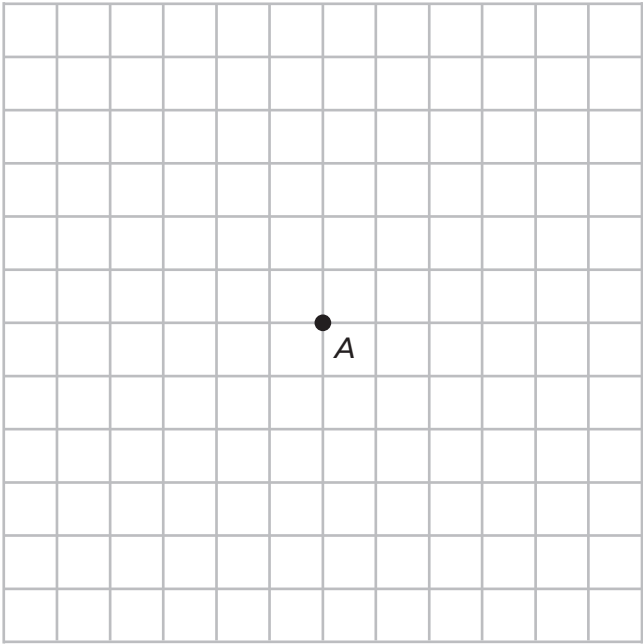
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11 On the grid below draw  
 A circle, radius 5 cm centred on A  
 A 6 cm by 8 cm rectangle **inside** the circle  
 A diagonal of the rectangle.

[3 marks]





12 (a) Solve  $x - 9 = 17$

[1 mark]

$x =$  .....

12 (b) Solve  $\frac{x}{4} = 8$

[1 mark]

$x =$  .....

13 (a) Use your calculator to work out  $\sqrt[3]{46.656}$

[1 mark]

Answer .....

13 (b) Use your calculator to work out  $\sqrt{105} + 19.8^2$

[1 mark]

Answer .....

13 (c) Use estimation to show that your answer to part (b) is sensible.

[2 marks]

.....

.....

- 14** A bag contains 20 counters.

8 of the counters are yellow.

5 of the counters are blue.

The rest of the counters are red.

Work out the probability that a counter taken at random from the bag is red.

**[2 marks]**

Answer .....

- 15** This formula is used to work out the cost of a taxi fare.

Fare = £4.00 + £2.25 for each mile + £0.75 for every minute stationary

- 15 (a)** Jasmine takes a taxi that travels a distance of 7 miles and is stationary for 8 minutes.

How much was her fare?

**[2 marks]**

.....

.....

Answer £ .....

- 15 (b)** Alf takes a taxi that travels a distance of 6 miles.

His fare is £21.25

For how many minutes was the taxi stationary?

**[3 marks]**

.....

.....

Answer ..... minutes

16 (a) Expand  $(x - 2)(x + 3)$

[2 marks]

Answer .....

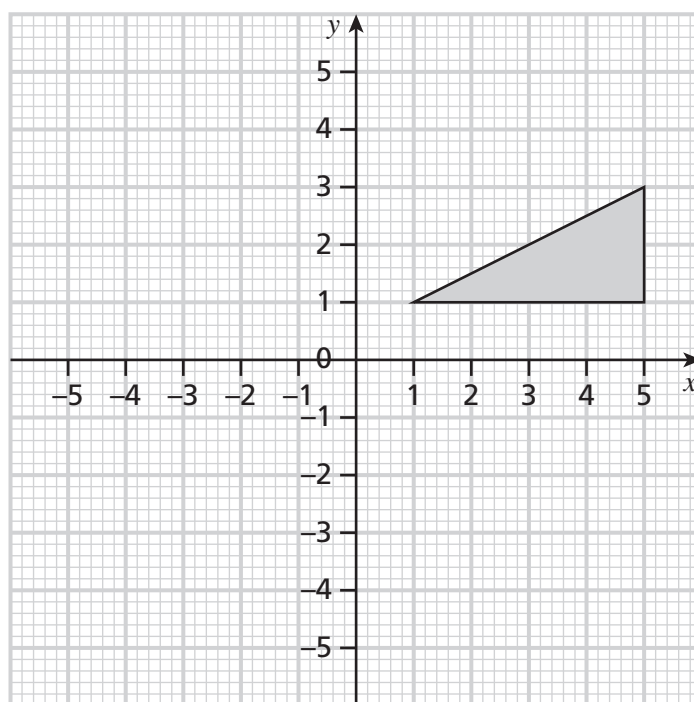
16 (b) Factorise  $x^2 + 4x + 3$

[2 marks]

Answer .....

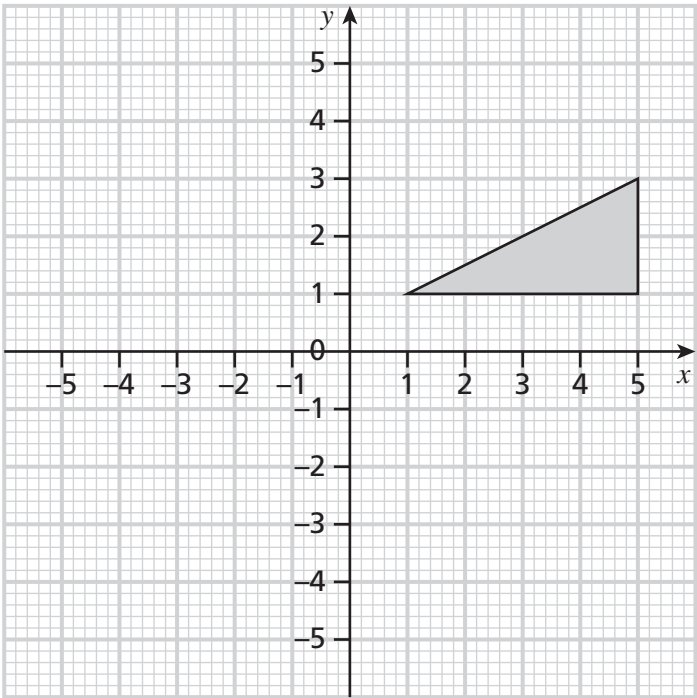
17 (a) Reflect the triangle in the line  $y = -1$

[2 marks]



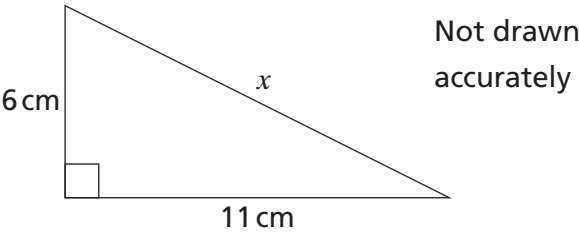
17 (b) Translate the triangle by  $\begin{pmatrix} -3 \\ -4 \end{pmatrix}$

[2 marks]



18 Work out the length  $x$  in the triangle.

[3 marks]



$x =$  ..... cm

19 The table shows the heights of some young trees.

Height, $h$ , cm	Frequency
$140 \leq h < 150$	5
$150 \leq h < 160$	9
$160 \leq h < 170$	12
$170 \leq h < 180$	8
$180 \leq h < 190$	6

Work out an estimate of the mean height.

[3 marks]

.....

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.....

Answer ..... cm

20 (a) As a product of prime factors  $20 = 2^2 \times 5$

Work out 28 as a product of prime factors.

[2 marks]

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Answer .....

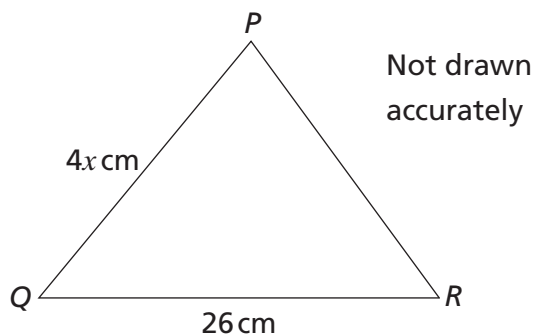
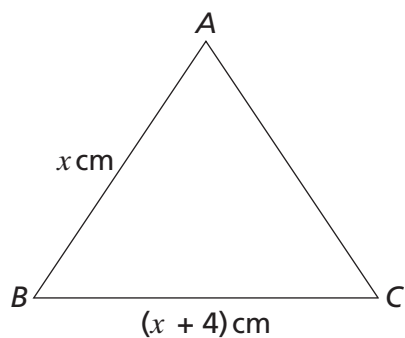
20 (b) Work out the least common multiple of 20 and 28

[2 marks]

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Answer .....

- 21 Triangles  $ABC$  and  $PQR$  are similar.



Work out the value of  $x$ .

[3 marks]

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Answer \_\_\_\_\_

- 22 A washing machine is reduced by 15% in a sale.

The sale price of the washing machine is £238

What was the original price of the washing machine?

[3 marks]

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Answer £ \_\_\_\_\_

- 23** Two numbers are in the ratio 2 : 5

The difference between the numbers is 36

Work out the values of the two numbers.

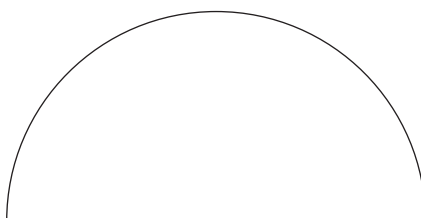
**[3 marks]**

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Answer ..... and .....

- 24** The area of this semicircle is  $201 \text{ cm}^2$  to 3 significant figures.



Not drawn  
accurately

Work out the perimeter of the semicircle.

**[3 marks]**

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Answer ..... cm

- 25 Using ruler and compasses only, construct an angle of  $60^\circ$  at A.

You must show your construction arcs.

[2 marks]

A \_\_\_\_\_

END OF QUESTIONS