

# AQA

GCSE

# Mathematics

SET B – Paper 1 Foundation Tier

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# F

## Materials

Time allowed: 1 hour 30 minutes

**For this paper you must have:**

- mathematical instruments

You may **not** use a calculator.



## 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 How many metres are there in 3.5 kilometres?

Circle your answer.

[1 mark]

0.35

35

350

3500

- 2 Here are five numbers.

8

9

5

7

2

- 2 (a) Work out the range of the five numbers.

Circle your answer.

[1 mark]

2

5

6

7

- 2 (b) Work out the median.

Circle your answer.

[1 mark]

5

6

7

8

- 3 Circle the fraction that is **not** between  $\frac{1}{3}$  and  $\frac{3}{5}$

[1 mark]

$\frac{1}{2}$

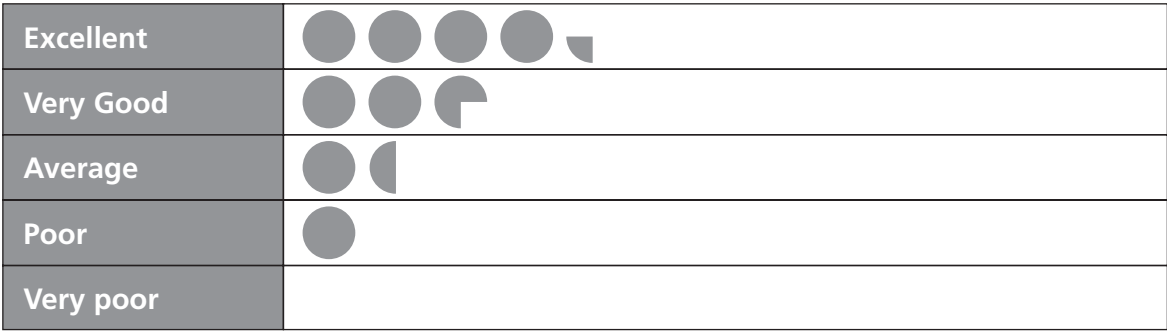
$\frac{7}{10}$

$\frac{8}{15}$

$\frac{13}{30}$

4 40 people are asked to comment on the service in a restaurant.

The pictogram shows some of the results.



17 people said the service was excellent.

4 (a) Complete the key below.

[1 mark]

 represents ..... people

4 (b) How many people said the service was very good?

[1 mark]

Answer .....

4 (c) How many people said the service was average or better?

[2 marks]

.....

Answer .....

4 (d) Complete the pictogram.

[2 marks]

5 (a) Work out  $736 + 249$

[1 mark]

Answer .....

5 (b) Work out  $323 - 156$

[1 mark]

Answer .....

5 (c) Work out  $6 \times 23$

[1 mark]

Answer .....

5 (d) Work out  $128 \div 4$

[1 mark]

Answer .....

6 In a game a prize is hidden in one of 12 boxes.

1	2	3	4	5	6	7	8	9	10	11	12
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Mia is playing the game.

She is told that the prize:

is not in a box that is a multiple of 3

is in a box that is a prime number

is nearer to box 1 than box 12.

Which boxes could the prize be in?

[2 marks]

.....

.....

Answer .....

7 Mary is catching a train from Denby Dale to Manchester Airport.

She has to change trains in Huddersfield.

Here are two train timetables.

Denby Dale	06:24	07:24	08:24	09:24	10:24
Huddersfield	06:52	07:52	08:52	09:52	10:52

Huddersfield	07:02	08:02	08:35	09:16	10:02
Manchester Airport	07:50	08:50	09:25	10:05	10:50

7 (a) Mary’s plane is due to take off at 12:30

She needs to be at the airport 3 hours **before** the flight is due to take off.

What is the time of the **latest** train she can catch from Denby Dale?

Circle your answer.

[1 mark]

06:24                      07:24                      08:24                      09:24                      10:24

7 (b) Arthur is meeting someone at the airport.

He plans to get to the airport at 10:05

He catches the 08:24 from Denby Dale.

How long is his journey to the airport?

[2 marks]

Answer .....

7 (c) Zak is at Huddersfield Station.

He looks at his watch.



How long will he have to wait for the next train to Manchester Airport?

[2 marks]

Answer .....

- 8 Eggs are delivered in trays containing 24 eggs.

A hotel orders 32 trays.

How many eggs do they order?

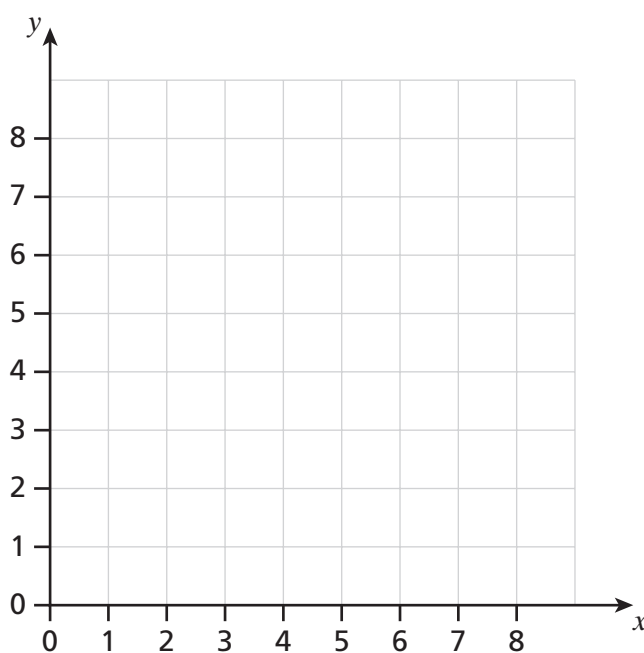
[3 marks]

Answer .....

- 9  $A(1, 2)$ ,  $B(2, 6)$ ,  $C(8, 6)$  and  $D(7, 2)$  are the four vertices of a quadrilateral.

- 9 (a) Draw the quadrilateral on the centimetre grid.

[2 marks]



- 9 (b) What type of quadrilateral is  $ABCD$ ?

Circle your answer.

[1 mark]

Kite

Parallelogram

Rhombus

Trapezium

9 (c) Work out the area of  $ABCD$ .

[2 marks]

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Answer .....  $\text{cm}^2$

10 (a) Simplify  $7a + 6a - 5a$

[1 mark]

Answer .....

10 (b) Simplify fully  $2 \times 3m + 6 \times 5m$

[2 marks]

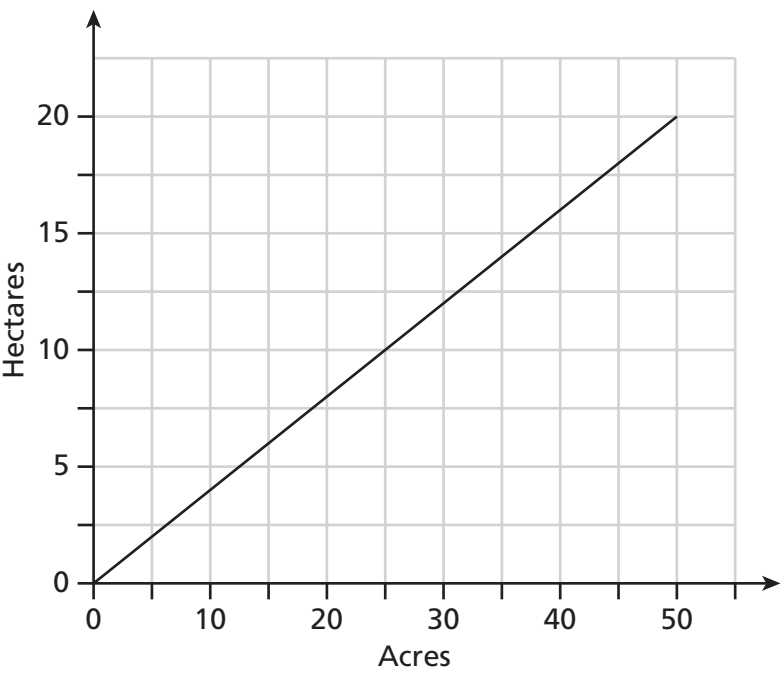
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Answer .....

11 The conversion graph compares acres to hectares.

Acres are a measurement of area that is commonly used in Britain.

Hectares are a metric unit of area.



11 (a) How many acres are there in 15 hectares?

[1 mark]

Answer .....

11 (b) A farm is for sale.

It has an area of 100 acres.

Farmland has an average cost of £25 000 per hectare.

Approximately how much will the farm cost?

[3 marks]

.....

.....

.....

.....

Answer .....



12 56 men and 66 women were asked if they could swim.

$\frac{4}{7}$  of the men said yes

$\frac{9}{11}$  of the women said yes

How many of the people asked could swim?

You **must** show your working.

[3 marks]

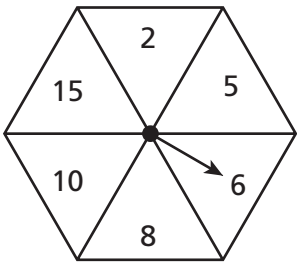
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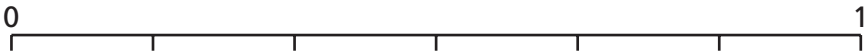
Answer .....

13 (a) Here is a fair spinner.



On the probability scale show the probability that the spinner lands on an odd number.

[1 mark]

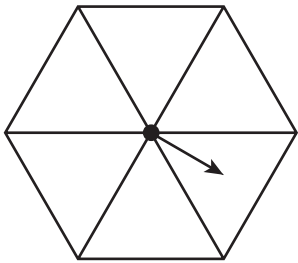


13 (b) On this fair spinner write numbers in each sector so that

the probability of the arrow landing on an odd number is  $\frac{1}{2}$

the probability of the arrow landing on a multiple of 3 is  $\frac{1}{3}$

[2 marks]

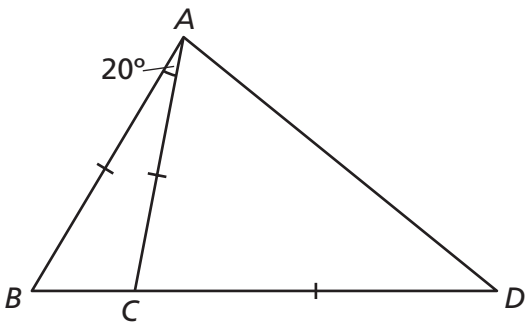


14 *ABC* and *ACD* are triangles.

$AC = CD = AB$

*BCD* is a straight line.

Angle *BAC* =  $20^\circ$



Not drawn  
accurately

Work out the size of angle *CDA*.

[3 marks]

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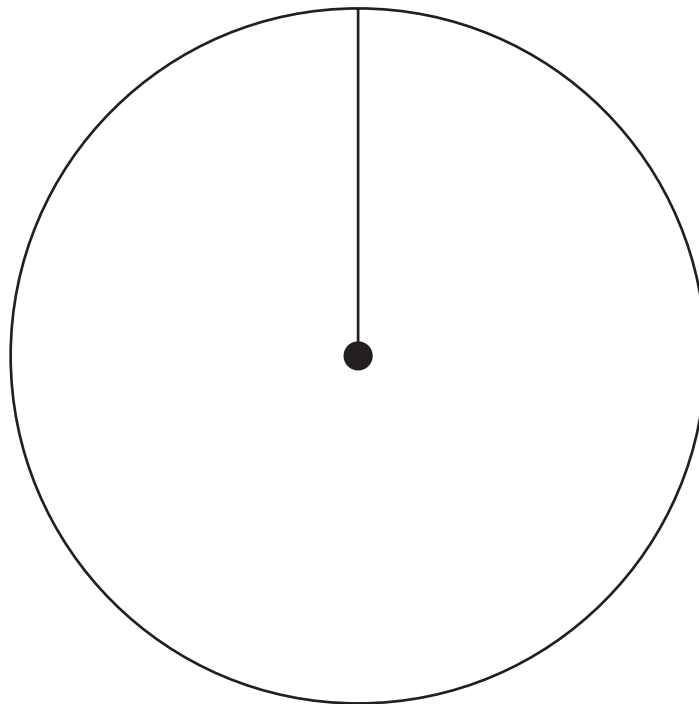
Answer .....<sup>o</sup>

- 15 Here is some information about the colour of cars in a car park.

Colour	Frequency
Blue	7
Silver	8
Red	10
White	5
Green	6

Draw a fully labelled pie chart to show this information.

[4 marks]



- 16 A cylinder has a base diameter of 20 cm and a height of 8 cm.

Calculate the volume of the cylinder.

Give your answer in terms of  $\pi$ .

[2 marks]

.....

.....

Answer ..... cm<sup>3</sup>

17 Solve  $3(x - 2) + 4 = \frac{x}{2}$

[3 marks]

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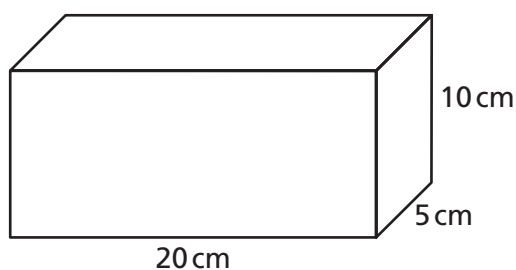
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$x =$  .....

18 Work out the surface area of the cuboid shown.

[3 marks]




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Answer .....  $\text{cm}^2$

19 Expand and simplify  $4(x + 1) - 2(3x - 4)$

[3 marks]

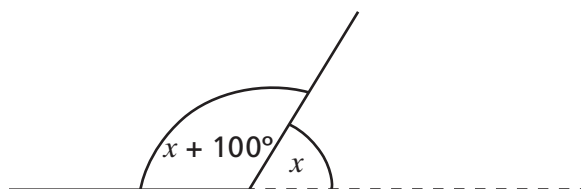
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Answer .....

20 Part of a regular polygon is shown.



How many sides does the polygon have?

[3 marks]

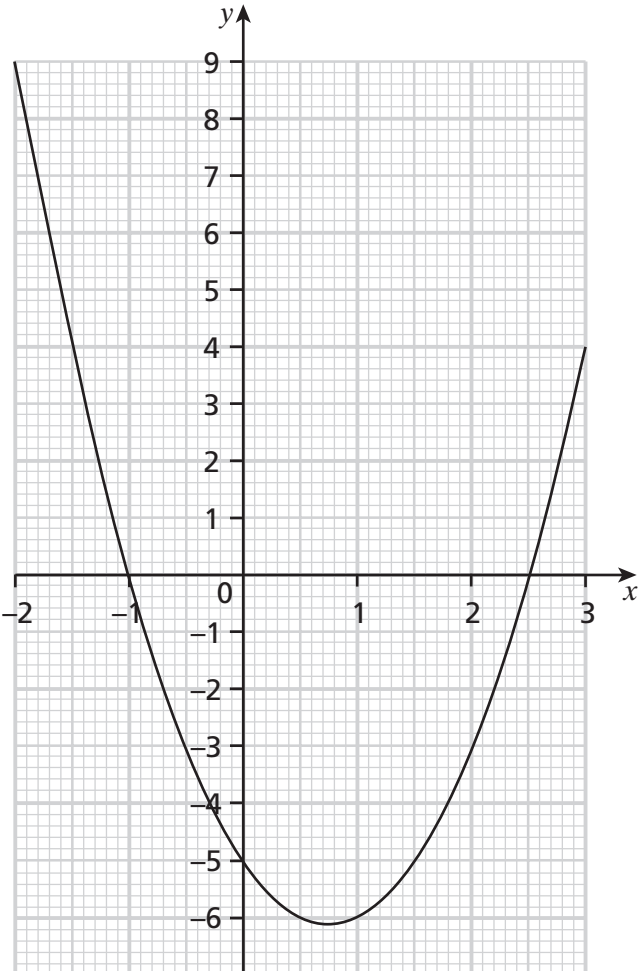
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Answer .....

21 The graph of  $y = 2x^2 - 3x - 5$  is shown.



21 (a) Write down the values of  $x$  when  $y = 4$ .

[2 marks]

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

21 (b) Write down the coordinates of the minimum point.

[1 mark]

Answer ( ..... , ..... )

22 (a) Write  $2.3 \times 10^5$  as an ordinary number.

[1 mark]

Answer .....

- 22 (b) Write 0.0005 in standard form.

[1 mark]

Answer .....

- 22 (c) Work out  $2 \times 10^4 \times 8 \times 10^3$

Give your answer in standard form.

[2 marks]

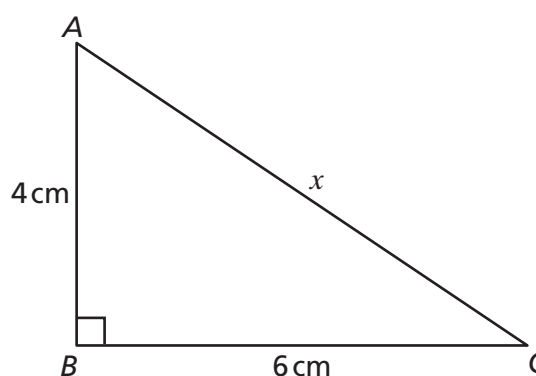
Answer .....

- 23 Solve the inequality  $3n + 7 > n - 4$

[3 marks]

Answer .....

- 24 (a) Here is a right-angled triangle  $ABC$ .



Not drawn  
accurately

Circle the **exact** value of the length  $x$ .

[1 mark]

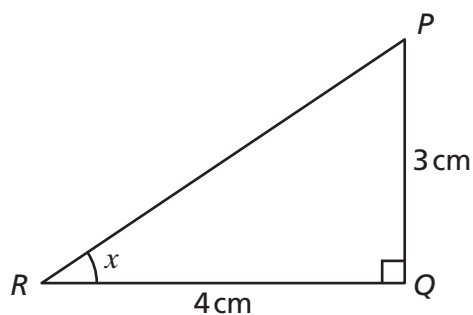
7.2111 cm

8 cm

$\sqrt{52}$  cm

10 cm

- 24 (b) Here is a right-angled triangle  $PQR$ .



Not drawn  
accurately

Circle the value of the tangent of angle  $x$ .

[1 mark]

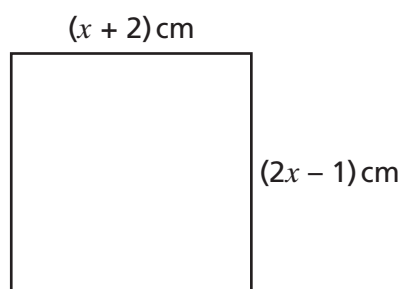
$$\frac{3}{5}$$

$$\frac{3}{4}$$

$$\frac{4}{5}$$

$$\frac{4}{3}$$

- 25 Here is a square.



Not drawn  
accurately

Work out the area.

You **must** show your working.

[5 marks]

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Answer .....  $\text{cm}^2$

END OF QUESTIONS