AQA

GCSE
MATHEMATICS

F

Foundation Tier   Paper 2 Calculator

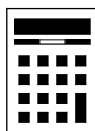Friday 10 November 2023   Morning   Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:
- a calculator
- mathematical instruments
- the Formulae Sheet (enclosed).

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top 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.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

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 work out your answer.

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

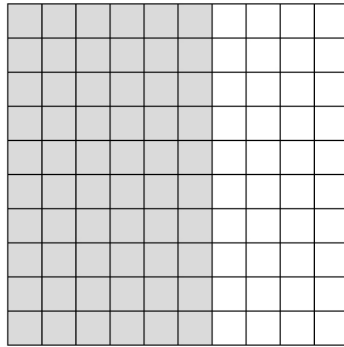**1** Convert 800 centimetres to metres.

[1 mark]

Answer _____ m

2 The temperature was −11°C and **increases** by 5°C

Work out the new temperature.

[1 mark]

Answer _____ °C
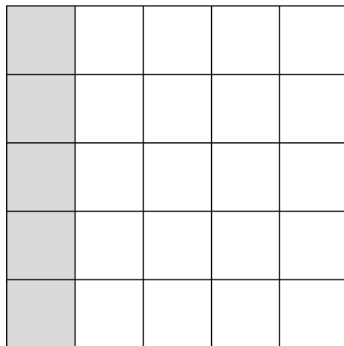
3 (a) Here is a grid.

What percentage of the grid is shaded?

[1 mark]

Answer _____ %

3 (b) Here is a different grid.

What percentage of the grid is shaded?

[1 mark]

Answer _____ %

Turn over ▶

4 (a) Solve $\dfrac{x}{3} = 6$

[1 mark]

$x =$ _____

4 (b) Solve $2x + 3 = 27$

[2 marks]

$x =$ _____

5 Work out $\dfrac{9}{4}$ as a decimal.

[1 mark]

Answer _____

6 Complete the bank statement.

[3 marks]

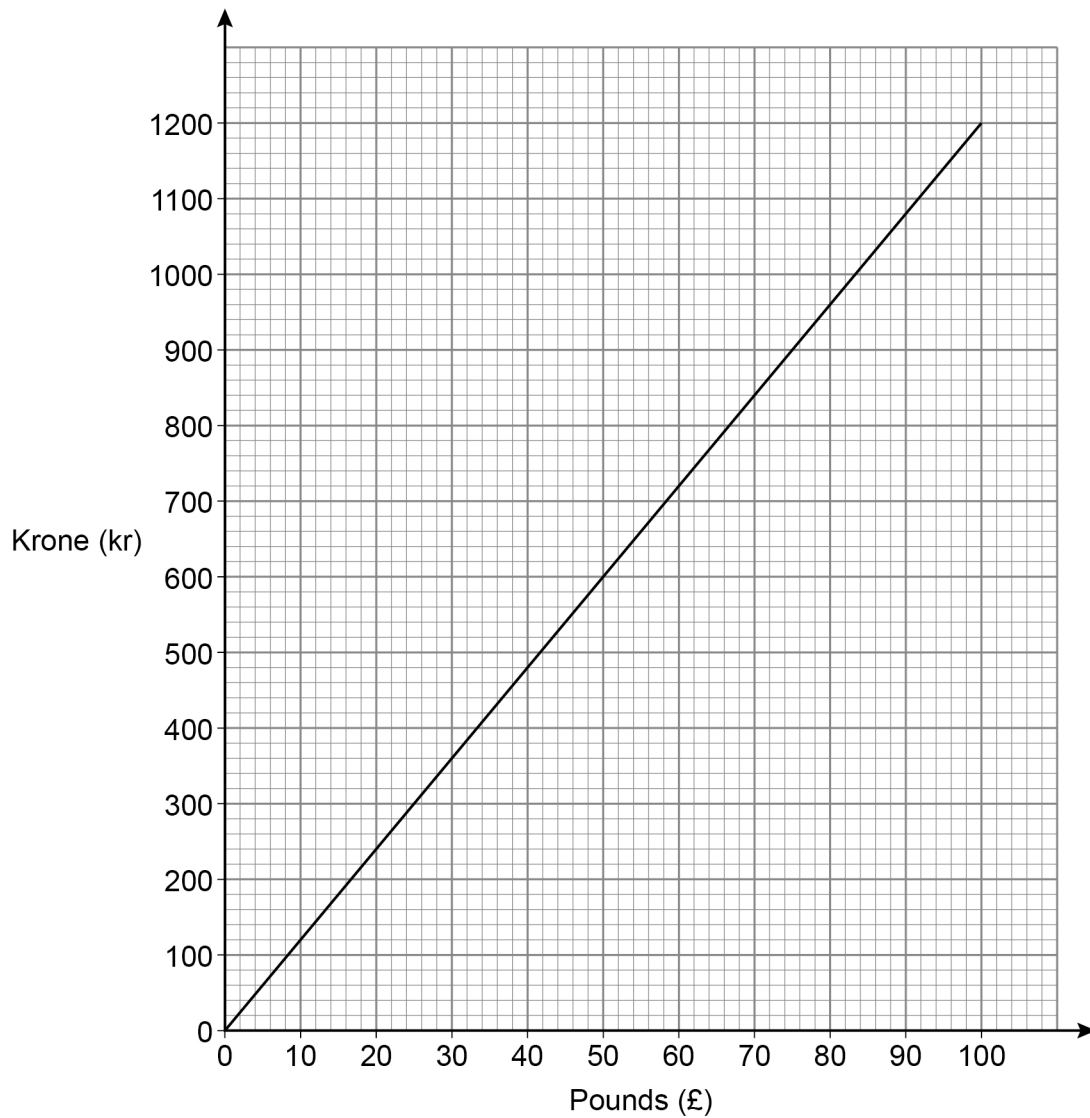| Date	Description	Credit (£)	Debit (£)	Balance (£)
01/11/2021	Starting balance			736.28
05/11/2021	Rent		450.00	_____
14/11/2021	Refund	25.00		_____
27/11/2021	Wages	1830.29		_____

7 Put all the numbers   4, 5, 6, 10 and 20   into the grid

so that the numbers in each row and each column **multiply** to 120

[3 marks]

	3		120
	2	12	120
		1	120
120	120	120	

8 The graph below is used to convert between pounds (£) and Norwegian krone (kr).

8 (a) Convert 720 krone into pounds.

[1 mark]

Answer £ _____

8 (b) Convert £500 into krone.

[2 marks]

_____

_____

Answer _____ kr

0 6

9   Connor is estimating the answer to $385 + 1479$

9 (a)   He rounds each number to the nearest 10

Work out his estimate.

[2 marks]

Answer _____

9 (b)   Connor says,

"My estimate will be more than the exact answer."

How does he know this **without working out the exact answer**?

[1 mark]

Turn over for the next question

6

Turn over ▶

10 Here are the salaries, in £, of the 6 workers in a company.

18 300   20 700   21 500   21 500   21 500   99 000

10 (a) Work out the mean salary.

[2 marks]

_____

_____

_____

_____

Answer £ _____

10 (b) Why is the mean **not** the best average to represent the salaries?

[1 mark]

_____

_____

_____

11 Zoe's mass is 55 kilograms.

Work out her mass in stones and pounds.

Use   1 kilogram = 2.2 pounds

        14 pounds = 1 stone

[3 marks]

Answer _____ stones _____ pounds

Turn over for the next question

6

Turn over ▶

IB/M/Nov23/8300/2F

12 (a) A sauce is made from cream and stock in the ratio

cream : stock = 1 : 6

How much **sauce** can be made using 80 millilitres of cream?

[2 marks]

Answer _____ ml

12 (b) A different sauce is made from olive oil and tomato juice in the ratio

olive oil : tomato juice = 1 : 14

What fraction of this sauce is olive oil?

[1 mark]

Answer _____

13 Multiplying y by 6 gives the same result as adding 15 to y

13 (a) Write this as an equation.

[2 marks]

_____

Answer _____

13 (b) Show that the value of y is **not** 4

[1 mark]

_____

_____

_____

_____

Turn over for the next question

6

Turn over ▶

14 A golf club is organising a trip for 42 people.

The costs are shown in the table.

Minibus hire	£450 per minibus
Fuel	£26 per minibus
1 game of golf	£18.50 per person

Each minibus can hold 15 people.

Each person will play 2 games of golf.

The cost of the trip will be shared equally by the 42 people.

Work out the cost per person.

[5 marks]

Answer £ _____

15 An ordinary fair dice is rolled ten times.

Here are the first nine results.

6 1 3 2 1 5 5 5 5

Write down the probability of getting a 5 on the tenth roll.

[1 mark]

Answer _____

16 $r : w = 1 : 4$
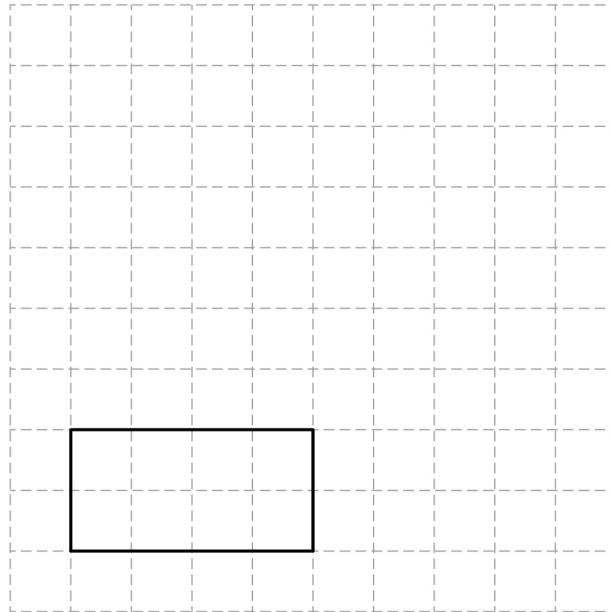
Write down the ratio $r^2 : w^2$

[1 mark]

Answer _____ : _____

Turn over for the next question
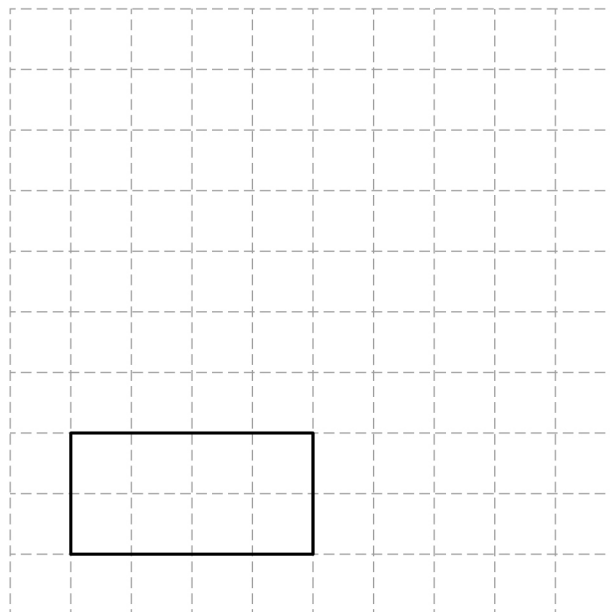
7

Turn over ▶

17 (a)   A rectangle is drawn on a square grid.

On the grid, draw a **congruent** rectangle.

[1 mark]

17 (b)   Here is the rectangle on a different square grid.

On this grid, draw a **similar** rectangle which is **not** congruent.

[1 mark]

18 A box contains 36 chocolates.

The chocolates are milk or dark and have hard or soft centres.

$\frac{4}{9}$ of the chocolates have soft centres.

There are twice as many milk chocolates as dark.

5 of the dark chocolates have soft centres.

18 (a) Complete the two-way table.

[4 marks]

	Hard centre	Soft centre
Milk		
Dark		5

One chocolate is chosen at random.

18 (b) What is the probability that it is a dark chocolate with a soft centre?

[1 mark]

Answer _____
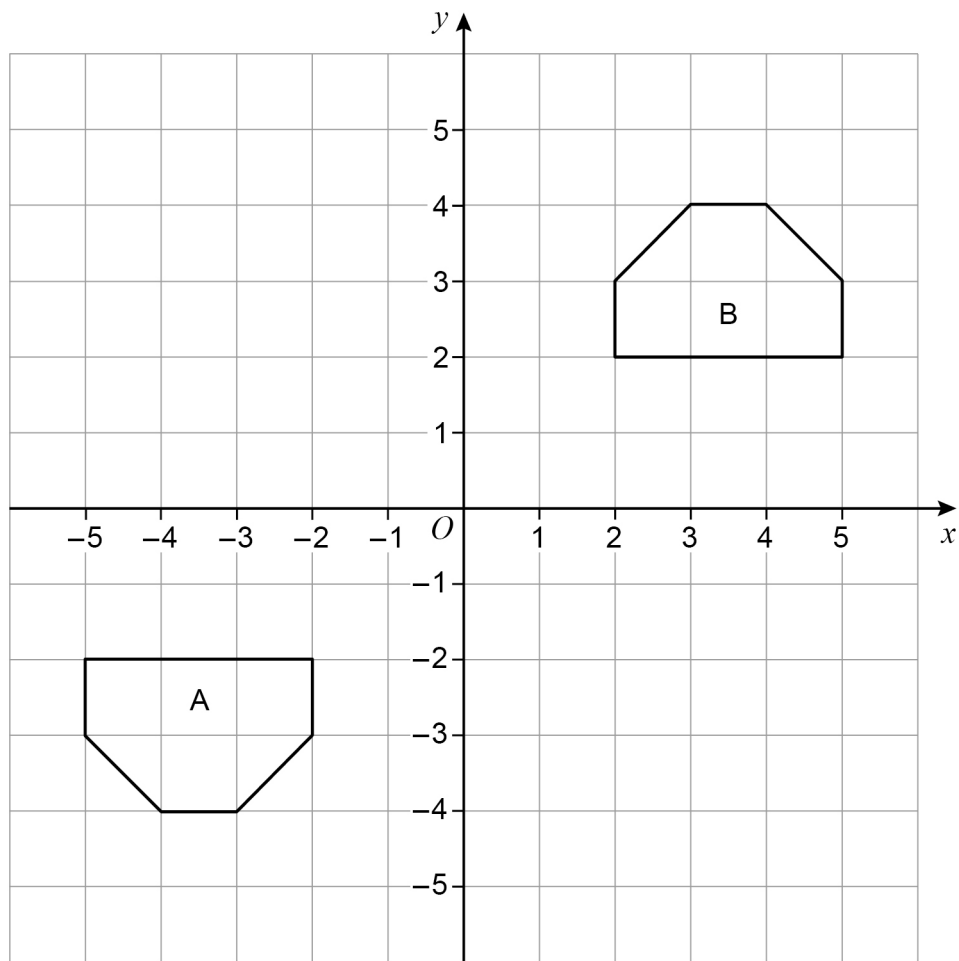
18 (c) What is the probability that it has a hard centre?
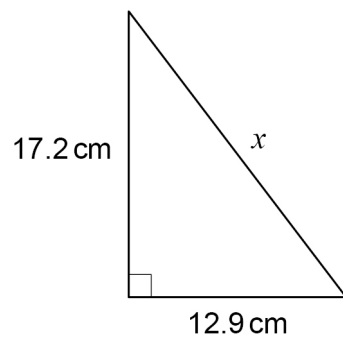
[1 mark]

Answer _____

Turn over ▶

19 Describe fully the **single** transformation that maps shape A to shape B.

[3 marks]

_____

_____

_____

_____

20   Use Pythagoras' theorem to work out the value of x.

[3 marks]

17.2 cm

Not drawn
accurately

x

12.9 cm

_____

_____

_____

_____

_____

_____

$x =$ _____ cm

Turn over for the next question

6

Turn over ▶

21

N

B

C

58°

A
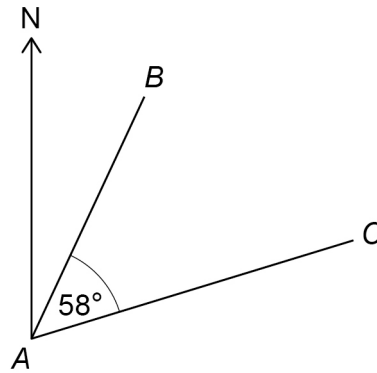
Not drawn accurately

The 3-figure bearing of *B* from *A* is 021°

Work out the 3-figure bearing of *C* from *A*.

[2 marks]

Answer _____ °

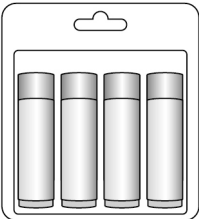**22** How many edges does a triangular prism have?

[1 mark]

Answer _____

23 Three shops sell the same type and size of lip balm stick.

Shop A	Shop B	Shop C
£2.39 each	£3.08 each	Pack of 4
	Buy one, get one half price	Was £11.40
		Now $\frac{1}{6}$ off

Which shop is the best value for 8 sticks and what is the total cost in that shop?

Show working to support your answer.

[5 marks]

Shop _____   Total cost £ _____

8

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24 The boundaries of a city form a trapezium.

Not drawn accurately

10 km

8 km

14 km
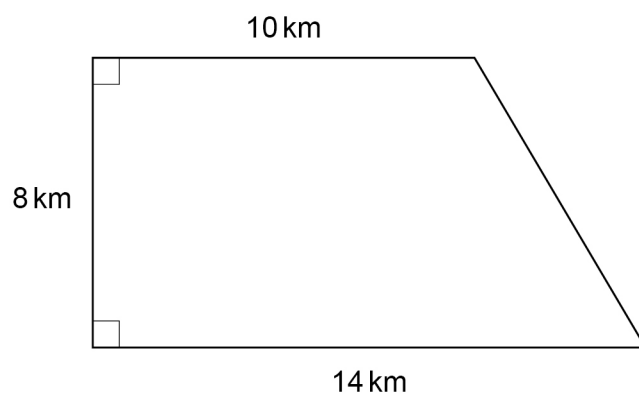
Population density = $\dfrac{\text{number of people}}{\text{area}}$

The population density of the city is 9450 people per square kilometre.

Work out the number of people who live in the city.

[4 marks]

Answer _____

25 Round 1 of voting for Head Student is taking place in a school.

25 (a) To reach round 2, a student must receive **at least** $\frac{4}{15}$ of the votes.

What is the largest possible number of students that can reach round 2?
Circle your answer.

[1 mark]

15   11   3   4

25 (b) There are 900 votes in round 1

Sean receives 180 votes.

Amy draws a pie chart to represent the results.
Here is her method to work out the angle needed for Sean.

$180 \div 900 \times 100 = 20$
The angle should be 20°

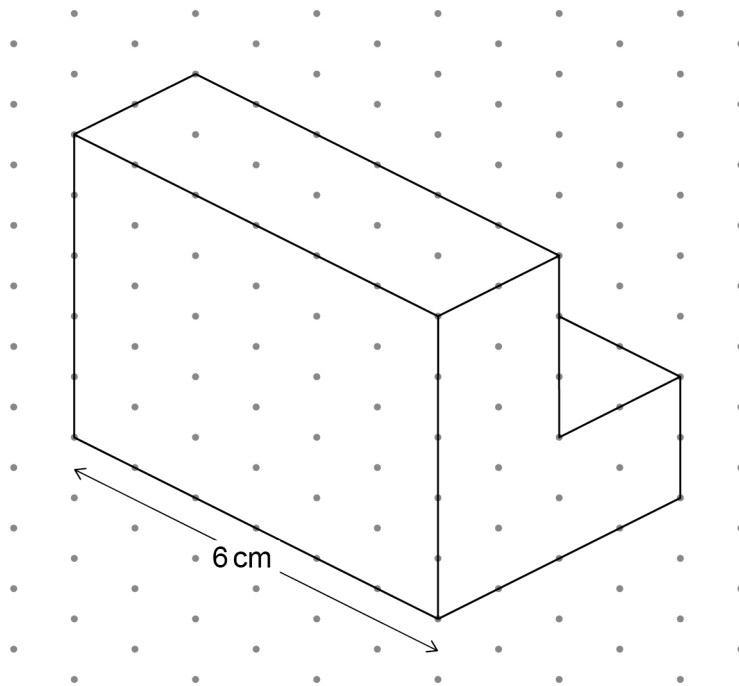Is Amy's method correct?
Tick a box.

Yes ☐   No ☐

Give a reason for your answer.

[1 mark]

6

26 Here is a prism drawn on an isometric grid.

6 cm

Work out the volume of the prism.

[3 marks]

Answer _____ cm^3

27 Tasha drove 198 miles.

Her average speed for the first 3 hours was 45 miles per hour.

Her average speed for the rest of the journey was 31.5 miles per hour.

Work out her average speed for the whole journey.

[4 marks]

Answer _____ miles per hour

Turn over for the next question

7

Turn over ►

28 Here is the term-to-term rule for a sequence.

Double the previous term and add 3

The first three terms of the sequence are $a + 1$ $2a + 5$ $4a + 13$

Show that the sum of the first **four** terms is a multiple of 3

[3 marks]

29 A straight line passes through (3, 14) and (12, 32)

Work out the equation of the line.

Give your answer in the form $y = mx + c$

[3 marks]

Answer _____

END OF QUESTIONS

6

There are no questions printed on this page

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ANSWER IN THE SPACES PROVIDED

Question number	**Additional page, if required.** **Write the question numbers in the left-hand margin.**

Do not write outside the box

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