

Please write clearly in block capitals.

Centre number

| | | | | |
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Candidate number

| | | | |
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| | | | |
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Surname

Forename(s)

Candidate signature

I declare this is my own work.

GCSE MATHEMATICS

F

Foundation Tier

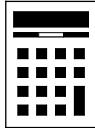
Paper 2 Calculator

Friday 8 November 2024 Morning Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:

- a calculator
- mathematical instruments
- the Formulae Sheet (enclosed).



| For Examiner's Use | |
|--------------------|------|
| Pages | Mark |
| 2–3 | |
| 4–5 | |
| 6–7 | |
| 8–9 | |
| 10–11 | |
| 12–13 | |
| 14–15 | |
| 16–17 | |
| 18–19 | |
| 20–21 | |
| 22–23 | |
| 24 | |
| TOTAL | |

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.



N 0 V 2 4 8 3 0 0 2 F 0 1

IB/M/Nov24/G4008/E10

8300/2F

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

Do not write
outside the
box

1 (a) A linear sequence starts

4 7 10 13

Write down the next number in this sequence.

[1 mark]

Answer _____

1 (b) A different linear sequence starts

19 14 9 4

Write down the next number in this sequence.

[1 mark]

Answer _____

1 (c) Here is another sequence.

3 6 12 24

Write down the term-to-term rule for this sequence.

[1 mark]

Answer _____



0 2

IB/M/Nov24/8300/2F

2 Here is a price list.

Do not write
outside the
box

| | |
|------------|-------|
| Soap | £2.00 |
| Candle | £4.55 |
| Lip scrub | £1.75 |
| Body cream | £3.80 |

2 (a) Work out the cost of three candles.

[1 mark]

Answer £ _____

2 (b) Sal has £7.50

He wants to buy one soap and one body cream.

Does he have enough money to also buy one lip scrub?

Tick a box.

Yes

No

Show working to support your answer.

[2 marks]

6

Turn over ►



0 3

IB/M/Nov24/8300/2F

3 (a) Solve $5x = 30$

[1 mark]

$$x = \underline{\hspace{2cm}}$$

3 (b) Solve $-2 + y = 10$

[1 mark]

$$y = \underline{\hspace{2cm}}$$

3 (c) Simplify fully $\frac{20w}{4w}$

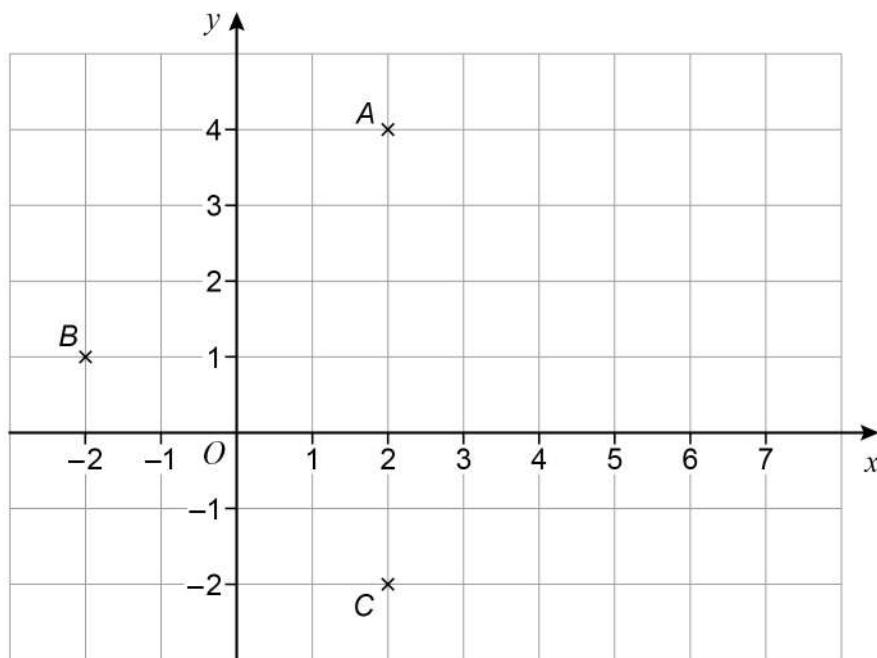
[2 marks]

Answer _____



0 4

IB/M/Nov24/8300/2F

4Points A , B and C are plotted on a grid.Do not write
outside the
box**4 (a)** Write down the coordinates of C .

[1 mark]

Answer (_____ , _____)

4 (b) Write down the coordinates of the midpoint of AC .

[1 mark]

Answer (_____ , _____)

4 (c) Plot point D on the grid so that $ABCD$ is a rhombus.

[1 mark]

—
7

Turn over ►



0 5

IB/M/Nov24/8300/2F

5 Here are five numbers.

14.2

15.1

16.5

16.7

18.0

5 (a) Work out the range.

[1 mark]

Answer _____

5 (b) Work out the mean.

[2 marks]

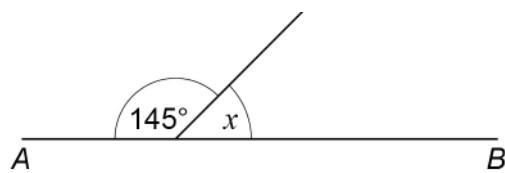
Answer _____



0 6

IB/M/Nov24/8300/2F

6 (a) AB is a straight line.



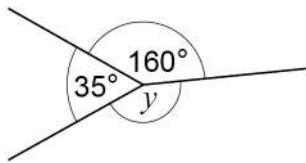
Not drawn
accurately

Work out the size of angle x .

[1 mark]

$$x = \underline{\hspace{2cm}}^\circ$$

6 (b)



Not drawn
accurately

Work out the size of angle y .

[2 marks]

$$y = \underline{\hspace{2cm}}^\circ$$

—
6

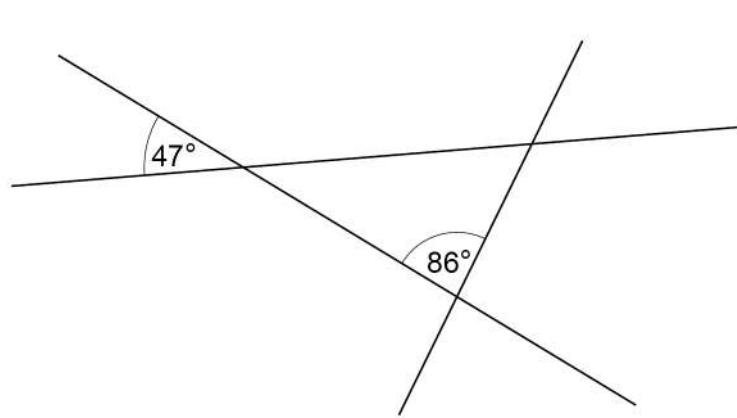
Turn over ►



0 7

IB/M/Nov24/8300/2F

6 (c) Three straight lines intersect as shown.



Not drawn accurately

What type of triangle is made?

You **must** show your working.

[3 marks]

Answer



7

The table shows information about the packs of juice a family has.

| Number of packs | Number of cartons in a pack |
|------------------------|------------------------------------|
| 5 | 8 |
| 16 | 3 |

The family drinks 4 cartons of juice each day.

In total, how many days will their packs last?

[3 marks]

Answer days

Turn over for the next question

6

Turn over ►



8 100 people voted in an election for Jo, Kim or Liam. The pictogram shows the results for Jo and Kim.

Key: represents 8 people

| | | | | | | |
|------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Jo | <input type="radio"/> |
| Kim | <input type="radio"/> |
| Liam | | | | | | |

Complete the pictogram.

[3 marks]



9 Callum is making pizza.

He can choose three **different** toppings from

- ham (H)
- sweetcorn (S)
- onion (O)
- mushrooms (M).

List **all** the possible options for the three toppings.

The first one has been done for you.

[2 marks]

H S O

Turn over for the next question

—
5

Turn over ►



1 1

IB/M/Nov24/8300/2F

10 (a) Write $\frac{3}{8}$ as a percentage.

[1 mark]

Answer _____ %

10 (b) Work out $\frac{15}{32}$ as a decimal.

Give your answer to 2 decimal places.

[2 marks]

Answer _____

11 Tick **one** box for each statement.

[3 marks]

True

May be true

Not true

If a number is > 0 the number is positive

If a number is ≤ 3 the number is 1

If a number is ≥ 5 the **smallest** possible value of the number is 5



12 (a) Work out the value of $x^2 + 7x$ when $x = -4$

[2 marks]

Answer _____

12 (b) Rearrange $y = w - 1$ to make w the subject.

[1 mark]

$w =$ _____

12 (c) Simplify fully $4(a + 2) + a$

[2 marks]

Answer _____



13

The time Shaz takes to run a race is 1 minute 28 seconds **less** than 2 hours.

Work out her time in hours, minutes and seconds.

[2 marks]

Answer _____ hour _____ minutes _____ seconds



1 4

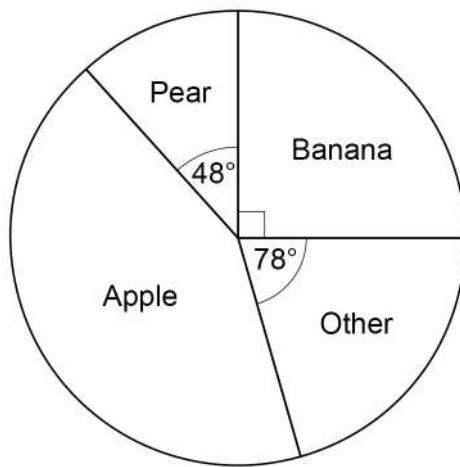
*Do not write
outside the
box*

14

Some people were asked to choose their favourite fruit.

The pie chart shows information about the results.

Not drawn accurately



120 people chose Banana.

How many people chose Apple?

[4 marks]

Answer

6

Turn over ►

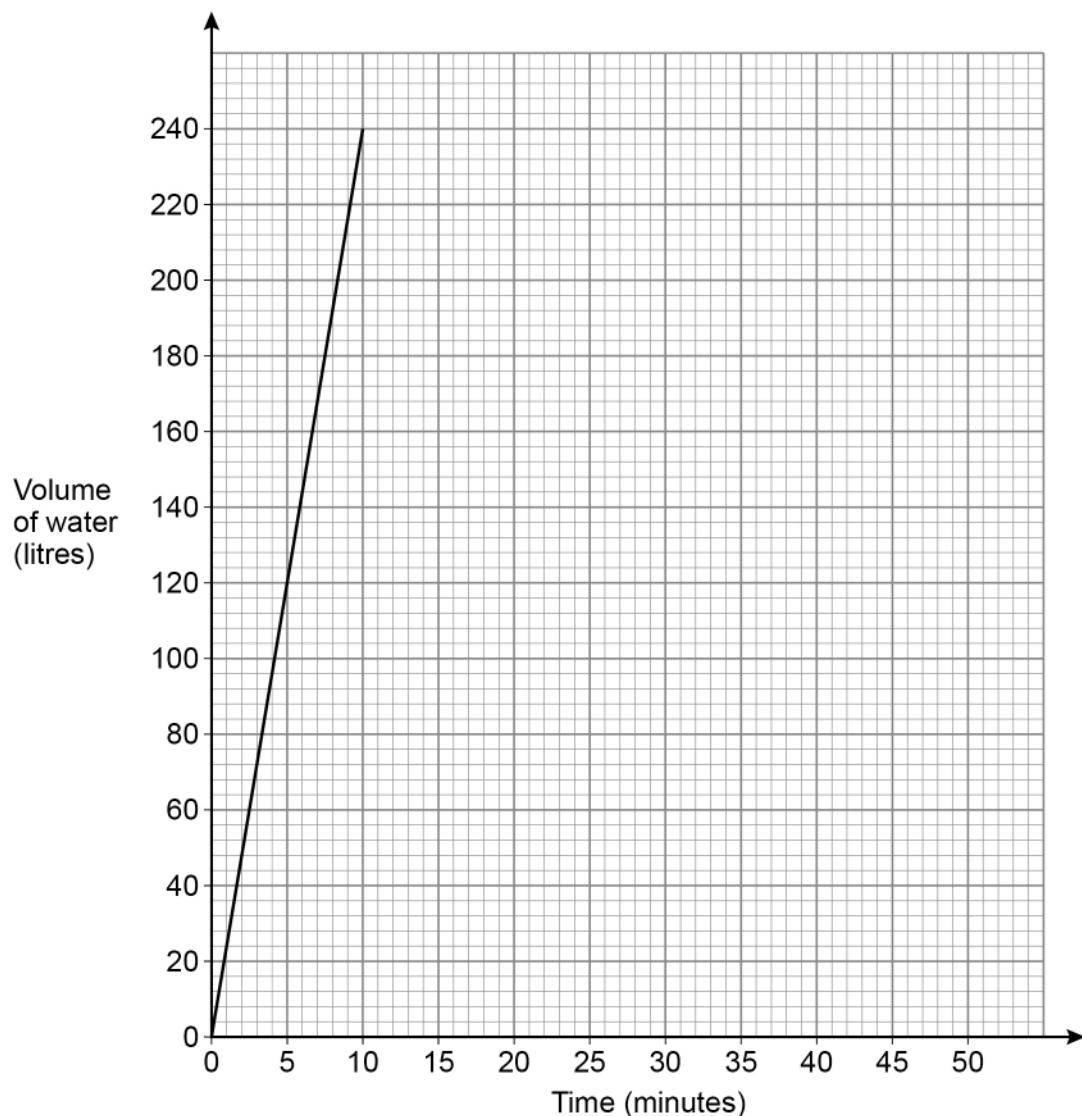


15

The graph represents the volume of water in a bath.

The bath is full after 10 minutes.

Do not write
outside the
box



15 (a) Work out the rate at which the bath is filled.

State the units of your answer.

[2 marks]

Answer _____



1 6

IB/M/Nov24/8300/2F

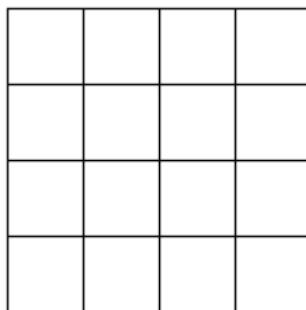
15 (b) After the bath is full,
the volume of water stays constant for 20 minutes
then
all the water empties out at a constant rate in 12 minutes.

Show this information on the graph.

[2 marks]

16 In the grid below, shade **one quarter** of the squares
so that the grid has exactly **two** lines of symmetry.
Shade complete squares only.

[2 marks]



Turn over for the next question

6

Turn over ►



1 7

IB/M/Nov24/8300/2F

17 A map has a scale of 1 : 4000
On the map, the distance from a station to a museum is 7 cm
Is the **actual** distance from the station to the museum **more** than 300 m?
Tick a box.

Yes

No

Show working to support your answer.

[3 marks]

18 X is inversely proportional to Y .

Circle the correct statement.

[1 mark]

X is directly proportional to Y

X is directly proportional to $\frac{1}{Y}$

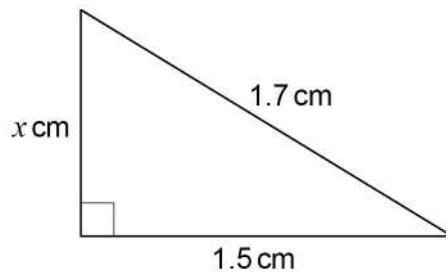
X is directly proportional to $2Y$

X is directly proportional to \sqrt{Y}



19

Here is a right-angled triangle.



Not drawn accurately

Use Pythagoras' theorem to show that $x = 0.8$

[2 marks]

Turn over for the next question

6

Turn over ►



20 Beth and Lynn each spin the same biased coin a number of times.
The table shows information about the results.

Do not write outside the box

| | Beth | Lynn |
|------------------------------------|------|------|
| Number of spins | 125 | 80 |
| Relative frequency of Heads | 0.32 | 0.35 |

20 (a) How many **more** Heads did Beth spin than Lynn?

[2 marks]

Answer _____

20 (b) Lynn says,

“My estimate of the probability of the coin landing on Heads must be the best, because 0.35 is greater than 0.32”

Is she correct?

Tick a box.

Yes

No

Give a reason for your answer.

[1 mark]



2 0

IB/M/Nov24/8300/2F

21 Some oil has

a mass of 537 g

a density of 895 000 g/m³

$$1 \text{ m}^3 = 1000 \text{ litres}$$

Work out the volume of the oil.

Give your answer in litres.

[2 marks]

Turn over for the next question

5

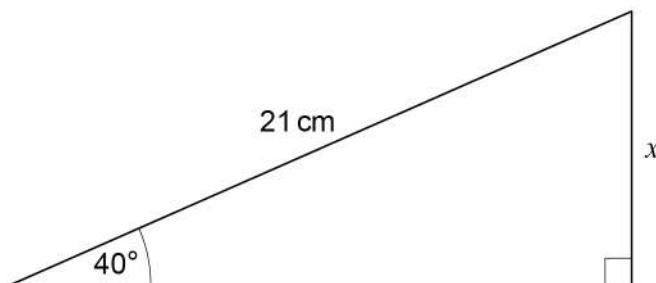
Turn over ►



22

Use trigonometry to work out the value of x .

Do not write
outside the
box



Not drawn
accurately

[3 marks]

Answer _____ cm

23

The length of a wall is 9 metres to the nearest metre.

Complete the error interval for the length of the wall.

[2 marks]

Answer _____ m \leq length $<$ _____ m



2 2

IB/M/Nov24/8300/2F

24 384 000 electric cars were sold this year.
This is 20% **more** than last year.
How many were sold **last year**?

Do not write
outside the
box

[3 marks]

Answer _____

25 Here are three terms.

$$xy$$

$$x^2$$

$$5y^2$$

Alec multiplies two of these terms.

Work out the **three** possible fully simplified answers.

[3 marks]

Answer _____

Answer _____

Answer _____

11

Turn over ►



2 3

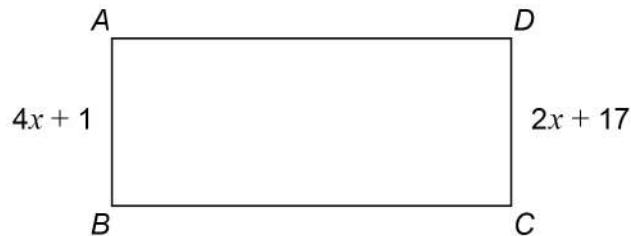
IB/M/Nov24/8300/2F

26

Here is a rectangle.

All measurements are in centimetres.

Not drawn accurately



$$AB : BC = 1 : 3$$

Work out the value of the area.

[5 marks]

Answer cm^2

END OF QUESTIONS