AQA

Please write clearly in block capitals.

Centre number ☐☐☐☐☐ Candidate number ☐☐☐☐

Surname _____

Forename(s) _____

Candidate signature _____

GCSE
MATHEMATICS

F

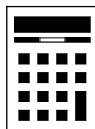Foundation Tier   Paper 2 Calculator

Monday 6 November 2017   Morning   Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:
* a calculator
* mathematical instruments.

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	
24–25	
TOTAL	

Instructions

* Use black ink or black ball-point pen. Draw diagrams in pencil.
* 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. 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.

Do not write outside the box

	Answer **all** questions in the spaces provided

1 How many minutes are there in $2\frac{1}{4}$ hours?

Circle your answer.

[1 mark]

135   145   215   225

2 Which of these numbers is **half** of a square number?

Circle your answer.

[1 mark]

1   2   3   4

3 Circle the value of the digit 3 in the number 17.03

[1 mark]

$\dfrac{3}{10}$ $\dfrac{1}{30}$ $\dfrac{3}{100}$ $\dfrac{1}{300}$

IB/M/Nov17/8300/2F

4   The value of A is double the value of B.

Circle the correct formula.

[1 mark]

$$A = B + 2 \qquad A = 2B \qquad A = \frac{B}{2} \qquad A = B^2$$

5 (a)   Simplify $y \times y$

[1 mark]

Answer _____

5 (b)   Simplify $5a + 2 - a + 9$

[2 marks]

_____

_____

Answer _____

Turn over for the next question

7

Turn over ▶

6 The table shows information about the birds in a garden.

Bird	Number
Robin	2
Sparrow	5
Wren	3
Lark	1

Draw a bar chart to show the information.

[3 marks]
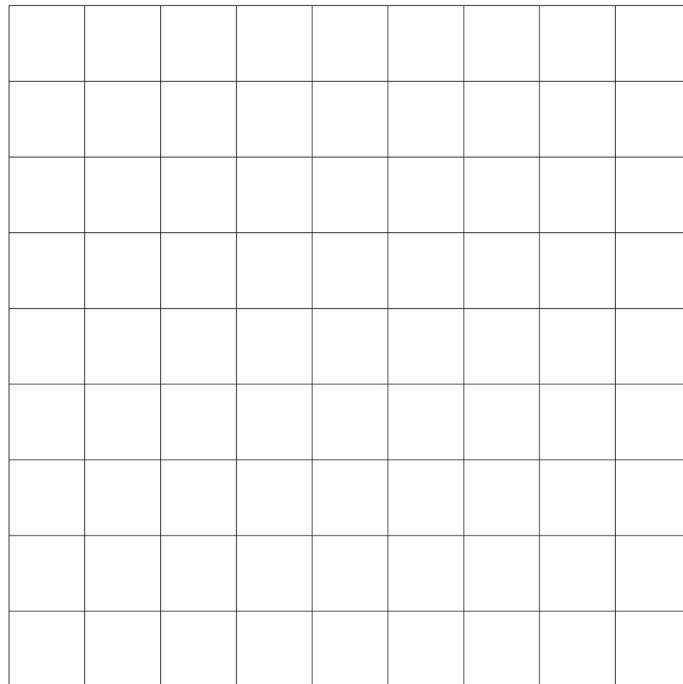
7   Eve has these coins.

Ola has these coins.

Eve gives **three** of her coins to Ola.

Now, Ola has the same amount of money as Eve.

Which coins does Eve give to Ola?

[3 marks]

_____

_____

_____

_____

_____

_____

_____

_____

Answer _____ , _____ , _____

Turn over for the next question

0 5

8 A dry cleaning shop has the following offers.

<table>
<tr>
<th>Suit</th>
<th>Dress</th>
</tr>
<tr>
<td>Normal price £12.50
1st suit   normal price
2nd suit   half price</td>
<td>Normal price £9.75
Three for the price of two</td>
</tr>
</table>

Work out the **total** price for 2 suits and 6 dresses.

[4 marks]

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Answer £ _____

Do not write outside the box

9 Karl has twin sisters.

The sum of the ages of Karl and his twin sisters is 39

In 4 years' time the twins will be 18

How old will Karl be in 4 years' time?

[3 marks]

Answer _____

Turn over for the next question

7

Turn over ▶

IB/M/Nov17/8300/2F

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10   One of the angles in a triangle is 60°

Tick a box for each statement.

	Must be true	**Cannot be true**	**Might be true**
The triangle is equilateral			
The triangle has at least one other acute angle			
The triangle is right-angled			
The other two angles are each less than 60°			

[4 marks]

IB/M/Nov17/8300/2F

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11 Which of these numbers has **exactly** two factors?

Circle your answer.

[1 mark]

6   7   8   9

12 Work out $\sqrt{7.5^2 + 18^2}$

Circle your answer.

[1 mark]

19.5   25.5   331.5   380.25

13 (a) Use your calculator to work out the exact value of $\dfrac{18\,953 \times 437}{11}$

[1 mark]

Answer _____

13 (b) Use approximations to 1 significant figure to check if your answer to part (a) is sensible.

[3 marks]

_____

_____

_____

_____

_____

10

Turn over ▶

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outside the
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14 Chris sells lawnmowers.

The table shows the number he sold each quarter for three years.

	Quarter 1	**Quarter 2**	**Quarter 3**	**Quarter 4**
2016	17	64	50	5
2015	9	72	61	1
2014	19	58	53	2

14 (a) In which year did he sell the most lawnmowers?

You **must** show your working.

[2 marks]

Answer _____

14 (b) He uses the table to decide the number of lawnmowers to stock each quarter.

At the **start** of which quarter should Chris stock the most lawnmowers?
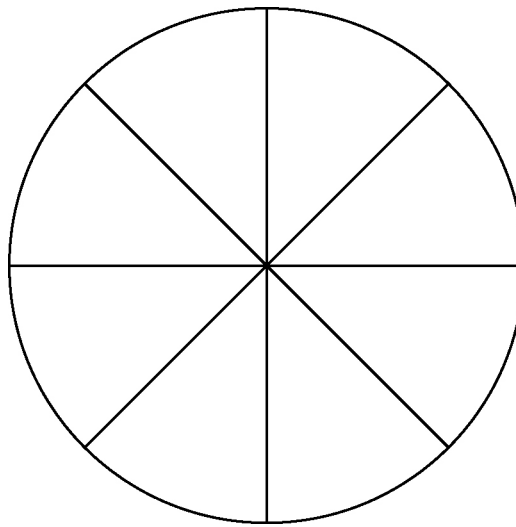Circle your answer.

[1 mark]

Quarter 1   Quarter 2   Quarter 3   Quarter 4

Do not write outside the box

15 In a test,

Section A has 80 marks

Section B has 120 marks.

Riya scores

55% in Section A

70% in Section B.

To pass, Riya needs to score 65% of the **total** marks.

Does she pass?

You **must** show your working.

[4 marks]

Answer _____

7

Turn over ▶

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16   A wheel is made of a circular rim and 8 spokes as shown.

Not drawn accurately

The length of each spoke is 37 cm

Work out the **total** length of the rim and spokes.

[3 marks]

Answer _____ cm

17   Here is a formula to convert degrees Celsius (°C) to degrees Fahrenheit (°F).

$$F = 1.8C + 32$$

F is the number of degrees Fahrenheit

C is the number of degrees Celsius

17 (a)   Show that   –40°C = –40°F

[2 marks]

17 (b)   The temperature is –15°C

Nick says,

     "Because the temperature is negative in Celsius, it **must** be negative in Fahrenheit."

Is he correct?

You **must** show your working.

[1 mark]

Answer

6

Turn over ▶

18   Here are five cards.

| 1 | 5 | 7 | 9 | 11 |
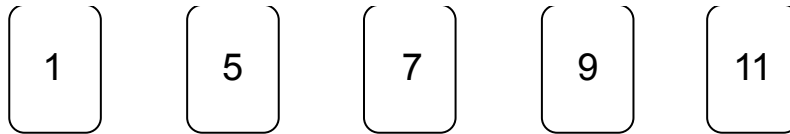
One of the cards is removed.

The mean of the numbers on the remaining four cards is 6

Which card was removed?

You **must** show your working.

[3 marks]

Answer _____

1 4

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19 (a) Divide 120 in the ratio 1 : 4

[2 marks]

Answer _____ : _____

19 (b) Write the ratio 7 : 4 in the form n : 1

[1 mark]

Answer _____ : _____

Turn over for the next question

6

Turn over ▶

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20 In 2015, Han was paid £1350 per month.

In 2016, he

had a 2% increase in his monthly pay

worked 37.5 hours per week

worked for 47 weeks.

Work out Han's average pay **per hour** for 2016

[5 marks]

Answer £ _____

Do not write outside the box

21 An experiment is carried out 200 times.

The possible outcomes are K, L and M.

21 (a) Complete the table.

[2 marks]

Outcome	K	L	M
Frequency	84	54	
Relative frequency	0.42		

21 (b) Altogether, the experiment is carried out 500 times.

How many times would you expect the outcome to be K?

[2 marks]

Answer _____

Turn over for the next question

9

Turn over ▶

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22 The table shows information about the UK and Germany.

	Population	**Area (square miles)**
UK	64 000 000	95 000
Germany	82 000 000	140 000

Population density = $\dfrac{\text{population}}{\text{area}}$

Compare the population densities of the UK and Germany.

[3 marks]

_____

_____

_____

_____

_____

_____

23 Which **one** of the following is discrete data?

Circle your answer.

[1 mark]

Mass of a television   Time taken to deliver a television

Height of a television mast   Number of televisions sold

24   Describe fully the **single** transformation that maps triangle *A* to triangle *B*.

[3 marks]

_____

_____

Turn over for the next question

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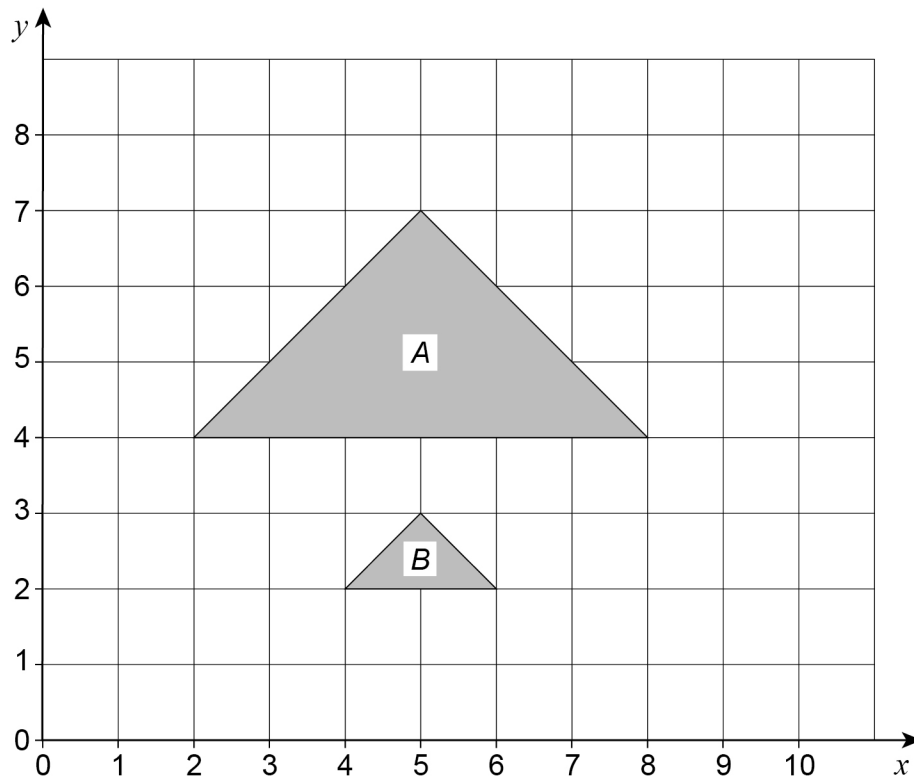
25 The graph shows information about prisms with the same volume.

Area of cross section (cm^2)

Length (cm)
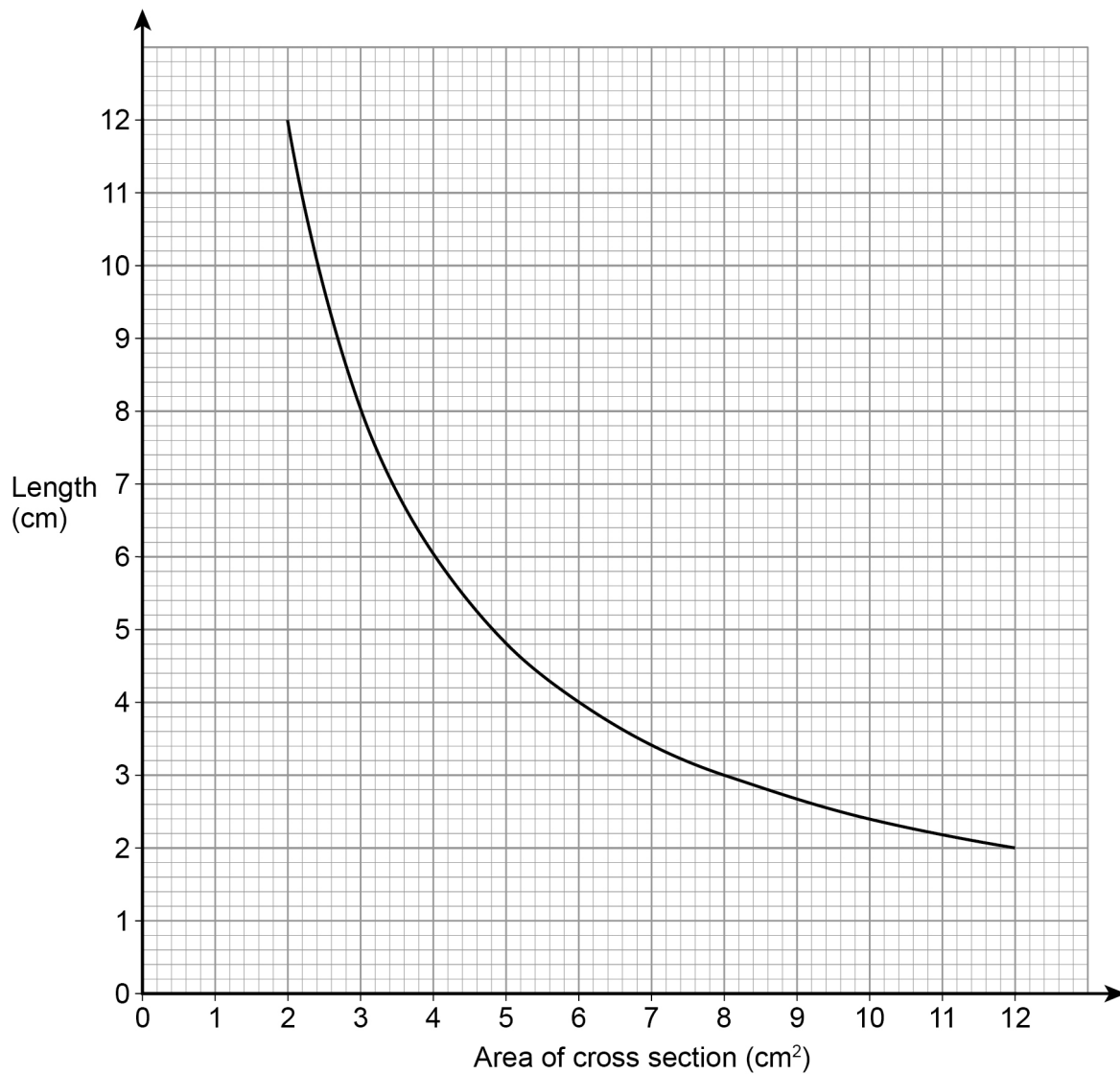
25 (a) Give **one** example to show the volume is 24 cm^3

[1 mark]

25 (b)   The diagram shows a prism with volume 24 cm^3

The height of the triangular cross section is h.
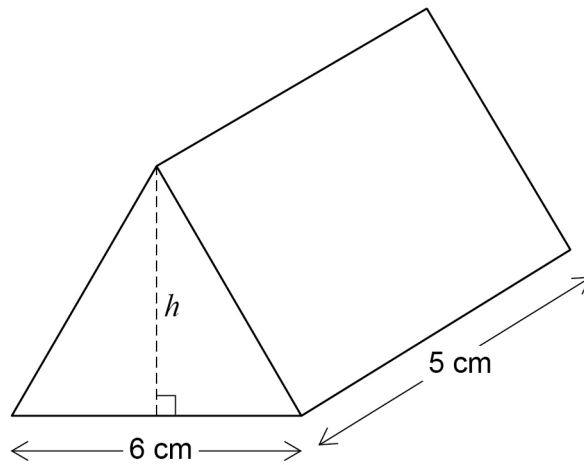
Work out the height, h.

[3 marks]

Answer _____ cm

Turn over for the next question

Turn over ▶

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26 A ball is thrown from a height of 15 metres.

It bounces to height h_1, then to height h_2 as shown.

Not drawn accurately

15 m

h_1

h_2
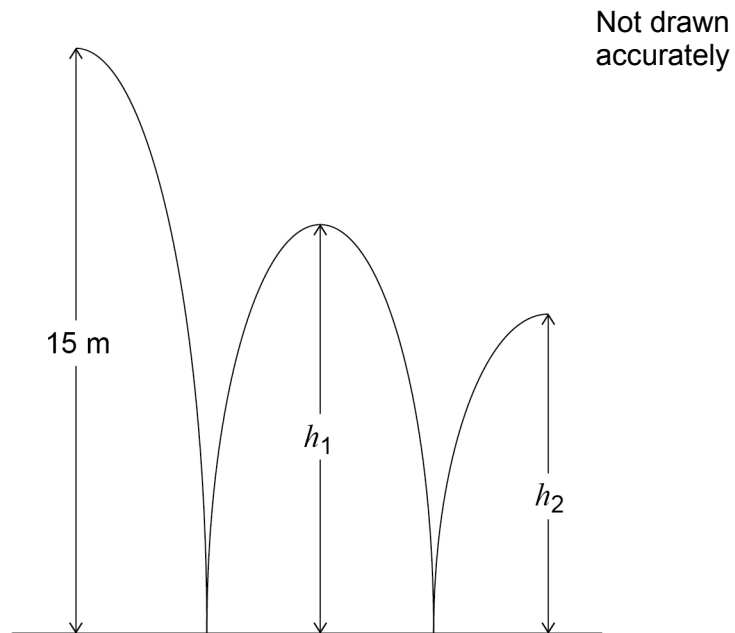
h_1 is three quarters of the original height.

26 (a) Jack expects h_2 to be three quarters of h_1

Work out the value of h_2 that he expects.

[2 marks]

Answer _____ metres

Do not write outside the box

26 (b)   In fact, h_2 is two thirds of h_1

How does this affect the answer to part (a)?

Tick a box.

☐   The ball bounced higher than he expected

☐   The ball bounced lower than he expected

Show working to support your answer.

[2 marks]

_____

_____

_____

_____

Turn over for the next question

4

Turn over ▶

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27 Solve $4(3x - 2) = 2x - 5$

[3 marks]

_____

_____

_____

_____

_____

$x =$ _____

28 Work out the next term of this quadratic sequence.

[2 marks]

| 5 | 8 | 14 | 23 | …… |

Answer _____

Do not write outside the box

29 Work out the size of angle x.

Not drawn accurately

3 cm

x

7 cm
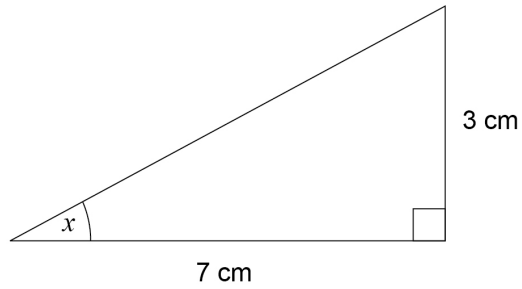
[2 marks]

Answer _____ degrees

END OF QUESTIONS

7

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