Instructions

- Use black ink or ball-point pen.
- Fill in the boxes at the top of this page with your name, centre number and candidate number.
- Answer all questions.
- Answer the questions in the spaces provided – there may be more space than you need.
- Calculators must not be used.

Information

- The total mark for this paper is 60
- The marks for each question are shown in brackets – use this as a guide as to how much time to spend on each question.
- Questions labelled with an asterisk (*) are ones where the quality of your written communication will be assessed.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.
GCSE Mathematics 2MB01

Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium $= \frac{1}{2}(a + b)h$

Volume of prism $= \text{area of cross section} \times \text{length}$
Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1  (a) Write the number 3460 in words.

...............................................................................................................................  (1)

(b) Write the number 258 correct to the nearest hundred.

...............................................................................................................................  (1)

(c) Write these numbers in order of size.
    Start with the smallest number.
    6.37  6.5  6.48  6.04  6.59

...............................................................................................................................  (1)

(Total for Question 1 is 3 marks)

2

(a) Write down the special name for the angle marked $x$.

...............................................................................................................................  (1)

(b) Measure the size of the angle marked $x$.

...............................................................................................................................  (1)

(Total for Question 2 is 2 marks)
The diagram shows the speed of a car.

(a) Write down the speed.

.............................................  mph

.............................................  kg

(b) Work out the weight of each box.

(Total for Question 3 is 3 marks)
4 The table shows the minimum temperature on each of six days in January.

<table>
<thead>
<tr>
<th>Minimum temperature</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td>5°C</td>
<td>5°C</td>
<td>-1°C</td>
<td>-2°C</td>
<td>-3°C</td>
<td>-3°C</td>
<td>-4°C</td>
</tr>
</tbody>
</table>

(a) Write down the lowest temperature.

............................................. °C

(1)

(b) Work out the difference between the temperature on Tuesday and the temperature on Saturday.

............................................. °C

(1)

On Sunday, the temperature was 8°C higher than the temperature on Saturday.

(c) Work out the temperature on Sunday.

............................................. °C

(1)

(Total for Question 4 is 3 marks)

5 (a) Simplify \( y + y + y + y \)

.............................................

(1)

(b) Simplify \( c \times d \times 5 \)

.............................................

(1)

(c) Simplify \( 2a + 4b + 3a - b \)

.............................................

(2)

(Total for Question 5 is 4 marks)
6 (a) Write down the value of $\sqrt{49}$

.............................................

(1)

(b) Write down the cube of 3

.............................................

(1)

(Total for Question 6 is 2 marks)

7 (a) On the grid of centimetre squares, draw an isosceles triangle.

(1)

(b) On the grid of centimetre squares, draw a rectangle with a perimeter of 10 cm.

(2)

(Total for Question 7 is 3 marks)
The table gives information about the cost of cinema tickets.

<table>
<thead>
<tr>
<th>Cinema tickets</th>
<th>Before 5pm</th>
<th>5pm and after</th>
</tr>
</thead>
<tbody>
<tr>
<td>adult ticket</td>
<td>£6.35</td>
<td>£7.55</td>
</tr>
<tr>
<td>child ticket (ages 2 – 12)</td>
<td>£4.75</td>
<td>£5.65</td>
</tr>
<tr>
<td>teen ticket (ages 13 – 18)</td>
<td>£5.05</td>
<td>£6.05</td>
</tr>
<tr>
<td>family ticket (for 4 people)</td>
<td>£19.00</td>
<td>£22.60</td>
</tr>
</tbody>
</table>

Mr and Mrs White have 2 children.
One child is aged 10
The other child is aged 14

Mr and Mrs White and their 2 children go to the cinema after 5pm.

It is cheaper for Mr and Mrs White to buy 1 family ticket than to buy 4 separate tickets.

How much cheaper?

£............................................

(Total for Question 8 is 4 marks)
(a) Write 0.7 as a fraction.

(b) Write 0.3 as a percentage.

(c) Write \( \frac{8}{12} \) in its simplest form.

(Total for Question 9 is 3 marks)

10 Here is part of a train timetable from Stamford to Stansted Airport.

<table>
<thead>
<tr>
<th></th>
<th>08 59</th>
<th>09 59</th>
<th>10 59</th>
<th>11 59</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stamford</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peterborough</td>
<td>09 18</td>
<td>10 18</td>
<td>11 18</td>
<td>12 18</td>
</tr>
<tr>
<td>Ely</td>
<td>09 53</td>
<td>10 53</td>
<td>11 53</td>
<td>12 53</td>
</tr>
<tr>
<td>Cambridge</td>
<td>10 08</td>
<td>11 08</td>
<td>12 08</td>
<td>13 08</td>
</tr>
<tr>
<td>Stansted Airport</td>
<td>10 45</td>
<td>11 45</td>
<td>12 45</td>
<td>13 45</td>
</tr>
</tbody>
</table>

A train leaves Stamford at 08 59

(a) At what time should this train get to Cambridge?

David gets to Ely station at 10 25
He wants to catch a train to Cambridge.

(b) How many minutes should David have to wait?

Janet needs to get to Stansted Airport before 13 00
She is going to catch a train from Peterborough.

(c) Write down the time of the latest train Janet can catch from Peterborough.

(Total for Question 10 is 3 marks)
The diagram shows a solid cuboid.

(a) Write down the number of faces the cuboid has.

.............................................

(1)

(b) On the centimetre isometric grid, make an accurate drawing of this cuboid.
   One edge has been drawn for you.

Diagram NOT accurately drawn

(Total for Question 11 is 3 marks)
12 You can use this graph to change between pounds and euros.

(a) Change 6 euros into pounds.

............................................. pounds

(1)

Amy changes 50 pounds into euros.

(b) How many euros should she get?

............................................. euros

(2)

(Total for Question 12 is 3 marks)
13 There are 200 counters in a bag. 
The counters are blue or red or yellow.

35% of the counters are blue. 
\[
\frac{1}{5}
\]

of the counters are red.

Work out the number of yellow counters in the bag.

.............................................

(Total for Question 13 is 4 marks)
\(ABC\) is a straight line.  
\(BD = BC\)  
Angle \(ADB = 80^\circ\)  
Angle \(BDC = 20^\circ\)  

Work out the size of the angle marked \(x\).  
Give reasons for your answer.

(Total for Question 14 is 4 marks)
Terry fills a carton with boxes.  
Each box is a cube of side 10 cm.  
The carton is a cuboid with  
length  60 cm  
width  50 cm  
height  30 cm  

Work out the number of boxes Terry needs to fill one carton completely.
16 (a) Expand \( 5(m + 2) \)

(b) Factorise \( y^2 + 3y \)

(c) Simplify \( a^5 \times a^4 \)

(Total for Question 16 is 3 marks)
Here are the ingredients needed to make 16 chocolate biscuits.

<table>
<thead>
<tr>
<th>Chocolate biscuits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makes <strong>16</strong> chocolate biscuits</td>
</tr>
<tr>
<td>100 g of butter</td>
</tr>
<tr>
<td>50 g of caster sugar</td>
</tr>
<tr>
<td>120 g of flour</td>
</tr>
<tr>
<td>15 g of cocoa</td>
</tr>
</tbody>
</table>

Sabrina has 250 g of butter
300 g of caster sugar
600 g of flour
and 60 g of cocoa

Work out the greatest number of chocolate biscuits Sabrina can make.
You must show your working.

(Total for Question 17 is 3 marks)
18 On the grid, draw the graph of $y = 2x - 1$ for values of $x$ from $-2$ to $3$ 

(Total for Question 18 is 3 marks)
The diagram shows the floor plan of Jill’s dining room.

Jill is going to cover the floor with wooden floorboards.

The floorboards are sold in packs.
One pack of floorboards will cover 2.25 m².

Work out how many packs Jill needs.
You must show all your working.

(Total for Question 19 is 4 marks)