AQA
General Certificate of Secondary Education
Foundation Tier
June 2014

Mathematics (Linear) 4365/2F

Paper 2

Friday 13 June 2014  9.00 am to 10.45 am

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

Time allowed
• 1 hour 45 minutes

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.
• Do all rough work in this book.

Information
• The marks for questions are shown in brackets.
• The maximum mark for this paper is 105.
• The quality of your written communication is specifically assessed in Questions 7, 14, 20 and 24. These questions are indicated with an asterisk (*).
• You may ask for more answer paper, tracing paper and graph paper. These must be tagged securely to this answer book.

Advice
• In all calculations, show clearly how you work out your answer.
Formulae Sheet: Foundation Tier

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

**Volume of prism** = area of cross section × length
Here is a list of numbers.

255  431  293  388  107  205

1 (a) Which is the largest number?
Circle your answer.

255  431  293  388  107  205

[1 mark]

1 (b) Which is the even number?
Circle your answer.

255  431  293  388  107  205

[1 mark]

1 (c) Use two of the numbers to make a correct addition.

[1 mark]

............ + ............ = 400

1 (d) Use two of the numbers to make a correct subtraction.

[1 mark]

............ − ............ = 50
2 A shop sells these 15 ice-creams.

Chocolate  Vanilla  Vanilla  Vanilla  Strawberry
Vanilla     Chocolate  Vanilla  Strawberry  Strawberry
Chocolate  Chocolate  Strawberry  Vanilla  Chocolate

2 (a) Complete the table.

[3 marks]

<table>
<thead>
<tr>
<th>Flavour</th>
<th>Tally</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chocolate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vanilla</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strawberry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total = 15
2 (b) The shop sells

7 cones      5 tubs      3 wafers.

Show this information on a bar chart.

[4 marks]
Here is a sequence of patterns.

Pattern 1

Pattern 2

Pattern 3

Pattern 4

3 (a) Complete the table.

[2 marks]

<table>
<thead>
<tr>
<th></th>
<th>Pattern 1</th>
<th>Pattern 2</th>
<th>Pattern 3</th>
<th>Pattern 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of shaded squares</strong></td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3 (b) How many shaded squares are in Pattern 7?

[1 mark]

Answer ........................................................................................................
Here are five flags.

4 (a) Which **three** flags have line symmetry?  

Answer ......................................, ...................................... and ......................................

4 (b) Which **two** flags do **not** have rotational symmetry?  

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

4 (c) Which flag has rotational symmetry but **not** line symmetry?  

Answer ......................................................................
5. Draw a line to match each angle to the correct name. [2 marks]

- right angle
- reflex angle
- acute angle
- obtuse angle
6 The table shows the cost of posting parcels.

<table>
<thead>
<tr>
<th>Weight of parcel (grams)</th>
<th>First Class</th>
<th>Second Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 100</td>
<td>£1.58</td>
<td>£1.33</td>
</tr>
<tr>
<td>101 – 250</td>
<td>£1.96</td>
<td>£1.72</td>
</tr>
<tr>
<td>251 – 500</td>
<td>£2.48</td>
<td>£2.16</td>
</tr>
<tr>
<td>501 – 750</td>
<td>£3.05</td>
<td>£2.61</td>
</tr>
<tr>
<td>751 – 1000</td>
<td>£3.71</td>
<td>£3.15</td>
</tr>
</tbody>
</table>

6 (a) A parcel weighs 400 grams.
What is the cost of sending it First Class?

[1 mark]

Answer £ .................................................................

6 (b) Jake wants to post a 600 gram parcel and an 800 gram parcel.
He posts them Second Class.
He pays with a £10 note.

How much change should he get?

[3 marks]

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

Answer £ .................................................................
**Football tickets**

- Adult: £58.90
- Junior: £21.50
- Over 65: £46.90

*7 (a) How much does one Adult ticket and one Junior ticket cost altogether? [2 marks]

Answer £ .................................................................

7 (b) Jose buys some Over 65 tickets. They cost £187.60

How many does he buy? [2 marks]

Answer .................................................................
Kim buys **three** tickets. They cost £89.90

What types of tickets does she buy? You **must** show your working.

Answer

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Football tickets

- **Adult**: £58.90
- **Junior**: £21.50
- **Over 65**: £46.90

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Turn over for the next question
8 Jade and Ben both have jobs.

Their pay in £ is worked out using this formula.

\[ \text{pay} = 8 \times \text{number of hours worked} + \text{bonus} \]

Their bonus is worked out using this table.

<table>
<thead>
<tr>
<th>Whole number of hours worked</th>
<th>1 to 5</th>
<th>6 to 10</th>
<th>11 to 15</th>
<th>16 to 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonus</td>
<td>£10</td>
<td>£20</td>
<td>£30</td>
<td>£40</td>
</tr>
</tbody>
</table>

8 (a) Jade worked 7 hours.

Work out her pay.

Answer £ .....................................................

8 (b) Ben is paid £150

How many hours did he work?

Answer ..................................................... hours
On this centimetre grid, draw one rectangle with

Perimeter = 20 cm

and

Area = 24 cm²

[2 marks]
Here are the temperatures in four places at 7:00 am one morning.

Aberdeen  $-15.8 \, ^\circ C$
London  $-4.9 \, ^\circ C$
Sheffield  $-7.6 \, ^\circ C$
Warwick  $-5.3 \, ^\circ C$

10 (a) Which place was the warmest?  
Answer .................................................................

10 (b) What was the difference in temperature between Aberdeen and Warwick?  
Answer ................................................................. \degree C

10 (c) At 4:00 pm the temperature in Sheffield was 1.7 \degree C higher than at 7:00 am. 
What was the temperature in Sheffield at 4:00 pm? 
Answer ................................................................. \degree C

11 Work out $\frac{3}{5}$ of 900  
Answer .................................................................
12 Use your calculator to work out

12 (a) $\sqrt{576}$ [1 mark]

Answer .................................................................

12 (b) $2.3^2 + \sqrt{5}$ [1 mark]

Answer .................................................................

12 (c) $\frac{1}{0.4^2}$ [1 mark]

Answer .................................................................

13 Megan took two tests.
Here are her results.

Geography test $\frac{13}{20}$

History test $\frac{16}{25}$

In which test did Megan get the higher percentage mark?
You must show your working. [2 marks]

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Answer .................................................................
The table shows the GCSE Mathematics results of the students in a school.

<table>
<thead>
<tr>
<th>Grade</th>
<th>U</th>
<th>G</th>
<th>F</th>
<th>E</th>
<th>D</th>
<th>C</th>
<th>B</th>
<th>A</th>
<th>A*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students</td>
<td>0</td>
<td>8</td>
<td>20</td>
<td>43</td>
<td>37</td>
<td>51</td>
<td>34</td>
<td>30</td>
<td>17</td>
</tr>
</tbody>
</table>

The school had a target that 60% of the students get grade C or higher.

Did the school meet its target?
You **must** show your working.

[5 marks]

Answer .................................................................................................
15 (a) Complete the table for \( y = 3x - 1 \)  

<table>
<thead>
<tr>
<th>( x )</th>
<th>-3</th>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>( y )</td>
<td>-10</td>
<td>-4</td>
<td>-1</td>
<td>2</td>
<td>8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[2 marks]

15 (b) On the grid draw the graph of \( y = 3x - 1 \) for values of \( x \) from -3 to 3  

[2 marks]
Here is a map of Sardinia.

Scale: 1 cm represents 25 km

16 (a) Work out the **actual** distance between Cagliari and Sassari. [3 marks]

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Answer ......................................................... km
16 (b) Mario's favourite beach is on a bearing of 165º from Olbia.

Draw this bearing and mark with a cross the position of the beach. [2 marks]

Turn over for the next question
50 cars arrive at a car park. The table shows the number of people in each car.

<table>
<thead>
<tr>
<th>Number of people</th>
<th>Number of cars</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

17 (a) One of the cars is chosen at random. Work out the probability that there are more than 3 people in the car.

\[ \text{Answer} \] ............................................................................................................................................

17 (b) Work out the total number of people in the 50 cars.

\[ \text{Answer} \] ............................................................................................................................................
18 (a) Simplify fully $3a + 4b + a - 2b$  

[2 marks]  

Answer ..........................................................................................  

18 (b) Solve $4x - 7 = 11$  

[2 marks]  

$x = ..............................................................................................  

Turn over for the next question
Here is a list of what you need to make 20 buns.

- 180 g butter
- 150 g flour
- 200 g sugar
- 4 eggs

Work out what you need to make 30 buns.

[3 marks]
Here are two games that can be played with ordinary six-sided fair dice.

**Game A**
Roll two dice
Add the numbers
The total is your score

**Game B**
Roll one dice
The number you get is your score

Which game gives a higher chance of scoring 6?
You must show your working.

Answer ......................................................................

[5 marks]
21 (a) Reflect the triangle in the line $y = 5$ [2 marks]
21 (b) Enlarge the shape by scale factor 4, centre of enlargement (1, 1).
Here is a right-angled triangle.

Four of these triangles are joined to make a square as shown.

Work out the area of the square.

[3 marks]

Answer ......................................................... cm$^2$
23 The diagram shows a trapezium.

23 (a) Work out the area of the trapezium. [2 marks]

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

Answer ............................................................... cm²

23 (b) The trapezium is the cross-section of this prism.

Work out the volume of the prism. [2 marks]

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

Answer ............................................................... cm³
Jack sees the bicycle he wants to buy in two shops.

**Bye-cycles**
- Price without VAT: £130
- VAT is 20%

**Just Bykes**
- Normal price: £195
- Now \( \frac{1}{4} \) off
- VAT is included

In which shop is the bicycle cheaper?
You must show your working.

Answer: ............................................................................................................
25 These expressions represent four numbers. The value of the median of the expressions is 12.

\[ x \quad 2x \quad 6x \quad 11x \]

Work out the value of the mean of the expressions.

Answer

Turn over for the next question
The diagram shows a rectangle, a semi-circle and a circle.

Work out the area of the circle.

[4 marks]

Answer .............................................. cm$^2$

END OF QUESTIONS
There are no questions printed on this page
There are no questions printed on this page