SECTION I

ANSWER ALL QUESTIONS IN THIS SECTION

Write your answers in the spaces provided. Remember to show all working.

1. (a) Calculate the value of \(2\frac{3}{4} \div \frac{5}{8}\), expressing your answer as a fraction. [3 marks]

(b) Convert \(2\frac{7}{8}\) to decimal form correct to 1 decimal place. [2 marks]

(c) Express 14.995 correct to 2 significant figures. [1 mark]
2. In a class, there are 40 students.

17 students do Science.
15 students do Art.
5 students do both Science and Art.

(a) Label and complete the Venn diagram to show the above information. [3 marks]

(b) How many students do only one subject? [2 marks]

(c) What is the probability that a student chosen at random does both subjects? [1 mark]
3. (a) Simplify the expressions.

(i) \( 8a - 4b + 5b \)  

(ii) \( 2x (3x + 5) - 6x^2 \)  

(b) Factorize completely

(i) \( 2a + 4b \)  

(ii) \( 5ab^2 - 15a^2b^3 \)
4. In the cafeteria, two different sizes of canned soft drinks are sold, **Can A** and **Can B**, not drawn to scale.

**Can A**
- Radius: 2 cm
- Height: 14 cm

**Can B**
- Radius: 4 cm
- Height: 14 cm

\[ h = 14 \text{ cm} \]

(a) What is the volume of **Can A** in cm\(^3\) ? \( \text{Use } \pi = \frac{22}{7} \) \[2 \text{ marks}\]

(b) Convert the volume of **Can A** from cm\(^3\) to litres. \[2 \text{ marks}\]

(c) Calculate the ratio of the volume of **Can A** to the volume of **Can B**. \[2 \text{ marks}\]
5. The quadrilateral $ABCD$ is shown in the diagram.

(a) $ABCD$ is reflected in the $y$-axis to produce its image $A'B'C'D'$. Draw and label the image $A'B'C'D'$ on the diagram below. [4 marks]

(b) Draw the lines of symmetry for $ABCD$ on the diagram above. [2 marks]
6. The calendar below shows the number of texts Ria sent during the month of April. The numbers of texts sent are bold and underlined (e.g., 3 represents three texts sent on that day).

<table>
<thead>
<tr>
<th>Sun</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td><strong>1</strong></td>
<td></td>
<td><strong>3</strong></td>
<td><strong>2</strong></td>
<td></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td><strong>3</strong></td>
<td><strong>2</strong></td>
<td><strong>4</strong></td>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td><strong>4</strong></td>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
<td><strong>5</strong></td>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>5</strong></td>
<td><strong>1</strong></td>
<td><strong>3</strong></td>
<td><strong>2</strong></td>
<td><strong>4</strong></td>
<td><strong>5</strong></td>
</tr>
<tr>
<td>29</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(a) How many texts were sent on Thursday 19\textsuperscript{th} April? [1 mark]

(b) Using the data given, complete the frequency table below. [2 marks]

<table>
<thead>
<tr>
<th>Number of texts</th>
<th>Tally</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(c) What is the total number of texts Ria sent? [1 mark]

(d) Calculate the mean number of texts Ria sent per day. [2 marks]
SECTION II

ANSWER TWO (2) QUESTIONS ONLY FROM THIS SECTION

7. (a) Lewis pays US $120.00 as a 10% down payment for his family's Caribbean vacation. The exchange rate is US $1.00 = TT $6.50.

(i) What is Lewis' down payment in TT dollars? [1 mark]

(ii) What is the total cost for the vacation in TT dollars? [2 marks]

(b) Mrs. Gift puts $7 200.00 in a fixed deposit account earning simple interest at a rate of 8% per annum, for 7 years.

(i) Calculate the interest earned on her investment. [2 marks]

(ii) What is the total amount she will receive from her investment? [1 mark]
7. (c) For this question, you are required to show all construction lines.

Using a pair of compasses, ruler and pencil only,

(i) Construct the triangle LMN, with lengths LM = MN = LN = 5 cm. [3 marks]

(ii) Bisect the angle XYZ. [3 marks]
8. (a) The diagram shows an airplane, a cruise ship, and a jet skier, **not drawn to scale**. The plane is 330 m above sea level and the cruise ship is 560 m from the jet skier.

(i) What is the distance between the airplane and the cruise ship? [3 marks]

(ii) Calculate the size of the angle \(x\) as shown in the diagram. [3 marks]
8. (b) Paul goes to Rita’s house to study. He leaves home at 3:55 p.m. and arrives at Rita’s house at 4:35 p.m. Paul lives 800 m away from Rita. Paul and Rita’s homework assignment is to draw a map of the neighbourhood, using a scale of 1 cm to represent 200 m.

(i) How many centimetres are used to represent the actual distance between Paul’s house and Rita’s house on the scale drawing for the map? [1 mark]

(ii) What is the distance from Paul’s house to Rita’s house, in kilometres? [1 mark]

(iii) How many minutes did Paul take to arrive at Rita’s house? [1 mark]

(iv) How long did Paul take to arrive at Rita’s house, in hours? [1 mark]

(v) What is Paul’s average speed while walking from his house to Rita’s house, in kilometres per hour? [2 marks]
9. (a) The number of pens and pencils Raj and Ann bought and the amounts each spent are shown.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raj</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$51.00</td>
</tr>
<tr>
<td>Ann</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$39.00</td>
</tr>
</tbody>
</table>

Use $x$ to represent the cost in dollars of one pen and $y$ to represent the cost in dollars of one pencil.

(i) Write an equation using $x$ and $y$ to represent the total cost of the pens and pencils Raj bought.

(ii) Using a pair of simultaneous equations, determine the cost of 1 pen and 1 pencil.

[2 marks]

[4 marks]
9. (b) The equation \( y = 2x + 1 \) gives the relationship between \( x \) and \( y \).

(i) Use the equation to complete the table. 

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

(ii) Using the grid provided, draw the graph of \( y = 2x + 1 \). 

(iii) State the \( y \) intercept for the graph \( y = 2x + 1 \).