SECTION I

ANSWER ALL QUESTIONS IN THIS SECTION

Write your answers in the spaces provided and show ALL working.

1. (a) Calculate the exact value of

\[ \left( \frac{1}{2} + \frac{1}{3} \right) + \frac{5}{9} \]  

[4 marks]

(b) Express \( 2 \frac{3}{8} \) in decimal form, stating your answers

(i) exactly

[1 mark]

(ii) correct to 2 significant figures

[1 mark]

TOTAL: 6 marks
2. A toy vendor bought 120 toys for $1500.00.

(a) (i) Calculate the Cost Price of one toy. [2 marks]

(ii) If each toy is sold to make a profit of 50%, how much, in dollars, is the total profit gained by the vendor? [2 marks]

(b) On a map, 1 cm represents 15 km. What is the actual distance, in km, between 2 towns, A and B, that are 3.5 cm apart on the map? [2 marks]

TOTAL: 6 marks
3. Mr. Allen opened a fixed deposit account at the National Bank on the day that his son was born. On his son’s fifth birthday, he gained $1000.00 simple interest on the account. Interest was calculated at 4% per annum.

(a) How much money did Mr. Allen invest in the account when his son was born? [4 marks]

(b) What was the total amount of money in the account at the time of his son’s fifth birthday? [2 marks]

TOTAL: [6 marks]
4. A book costs $15 more than a magazine.
   
   Let $m$ represent the cost, in dollars, of a magazine.
   
   (a) Write an algebraic expression, in terms of $m$, to represent the cost of one book. [1 mark]
   
   (b) The cost of four magazines and one book is $50.00.
       
       Write an equation, in terms of $m$, to represent this information. [2 marks]
   
   (c) Find the cost, in dollars, of
       
       (i) one magazine. [2 marks]
       
       (ii) one book [1 mark]

TOTAL: [6 marks]
5. In the figure below, the line AB is parallel to CD.

The line HG cuts AB and CD at points E and F respectively.

(a) Calculate the size, in degrees, of angle $x$. Give a reason for your answer.

[2 marks]
(b) A triangle ABC undergoes a reflection in the x-axis to form its image A'B'C'.

On the diagram below, draw and label the image A'B'C'.

[4 marks]
6. A teacher kept a record of the number of times the twenty-five students in his class were late during the month of June. The results were recorded below.

<table>
<thead>
<tr>
<th>Number of times late</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

(a) Complete the frequency table below to represent the data above.

(b) How many students were late 5 times during the month of June? [1 mark]

(c) How many students were late less than 3 times for the month of June? [2 marks]

TOTAL: [6 marks]
7. (a) The diagram below, not drawn to scale, represents a block of cheese measuring 28 cm by 20 cm by 15 cm.

(i) Calculate the total surface area, in cm$^2$ of the block of cheese. [5 marks]

(ii) Betty uses half of the block of cheese to make some cheese paste. Calculate the volume of cheese used. [2 marks]
(b) Mr. Grant earned a gross annual income of $108,000.00 in 2010.

His tax allowances for 2010 are shown in the table below.

<table>
<thead>
<tr>
<th>Non-Taxable Allowances</th>
<th>Amount per annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Allowance</td>
<td>$60,000.00</td>
</tr>
<tr>
<td>House</td>
<td>$18,000.00</td>
</tr>
<tr>
<td>Education</td>
<td>$20,000.00</td>
</tr>
</tbody>
</table>

(i) If Mr. Grant claims the **full** Education and House allowances, determine his Taxable Income for the year 2010? [3 marks]

(ii) If Mr. Grant is charged Income Tax at a rate of 25%, how much Income Tax did he have to pay in 2010? [2 marks]

TOTAL: [12 marks]
8. The equation \( y = 2x - 1 \) represents the relationship between two variables \( x \) and \( y \).

(a) Use the given equation \( y = 2x - 1 \) to complete the table below.

<table>
<thead>
<tr>
<th>( x )</th>
<th>0</th>
<th>2</th>
<th>4</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>( y )</td>
<td>-1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) On the answer sheet provided (See page 13), use the axes and scale provided to plot the points from part (a) above and draw the graph of \( y = 2x - 1 \).

(c) (i) Using the same pair of axes in (b) above, draw the graph of \( y = 6 \).

(ii) State the coordinates of the point of intersection of the graphs \( y = 2x - 1 \) and \( y = 6 \).

(d) A man stands at P on a vertical cliff and sees a coastguard vessel R out at sea. If Q is a point vertically below P at sea level such that \( PQ = 36 \) metres, and \( QR = 100 \) metres, calculate the size, in degrees, of \( \theta \) on the figure (i.e. angle PRQ).

TOTAL: [12 marks]
9. Mrs. Hunte conducted a class survey to find out whether or not to have a class party.

The responses of the 30 students in her class are recorded in the table below.

<table>
<thead>
<tr>
<th>No. Students in favour</th>
<th>No. students not in favour</th>
<th>No. students with no response</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>10</td>
<td>2</td>
</tr>
</tbody>
</table>

(a)(i) Draw a Pie-Chart to display the results of the survey. [4 marks]

Mrs. Hunte decided that she will have the party if more than 50% of the students agree.

(ii) Do you think Mrs. Hunte would have the class party? Give your reason. [2 marks]
(b) The regular price of a Washing Machine is $3600.00.

It can be bought in either of two ways.

PLAN A: Pay cash with a discount of 20%

PLAN B: Buy on Hire Purchase by making 24 monthly payments of $200.00. No deposit needed.

Calculate:

(i) How much money is saved on the regular price if the washing machine is purchased using Plan A? [2 marks]

(ii) The discounted price to be paid using Plan A. [1 mark]

(iii) The Hire Purchase Price using Plan B. [2 marks]

(iv) How much money is saved by purchasing the washing machine using Plan A instead of Plan B? [1 mark]

TOTAL: [12 marks]