Q. No. 33. (a) If \( A = \{1, 2, 4, 5, 6\}, \ B = \{3, 4, 5, 6\} \) and \( C = \{6, 7, 8, 9, 10\} \) then show that
\[
A \cap (B \cap C) = (A \cap B) \cap C
\]

\[
A \cap (B \cap C) = (A \cap B) \cap C
\]

\[
A \cap (B \cap C) = (A \cap B) \cap C
\]
(b) Find the square root of 10 upto 2 decimal places.

\[ \sqrt{10} \]

Q.No. 34. (a) Evaluate the following and express the answer into decimal number system.

\[ \frac{1234}{5} \]

Q.No. 34. (b) Ayesha and Meerab started a business with Rs.150000 and Rs.180000 respectively. After one year they earned profit of Rs.55000. Find the share of each one in the profit.

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Q.No. 35. (a) Find two solutions for the equation \( x + 5y = 6 \)
(b) The price of 2 books and 4 pencils is Rs.160 while the price of 4 such books and 1 pencil is Rs.215. Find the price of one book and one pencil.

Q. No.36 (a) Construct a rhombus ABCD when \( m\overline{AB} =4\,\text{cm} \) and \( m\overline{AC} =6\,\text{cm} \).

\( m\overline{AC} =6\,\text{cm} \) \( \text{and} \) \( m\overline{AB} =4\,\text{cm} \).

(b) Construct a kite ABCD where \( m\overline{AB} =3\,\text{cm}, \) \( m\overline{BC} =5\,\text{cm} \) and length of its longer diagonal = \( m\overline{AC} =7\,\text{cm} \).

\( m\overline{AC} =7\,\text{cm} \), \( m\overline{BC} =5\,\text{cm} \), \( m\overline{AB} =3\,\text{cm} \).
Q.No: 37. (a) The height of a conical tent is 7 metre and radius of its base is 6 metre. Find the volume of air present in the tent. \( (\pi = \frac{22}{7}) \)

\[
\text{Volume} = \frac{1}{3} \pi r^2 h = \frac{1}{3} \times \frac{22}{7} \times 6^2 \times 7 \\
= \frac{22 \times 6^2 \times 7}{7} = 22 \times 6^2 \\
= 22 \times 36 = 792 \text{ cubic metres}
\]

(b) Find the mean of the following frequency table.

<table>
<thead>
<tr>
<th>Class interval</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>2</td>
</tr>
<tr>
<td>6-10</td>
<td>3</td>
</tr>
<tr>
<td>11-15</td>
<td>5</td>
</tr>
<tr>
<td>16-20</td>
<td>4</td>
</tr>
<tr>
<td>21-25</td>
<td>1</td>
</tr>
</tbody>
</table>

\[\text{Mean} = \frac{1}{n} \sum_{i=1}^{n} f_i x_i = \frac{2+3+5+4+1}{2+3+5+4+1} \times 12.5 \\
= \frac{15}{15} \times 12.5 = 12.5\]