1. Consider the distribution of grades in a class of 60 students that is given by:

<table>
<thead>
<tr>
<th>Grades</th>
<th>60</th>
<th>55</th>
<th>50</th>
<th>45</th>
<th>40</th>
<th>35</th>
<th>30</th>
<th>25</th>
<th>20</th>
<th>15</th>
<th>10</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td># students</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>9</td>
<td>16</td>
<td>13</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

(a) Plot the histogram of this grade distribution.
(b) Calculate the average grade of the class \( \langle g \rangle \).
(c) Calculate the dispersion in the grades \( \sigma^2 \equiv \langle g^2 \rangle - \langle g \rangle^2 \).
(d) Compare the histogram with the Gaussian distribution

\[
N(g) = C e^{-(g - \langle g \rangle)^2 / \sigma^2}.
\]

You have to determine \( C \) by the condition \( \sum_g N(g) = 60 \).

2. Text 2.9.

3. Text 2.22.

4. Text 2.28.

5. Text 2.34.