5. [10 points] The table below gives several values of a function $q(u)$ and its first and second derivatives. Assume that all of $q(u)$, $q'(u)$, and $q''(u)$ are defined and continuous for all real numbers $u$.

<table>
<thead>
<tr>
<th>$u$</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>$q(u)$</td>
<td>30</td>
<td>23</td>
<td>19</td>
<td>20</td>
<td>24</td>
<td>25</td>
<td>24</td>
</tr>
<tr>
<td>$q'(u)$</td>
<td>0</td>
<td>-6</td>
<td>-2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>-2</td>
</tr>
<tr>
<td>$q''(u)$</td>
<td>-9</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>-5</td>
<td>0</td>
</tr>
</tbody>
</table>

Compute each of the following. Do not give approximations. If it is not possible to find the value exactly, write NOT POSSIBLE.

a. [2 points] Compute $\int_5^2 q''(t) \, dt$.

**Answer:** $\int_5^2 q''(t) \, dt = \underline{\text{______________}}$

b. [2 points] Compute $\int_5^1 (-2q''(u) + 2u) \, du$.

**Answer:** $\int_5^1 (-2q''(u) + 2u) \, du = \underline{\text{______________}}$

c. [2 points] Suppose that $q(u)$ is an even function. Compute $\int_{-5}^5 q(u) \, du$.

**Answer:** $\int_{-5}^5 q(u) \, du = \underline{\text{______________}}$

d. [2 points] Suppose that $q(u)$ is an even function. Compute $\int_{-5}^5 (q'(u) + 7) \, du$.

**Answer:** $\int_{-5}^5 (q'(u) + 7) \, du = \underline{\text{______________}}$

e. [2 points] Compute the average value of $-5q'(u)$ on the interval $[1, 4]$.

**Answer:** \underline{\text{______________}}