Data Sheet
Archimedes’ Principle Activity

Part I (50pts)

Determine the volume of the ring/tube using Archimedes’ Principle and compare your results to the volume of the ring/tube calculated from physical measurements. Do not tie the thread directly to the balance; use the paper clip as a hook. Assume that the density of the water is 1.0 g/cm³. Neatly show all work and provide all necessary data. If the TA cannot duplicate your results from the data that you provide, your score will be drastically reduced.

Volume of ring/tube via Archimedes’ Principle (A): _______________

Volume of ring/tube via Physical Measurement (B): _______________

Percent Difference = \[
\frac{A - B}{(A + B)/2} \times 100\% = \]

<table>
<thead>
<tr>
<th>Percent Difference</th>
<th>&lt;=3%</th>
<th>&lt;=5%</th>
<th>&lt;=10%</th>
<th>&lt;=15%</th>
<th>&lt;=20%</th>
<th>&gt;20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points</td>
<td>50</td>
<td>45</td>
<td>40</td>
<td>25</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>
Part II (50pts)

Determine the \textit{minimum} number of pennies required to sink your block if the pennies are loaded on the block uniformly. Pennies minted after 1983 have an average mass of 2.49 grams. Assume that the density of the water is 1.0 g/cm\(^3\). Neatly show all work and provide all necessary data. If the TA cannot duplicate your results from the data that you provide, your score will be drastically reduced.

Predicted minimum number of pennies required to sink the block: _________________

Actual number of pennies required to sink the block as witnessed by the TA: __________

Absolute value of the difference between the prediction and actual: ________________

<table>
<thead>
<tr>
<th>Difference</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points</td>
<td>50</td>
<td>46</td>
<td>42</td>
<td>38</td>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>

Initial parameters have been set to:

- Predicted minimum number of pennies required to sink the block: _________________
- Actual number of pennies required to sink the block as witnessed by the TA: __________
- Absolute value of the difference between the prediction and actual: ________________