Quiz 1 (10 pts) Chemistry 121 – Dr. Price Name ________________

Report all values with correct significant figures and units.

1. (1 point) Convert 5.010 x 10^6 microliters to liters.
   \[ 5.010 \times 10^6 \mu L \times \frac{1 L}{10^6 \mu L} = 5.010 L \]
   \[ 1 \text{L} = 1,000,000 \mu L \]

2. (1 point) Convert 60.36 m to mm.
   \[ 60.36 \text{ m} \times \frac{100 \text{ cm}}{1 \text{ m}} \times \frac{10 \text{ mm}}{1 \text{ cm}} = 6036 \times 10^3 \text{ mm} = 6.036 \times 10^4 \text{ mm} \]

3. (3 points) Write each number in scientific notation and determine the number of significant figures:

<table>
<thead>
<tr>
<th>Number</th>
<th>Significant Figures</th>
<th>Scientific Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>12040</td>
<td>4</td>
<td>(1.204 \times 10^4)</td>
</tr>
<tr>
<td>0.0000236</td>
<td>3</td>
<td>(2.36 \times 10^{-5})</td>
</tr>
<tr>
<td>25000.0</td>
<td>6</td>
<td>(2.50000 \times 10^4)</td>
</tr>
<tr>
<td>0.0005030</td>
<td>4</td>
<td>(5.030 \times 10^{-4})</td>
</tr>
</tbody>
</table>

4. (3 points) A 43.438 g sample of a metal is placed into a 50 mL graduated cylinder as shown:

   a. What is the initial volume of water in the cylinder? \(18.9 \text{ mL}\).
   
   b. What is the final volume in the cylinder with the metal cylinder added? \(28.9 \text{ mL}\).
   
   c. What is the volume of the metal sample (in cm^3)?
      \(10.0 \text{ mL} \times \frac{1 \text{ cm}^3}{1 \text{ mL}} = 10.0 \text{ cm}^3\)
   
   d. What is the density of the metal?
      \(\frac{43.438 \text{ g}}{10.0 \text{ mL}} = 4.343 \text{ g/mL}\)

5. (2 points)
   a. Label the following circles as containing a mixture or a pure substance.
   b. Label substances in the circles as element or compound.

   - Pure substance
   - Compound
   - Element
   - Mixture