Worksheet #3
Chem 099

1. Identify the following element or symbol.
   a. Cr  
   b. Al  
   c. Kr  
   d. F  
   e. manganese  
   f. cobalt  
   g. tin  
   h. iron

2. Fill in the table below

<table>
<thead>
<tr>
<th>Element Symbol</th>
<th>Group</th>
<th>Period</th>
<th>Metal / Non-metal / Metalloid</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cl</td>
<td>4A</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2A</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Zn</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. Decide if the following is an ionic or molecular compound.

   a. Na₂S  
   b. ClBr₃  
   c. NO₂  
   d. TiCl₄  
   e. Cr₂O₃  
   f. CH₄  
   g. AlI₃  
   h. CaF₂

4. Fill in the table below.

<table>
<thead>
<tr>
<th>Isotope</th>
<th>¹⁴C</th>
<th></th>
<th>⁷⁹Br</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atomic #</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protons</td>
<td></td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Neutrons</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrons</td>
<td></td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Mass #</td>
<td>40</td>
<td>72</td>
<td></td>
</tr>
</tbody>
</table>

5. Boron has two naturally occurring isotopes: B-10 and B-11. The B-10 has an actual mass of 10.01294 amu and an abundance of 19.9%. The B-11 has an actual mass of 11.00931 amu with an abundance of 80.1%. Calculate the average weight and compare to the value on the periodic table.
6. Define each of the following terms:
   a. Atomic Number

   b. Mass Number

   c. Atomic Mass

   d. Are the mass number and the atomic mass the same thing? Why or why not?

7. Round each of the following element's atomic masses to the nearest 0.1 amu.
   a. Mg

   b. Cr

   c. Ni

   d. Br