Classification of Elements

Classify each element as a metal, non-metal or metalloid based on its position on the Periodic Table. Also classify the family it is in.

<table>
<thead>
<tr>
<th>M = Metal</th>
<th>NM = Non-Metal</th>
<th>MO = Metalloid</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Halogen</td>
<td>B. Transition Metal</td>
<td>C. Alkaline Earth Metal</td>
</tr>
<tr>
<td>F. Other Metal</td>
<td>G. Alkali Metal</td>
<td>H. Inner-transition Metal</td>
</tr>
</tbody>
</table>

_____ Niobium  
_____ Radon  
_____ Radium  
_____ Uranium  
_____ Rubidium  

_____ Nitrogen  
_____ Silver  
_____ Bismuth  
_____ Bromine  
_____ Sulfur  

_____ Iodine  
_____ Neon  
_____ Lithium  
_____ Lead  
_____ Calcium  

_____ Osmium  
_____ Silicon  
_____ Antimony  

Element Code

Each numbered exercise contains element clues that will help you fill-in the blanks to know the missing word. Use the symbol for each element in each blank.

1. _____ _____ ______
   a. Transition Metal number 24
   b. A common solid halogen
   c. Family 13 bears this name

2. _____ _____ ______
   a. An active alkaline earth metal with 56 protons
   b. The alkali metal of period 3
   c. The metal element that makes up table salt

3. _____ _____ ______
   a. The first of the alkali metals
   b. The first element of family 16
   c. A period 2 nonmetal with 5 valence electrons

4. _____ _____ ______
   a. Element with atomic number 31
   b. The last of the alkaline earth metals
   c. Mendeleev predicted the existence of this metalloid

5. _____ _____ ______
   a. The first element in the actinoid series
   b. Period 2 nonmetal with 6 valence electrons
   c. The last of the noble gases

6. _____ _____ _____ ______
   a. A transition metal used in incandescent light bulbs.
   b. Period 4, Group 15 element
   c. The second element in Group 15
   d. Period 3 element with 6 valence electrons
### Identifying Unknown Elements

1. This element is in the same family as lead and it has fewer protons than sodium. ________________________________

2. This element has an atomic number that is one greater than platinum. ________________________________

3. This element has the most protons of any element in group 15. ________________________________

4. This element has the more than 50 but less than 75 protons and it is in group 17. ________________________________

5. This group 2 element has fewer protons than bromine, but more protons than sulfur. ________________________________

6. This element has the lowest atomic number of any group 16 element. ________________________________

7. This element has an atomic number that is double the atomic number of silicon. ________________________________

8. This element has more valence electrons than oxygen, fewer valence electrons than neon, more protons than sodium, but fewer protons than argon. ________________________________

9. This element has an atomic number lower than that of aluminum and one less valence electron than the group 16 elements. ________________________________

10. This element is in group 1 and has a high atomic number than chlorine, but a lower atomic number than bromine. ________________________________
Atomic Structure
Fill in the blanks using your periodic table and information given.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Symbol</th>
<th>Atomic #</th>
<th>Mass #</th>
<th># of Protons</th>
<th># of Neutrons</th>
<th># of Electrons</th>
</tr>
</thead>
<tbody>
<tr>
<td>He</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium</td>
<td></td>
<td>30</td>
<td></td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Br</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum</td>
<td></td>
<td>13</td>
<td>14</td>
<td>14</td>
<td>92</td>
<td></td>
</tr>
<tr>
<td>Na</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>92</td>
</tr>
<tr>
<td>Krypton</td>
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<td>20</td>
<td></td>
<td>47</td>
<td>61</td>
<td>87</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>98</td>
</tr>
</tbody>
</table>

**Periodic Table Scavenger Hunt**

Which element is a metal: Ba or At?
Which period is Ca in?
What is the number of the group N is in?
Which element is an alkali metal: Rb or Al?
Which element is a halogen: Na or Cl?
Which element is a noble gas: Ne or Br or O?
Which element would be a positive ion in a compound: Sr or Te?
How many electron dots should As have?
Which element has 5 valence electrons: B or P?
Which element has 18 electrons?
How many neutrons does bromine-80 have?