HW 7.8 Periodic Table

Directions: Name each family, then list 3-4 properties for each family of elements. You may need to use an old textbook, your old notes, or the internet to answer. (2pts each)

1. **Group 1A** Alkali metals
   - one electron in outermost shell, easily ionized, silvery and soft, low melting points, very reactive with H2O

2. **Group 2A** Alkaline earth metals
   - two electrons in outer shell, easily ionized, low density and melting points, very reactive but not as much as alkali metals, soft (but not as much as alkali metals)

3. **Group 7A** Halogens
   - low melting points and boiling points, very reactive with 7 electrons in outermost shell at room temp, elements span all states of matter

4. **Group 8A** Noble gases
   - odorless, colorless, nonreactive, full outer shell

5. **Group B** Transition metals
   - good conductors of heat and electricity, malleable and ductile, less reactive than alkali metals, high melting points (apart from Hg), high densities

Directions: Classify each element as metal, nonmetal, or metalloid. Then list 3-4 properties you’d expect each element to have. You may need to use an old textbook, your notes, or the internet to answer. (2pts each)

6. **Nitrogen** nonmetal
   - gas at room temperature
   - diatomic molecule
   - non-reactive
7. **Sodium** *metal*
   - Very reactive with water and air
   - Soft, cut w/ a butter knife
   - Lustrous and malleable

8. **Silicon** *metalloid*
   - Shiny, brittle, semiconductor
   - Has 4 valence electrons

9. **Chlorine** *nonmetal*
   - Diatomic molecule, gas that is greenish-yellow
   - Used in disinfectants and bleach, toxic
   - Low boiling point, low density

10. **Neon** *nonmetal*
    - Noble gas, not chemically reactive
    - Low density, odorless
    - Glows orange-red when electrical current is applied

**Directions:** Complete the table based on your knowledge of the Periodic table. (2pts each)

<table>
<thead>
<tr>
<th>Element</th>
<th># of valence electrons</th>
<th>Ion formed</th>
<th># of electron shells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfur</td>
<td>6</td>
<td>(gain 2 e⁻), 2⁻ ionic</td>
<td>3</td>
</tr>
<tr>
<td>Oxygen</td>
<td>6</td>
<td>(gain 2 e⁻), 2⁻ ionic</td>
<td>2</td>
</tr>
<tr>
<td>Calcium</td>
<td>2</td>
<td>(lose 2 e⁻), 2⁺ ionic</td>
<td>4</td>
</tr>
<tr>
<td>Strontium</td>
<td>2</td>
<td>(lose 2 e⁻), 2⁺ ionic</td>
<td>5</td>
</tr>
<tr>
<td>Gallium</td>
<td>3</td>
<td>(lose 3 e⁻), 3⁺ ionic</td>
<td>4</td>
</tr>
</tbody>
</table>

corresponds to group #/ column

corresponds to period #/ row