Section Review

Objectives
• Explain the difference between an element and a compound
• Distinguish between a substance and a mixture
• Identify the chemical symbols of elements, and name elements, given their symbols

Vocabulary
• element
• compound
• chemical symbol
• chemical change

Part A Completion

Use this completion exercise to check your understanding of the concepts and terms that are introduced in this section. Each blank can be completed with a term, short phrase, or number.

A substance is either a(n) 1 or a(n) 2.

Compounds are made up of 3, which are always present in the same 4 in a given compound. Compounds can be broken down into simpler substances by 5 means.

If the composition of a material is fixed, it is a 6.

If the composition of a material may vary, it is a 7.

Each element is represented by a one- or two-letter 8.

For example, carbon is represented by the symbol 9, while potassium is represented by the symbol 10.

Part B True-False

Classify each of these statements as always true, AT; sometimes true, ST; or never true, NT.

9. Heating a chemical compound produces elements.

10. Compounds can be broken down into elements by physical means.

11. An element is the simplest form of matter that has a unique set of properties.

12. Compounds are represented by chemical formulas.
Part C Matching

Match each description in Column B to the correct term in Column A.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.</td>
<td>a. substance that can be separated into simpler substances only by chemical means</td>
</tr>
<tr>
<td>14.</td>
<td>b. a physical blend of two or more components</td>
</tr>
<tr>
<td>15.</td>
<td>c. one or two letters that represent an element</td>
</tr>
<tr>
<td>16.</td>
<td>d. simplest form of matter that has a unique set of properties</td>
</tr>
<tr>
<td>17.</td>
<td>e. a change that produces matter with a different composition than the original matter</td>
</tr>
</tbody>
</table>

Part D Questions and Problems

Answer the following questions in the space provided.

18. Classify each substance as an element or a compound.

   a. water  
   b. oxygen  
   c. table salt  
   d. sucrose  
   e. gold

19. Write the chemical symbols for each of the following elements.

   a. potassium  
   b. lead  
   c. sodium  
   d. chlorine  
   e. sulfur

20. Name the chemical elements represented by the following symbols.

   a. Cu  
   b. H  
   c. Ag  
   d. Fe  
   e. N