Name: Date: Period:

# The Periodic Table and Chemical Changes Homework

**Identify the element(s)using the clues in the questions below.**

1. Chlorine is used to keep bacteria out of pools and hot tubs. What other element has similar chemical and physical properties and is also commonly used to disinfect water and skin? (Here is a hint: it has over 3 times and less than 4 times the number of protons.) _____

2. Copper is an excellent conductor of electricity and heat and has historically been used to make coins in almost every civilization. What other two elements with similar conductive properties are considered "coinage metals"?_____

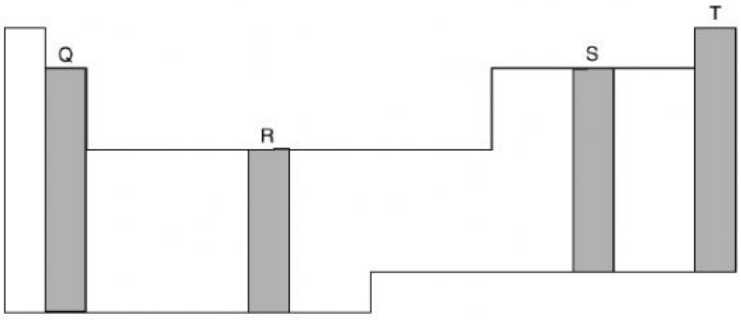
**Decide whether the following compounds contain ionic (I) or covalent (C) bonds:**

| | | |
|---|---|---|
| **$PbO_2$____** | **$PBr_5$ _____** | **$NI_3$ _____** |
| **$CCl_4$ _____** | **$Li_2O$_____** | **$SnO_2$_____** |

**Remember:** A covalent bond is always between 2 or more _____.

Elements found in which shaded area of this periodic table undergo the fewest chemical reactions?

**A** Q
**B** R
**C** S
**D** T




**Remember:** If you change the _____, you change the compound.
**Determine the ratio of the elements in the compounds below.**

| | | |
|---|---|---|
| lead iodide ($Pb^{+2}$ $I^-$) | carbon tetrachloride | sulfur hexafluoride |
| formula: $PbI_2$ | formula $CCl_4$ | formula $SF_6$ |
| Pb:I = ___ : ___ | C:Cl = ___ : ___ | S:F = ___ : ___ |

**YOU CAN'T CHANGE THESE RATIOS WITHOUT CHANGING THESE COMPOUNDS!**

It was a **CHEMICAL CHANGE** if a new _____ was formed.

**Clues:**

- _____ is absorbed or released
- A change in _____ is observed
- A _____ forms out when liquids or solutions are mixed
- A _____ is formed and bubbles are observed.

**Important Fact:** A pure substance is either an _____ or a _____.

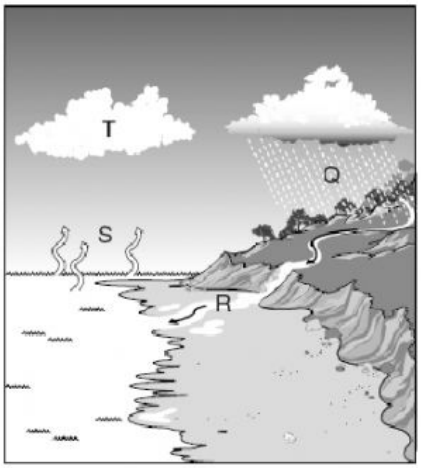
**REMEMBER:**

It was a **PHYSICAL CHANGE** if all it did was

- change _____ and _____
- _____
- or change between _____, _____ and _____

1. Which of the following is an example of a chemical change?

**A** Ice cracking
**B** Sugar dissolving
**C** Milk souring
**D** Lead melting




2. The diagram shows physical changes that occur in the water cycle. Which of these shows condensation?

**A** Q
**B** R
**C** S
**D** T

3. Which process best demonstrates a chemical change in distilled water?

**A** Freezing the water
**B** Separating the water into its elements
**C** Calculating the water's density
**D** Dissolving sugar in the water

4. What characteristic of water remains the same no matter what is dissolved in it?

**A** The ratio of hydrogen to oxygen
**B** The ability to refract light
**C** The hydroxide ion concentration
**D** The freezing temperature

5. Which of these describes a chemical change?

**F** Frost disappears from a window in the morning.
**G** A decrease in temperature reduces the volume of a gas.
**H** Soot is formed as a candle burns.
**J** A cup of hot tea cools down.