

**SECTION 3 - 1 REVIEW****WATER****VOCABULARY REVIEW** Define the following terms.

1. polar compound \_\_\_\_\_  
\_\_\_\_\_
2. hydrogen bond \_\_\_\_\_  
\_\_\_\_\_
3. cohesion \_\_\_\_\_
4. adhesion \_\_\_\_\_

**MULTIPLE CHOICE** Write the correct letter in the blank.

- \_\_\_\_\_ 1. In a water molecule,
- |   |   |
|---|---|
| a. all of the atoms have a slight positive charge.  | c. the oxygen atom has a slight positive charge and the hydrogen atoms have a slight negative charge. |
| b. the oxygen atom has a slight negative charge and the hydrogen atoms have a slight positive charge. | d. all of the atoms have a slight negative charge.  |
- \_\_\_\_\_ 2. When sodium chloride is dissolved in water, the sodium ions
- |  |  |
|--|--|
| a. are attracted to the oxygen atoms of water molecules.   | c. are attracted to each other.                |
| b. are attracted to the hydrogen atoms of water molecules. | d. do not dissociate from the sodium chloride. |
- \_\_\_\_\_ 3. Hydrogen bonds
- |  |   |
|--|---|
| a. form between hydrogen atoms in different molecules. | c. hold water molecules to one another.   |
| b. are strong bonds.                                   | d. hold the two hydrogen atoms together in a molecule of hydrogen gas, H <sub>2</sub> . |
- \_\_\_\_\_ 4. When a glass is filled to the brim with water, the water appears to bulge from the sides of the glass due to
- |                 |                    |              |              |
|-----------------|--------------------|--------------|--------------|
| a. capillarity. | b. thermal energy. | c. adhesion. | d. cohesion. |
|-----------------|--------------------|--------------|--------------|
- \_\_\_\_\_ 5. When liquid water is heated, most of the energy that the water initially absorbs is used to
- |   |  |
|---|--|
| a. raise the temperature of the water.                                      | c. make the water boil.                                  |
| b. break the covalent bonds between the hydrogen and oxygen atoms in water. | d. break the hydrogen bonds between the water molecules. |

**SHORT ANSWER** Answer the questions in the space provided.

1. Why is water a good solvent? \_\_\_\_\_  
\_\_\_\_\_
2. What kinds of substances besides water can be involved in hydrogen bonding? \_\_\_\_\_  
\_\_\_\_\_
3. What property of water allows it to stick to a dry surface, such as a wooden countertop?  
\_\_\_\_\_
4. How does water help cells keep an even temperature despite temperature changes in the environment? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. **Critical Thinking** Explain why water forms large, round drops as it falls from a faucet with a slow leak. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. **Critical Thinking** Water is often called the universal solvent because it dissolves most substances that are important to living things. What does this suggest about the nature of those substances?  
\_\_\_\_\_  
\_\_\_\_\_

**STRUCTURES AND FUNCTIONS** The diagram below represents a single water molecule. Draw three other water molecules near it, and use dashed lines to indicate where hydrogen bonds would form between the molecule shown below and the ones you drew.

