States of Matter and van Der Waals Attractions **Name**_____

1) Are molecules in ice completely still or are they moving?

2) Describe the difference at a molecular level between the structure and motion of molecules in a solid liquid and gas?

3) What affect does the van der Waals attraction have on molecules?

4) You are shown three different molecular substances, all at room temperature. One is a solid, one a liquid, and one a gas. What can you say about the strength of the van der Waals attraction between molecules of each substance? Explain why you think this.

5) Explain what is wrong with the following statement: “During the phase change from liquid to gas the molecules separate from each other because the van der Waals attraction got weaker.” Be sure to explain the correct reason why the molecules do separate from each other.