Kinetic Molecular Theory and Changes of State (chapter 5.4)

Name: _____ Block: _____

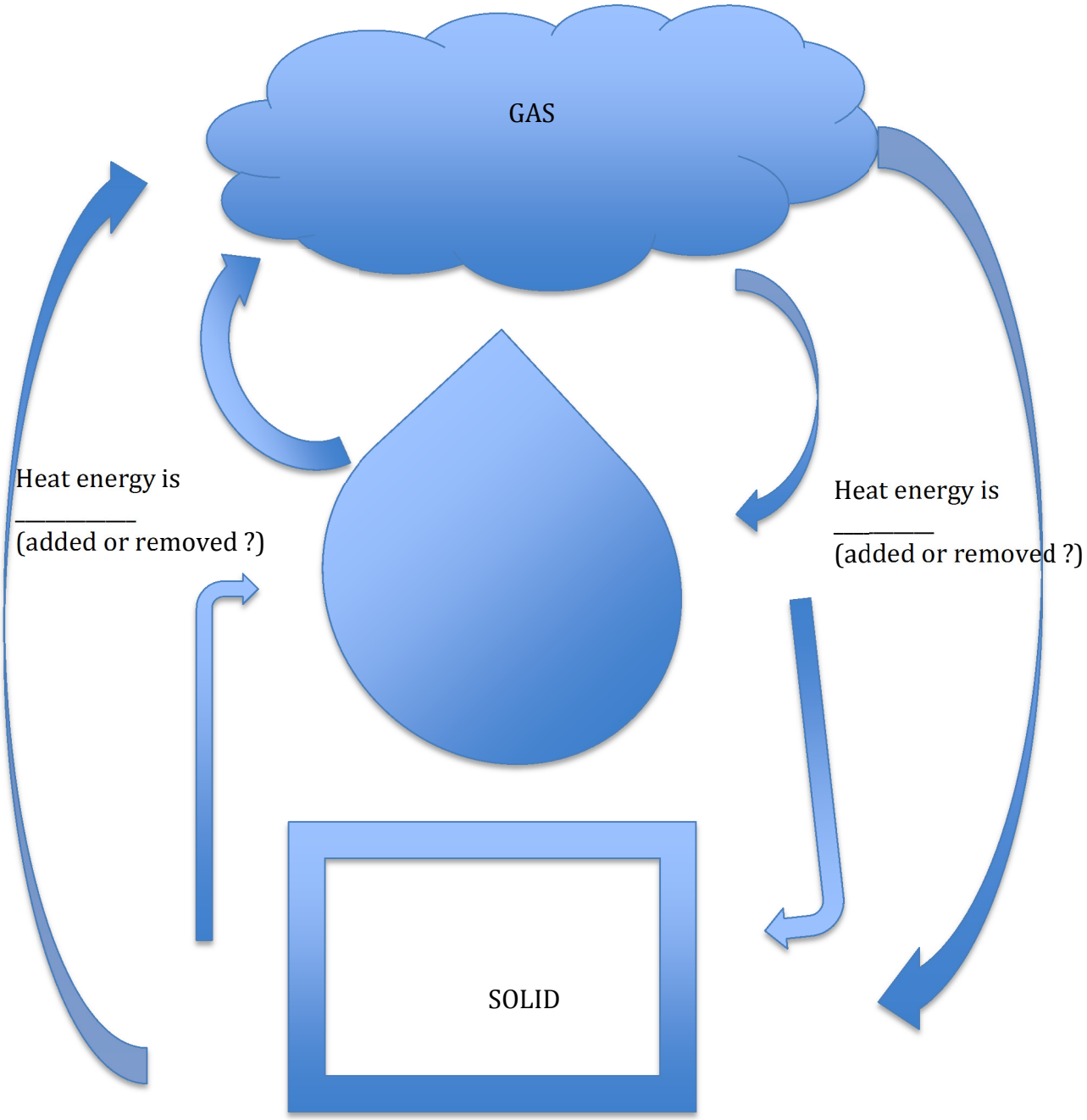
1. Rank each of the ***States of Matter*** **(**fill in each of the spaces in the chart with the appropriate state: **solid, liquid, or gas)** in terms of the following descriptors:

Descriptor	Smallest	Middle	Largest
distance between particles in the matter			
force of attraction between the particles in the matter			
energy of the particles in the matter (speed of vibration)			
chances that particles of matter will bump into each other			

2. Complete the chart below

	SOLID	LIQUID	GAS
Describe the type of motion of the particles in the matter (use words and diagrams)			

3. **Changes of State:** Complete the diagram below, describing the changes of state of matter.
    a. Beside EACH ARROW, name the process that is taking place.
    b. Within each state (solid/liquid/gas) draw a sketch of the particles showing how close they are together, and use arrows to indicate the relative speed of the particles.



4. **Dissolving:** Do the following:
    a. Put 20.0 mL of water into a 25.0 mL graduated cylinder. A few grains at a time, add 5.0 mL of salt. Agitate the mixture in order to help the salt dissolve.
        i. Before mixing, what total volume of water + salt? _____
        ii. After mixing, what is the total volume of water + salt? _____

    b. Put 5.0 mL of water into a 10.0 mL graduated cylinder. Add 5.0 mL of isopropyl alcohol. Agitate the mixture in order to help the alcohol dissolve.
        i. Before mixing, what total volume of water + alcohol? _____
        ii. After mixing, what is the total volume of water + alcohol? _____

    c. Use the KMT (Kinetic Molecular Theory) to explain your results for parts a (ii) and b (ii). Explain in words AND with diagrams showing the particles of matter in the mixtures.

5. **TEXTBOOK questions: Page 180/181, Do #3, 4, 7, 8, 10, 12,**