

Worksheet #3

- ①
- a) evaporation - change from liquid to gas at temp $<$ boiling point; only at surface of liquid
 - b) sublimation - change from solid to gas skipping liquid
 - c) boiling - change from liquid to gas (at boiling point)
 - d) melting - change from solid to liquid

② Endothermic. Energy is required to overcome the intermolecular forces holding the solid together.

- ③
- Add heat \rightarrow particles start to vibrate faster
 - when the particles have enough kinetic energy they overcome the IMF and move farther apart
 - at this point they are liquid

- 4) • in any sample of a liquid, the particles have a range of energies
• some will have enough energy to vaporize.
• if they are near the surface, they will vaporize

5) same answer as # 4

6) the pressure a vapor exerts on the surface of a liquid

7) 101.3 kPa

because water boils at 100°C

∴ vapor pressure = atmospheric pressure at 100°C

8) IMF - stronger forces = lower vapor pressure
Temp - higher temp = higher v.p.