

Ch. 13 Review WKst KEY

Vocab

1. kinetic energy
 2. gas pressure
 3. evaporation
 4. boiling point
 5. crystal
 6. allotropes
 7. melting point
 8. pascal
- sol'n) barometer

Practice Problems

13.1

1. The pressure reading would decrease with an increase in altitude

$$2. \frac{754.3 \text{ mmHg} | 1 \text{ atm}}{760 \text{ mmHg}} = \frac{0.99 \text{ atm} | 101.3 \text{ kPa}}{1 \text{ atm}} = 100.5 \text{ kPa}$$

3. Average kinetic energy is directly proportional to kelvin temperature. $-100^{\circ}\text{C} + 273 = 173\text{K}$, $73^{\circ}\text{C} + 273 = 346\text{K}$
* Because the kelvin temperature increases by a factor of two, the average kinetic energy does also

13.2

1. No attractions between gas particles compared to an existing attraction between liquid particles
2. Ethanol because 75°C is very close to ethanol's boiling point

13.3

1. The carbon atoms in graphite are arranged in widely-spaced sheets. In a diamond each atom is strongly bonded to 4 other atoms in a 3D structure
2. They are both pure carbon in different forms

NO #3

4. Molecular solid because the forces that hold it together are weaker than ionic solids.
5. NaCl (sodium chloride) is a crystalline solid. It is an orderly, repeating, 3D pattern

13.4

1. Melting point decreases as pressure increases
2. This line represents the set of all temperature to pressure values at which the solid + vapor phases are in equilibrium
3. This line represents the set of all temperature to pressure values at which the liquid + vapor phases are in equilibrium
4. 101.3 kPa (1 atm)