1. Calculate the following things having to do with water. Look up information you might need in your textbook, in the appendices. On an exam, this information would be available in the front of the exam.

Volume of liquid water that can be produced from 1.0 L of H₂ gas and 1.0 L of O₂ gas at 298 K and 1.00 atm.

Enthalpy change when one mole of liquid water vaporizes at 298 K at constant pressure.

Heat change when the temperature of 2.0 L of water is increased from 25°C to 100.0°C.
Multiple Choice: **There may be more than one correct answer!**

Which statements about heat are true?

A. Heat is measured in units of energy.
B. Heat is a measure of the average kinetic energy of an individual molecule or atom in a sample.
C. Heat is a measure of the total kinetic energy of all the molecules or atoms in a sample.
D. Amount of heat is an extensive property.

Which of the following is true about a substance at 0 Kelvin?

A. The volume of a gas would be zero, according to Charles’ Law
B. The kinetic energy of the particles in the substance is zero.
C. The root mean square speed of the particles is zero.
D. It is at the melting temperature of ice.

Boiling occurs when the vapor pressure of a liquid equals the atmospheric pressure. In the high altitude city of Denver, does the boiling point of water occur

A. at 100 °C
B. above 100 °C
C. below 100 °C
D. below 373 K

According to kinetic molecular theory, the pressure of a gas depends on

A. The number of molecules per unit volume
B. The volume that the gas particles occupy
C. The mass of the particles of the gas
D. The root mean square speed of the particles of the gas

According to kinetic molecular theory, the kinetic energy of particles in a sample of a gas depends on

A. The number of molecules per unit volume
B. The van der Waals constants of the gas
C. The mass of the particles of the gas
D. The temperature

The Maxwell-Boltzmann distribution of molecular speeds

A. is a graph of number of molecules vs. speed
B. is different for the same molecule, at different temperatures
C. is the same for different molecules at the same temperature
D. is a function that approaches zero as speed goes to zero