Name _____   Date _____
Honors Physics   Thermodynamics WS #5H
Period _____   Mrs. Nadworny

Average Kinetic Energy

Directions: Read textbook pages 376 - 385. Solve the following problems using the GUESS method and proper significant figures. Be sure to show ALL work.

1. On the graph below, write the labels *lower temperature* and *higher temperature* to identify the curve that depicts the kinetic energy distribution of particles in a liquid at a lower temperature and at a higher temperature.
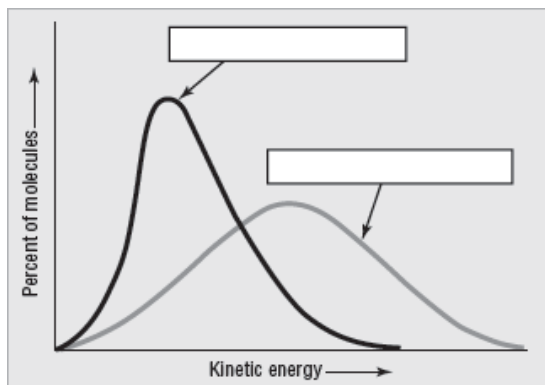
2. A 50 g container of nitrogen gas is at a temperature of 500. K. What is the average kinetic energy of the molecules in the gas?

3. Calculate the kinetic energy of an individual gas molecule of mass 3.5 x 10^{-26} kg moving at a speed of 600. m/s.

4. A sample of gas has an average kinetic energy of 4.71 x 10^{-22} joules. Calculate the average temperature of the sample.

Answers in size order: 6.3 x 10^{-21}, 1.04 x10^{-20}, 22.8