Physics 231 -   3-Nov-99

- Announcements

- Video

- Kinetic Theory
  - Kinetic energy and Temperature
  - Atomic Velocities

- Examples

- Quiz

Kinetic Theory

Kinetic Energy, Velocity and Temperature

Q1 -   Answer = c
Q2 - Problem A - Last name A-K

What is the total kinetic energy in one mole of hydrogen gas at 20 °C? (N_A = 6.02 x 10^{23} mol^{-1}, k=1.38 x10^{-23} J/K)

A. 8.3 J

B. 166 J

C. 250 J

D. 2430 J

E. 3650 J

Q1 - Answer = c
Q2 - Problem B - Last Name L-Z

- What is the average speed of a molecule of N_2 (mass = 4.6 x 10^{-26} kg) in a container held at a temperature of 300 °C? (k = 1.38 x 10^{-23} J/K)

A. 415 m/s

B. 718 m/s

C. 519 m/s

D. 300 m/s

E. 293 m/s