

Quiz 11

Name: _____

A sample of gas contains 1 mole of Hydrogen gas. H_2 mass is 3.34×10^{-27} kg

1. At what temperature is the rms speed of a Hydrogen molecule equal to 2200 m/s?

2. What is the Thermal Energy of this sample?

$$T_C = T - 273.15^\circ C$$

$$T_F = (9^\circ F/5^\circ C) T_C + 32^\circ F$$

$$K_{avg} = 3/2 k_B T$$

$$E_{th} = 3/2 N k_B T$$

$$v_{rms} = \sqrt{\frac{3k_B T}{m}}$$

$$k_B = 1.38 \times 10^{-23} \text{ J/K}$$

$$\Delta L = \alpha L_i \Delta T$$

$$\Delta V = \beta V_i \Delta T$$

$$n = 6.022 \times 10^{23} \text{ molecules}$$