

Chapter 13 Temperature and Kinetic Theory

1. Be able to state the four postulates of the Ideal Gas model.
2. Be able to describe what is meant by the terms “macroscopic” and “microscopic.”
3. Be able to convert among Kelvin, Celsius, and Fahrenheit scales given an appropriate conversion relation.
4. Be able to use the ideal gas law to find an unknown among P , V , N , and T .
5. Be able to use the ideal gas law to find the unknown among P , V , and T for a single sample of gas that undergoes changes without losing or gaining particles.
6. Be able to calculate the total energy possessed by an ideal gas, given P , V , N , and T .
7. Be able to calculate v_{rms} and $\overline{\text{KE}}$ for a known gas at a given temperature.
8. Be able to describe several phenomena that can be more or less accurately accounted for by the Ideal Gas model.
9. Be able to describe some failures of the Ideal Gas model to account for real systems.
10. Be able to use the Maxwell-Boltzmann graph of the distributions of particle speeds in a gas to identify hotter and cooler samples of gas and to describe how the curve changes as the temperature of the gas changes..
11. Be able to describe things that you have observed that illustrate something we have dealt with in this chapter.