Thursday Reading Assessment: Unit 8, Momentum

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1 Memory Bank

- $P_1V_1/T_1 = P_2V_2/T_2$ ... Collection of ideal gas scaling relationships.

2 Momentum

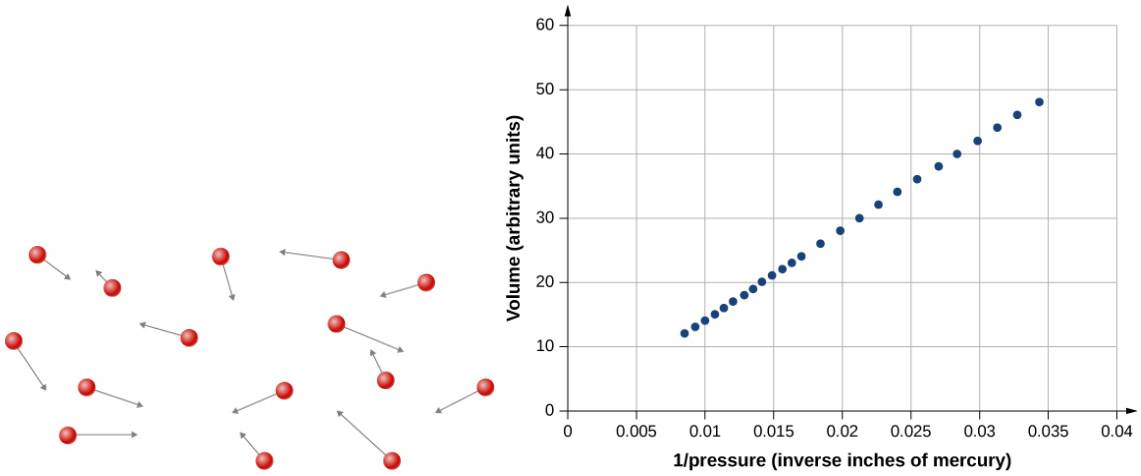

Figure 1: (Left) Molecule model of an ideal gas. (Right) Data demonstrating one of the scaling relationships.

1. Suppose a gas has a pressure of 10 kilo-pascals and is inside a piston with a volume of 1 liter. If the temperature is held constant, and the volume is compressed to 0.5 liters, what is the new pressure?

2. Suppose a gas has a pressure of 10 kilo-pascals and is inside a piston with a volume of 1 liter. If the volume is held constant, and the temperature is increased from 300 degrees Kelvin to 600 degrees Kelvin, what is the new pressure?