Contents:

1° Ideal gas
   • $PV = NkT = nRT$
   • (Includes laws/ideas of Boyle, Charles, Gay-Lussac, Avogadro and Dalton/Democritus)

2° Avogadro’s number $N_A$ and mole
   • $R = N_A k$
   • One mole of table tennis balls

3° Standard temperature and pressure

4° Absolute zero
   • The experiments of Charles and Gay-Lussac

5° Kinetic theory
   • Relationship of absolute temperature and average kinetic energy per particle
   • Root-mean-square speed

6° Maxwell-Boltzmann velocity distribution
   • (Formula not required)