Summary

- **Nuclear Reactions**
  - Nucleon number conserved
  - Charge conserved
  - Energy/Momentum conserved
  - α particles = $^{4}_{2}\text{He}$ nuclei
  - β^{-} particles = electrons
  - γ particles = high-energy photons

Survival: $N(t) = N_0 e^{-\lambda t}$ $\qquad T_{1/2} = \dfrac{0.693}{\lambda}$

- **Decays**
  - Half-Life is time for ½ of atoms to decay