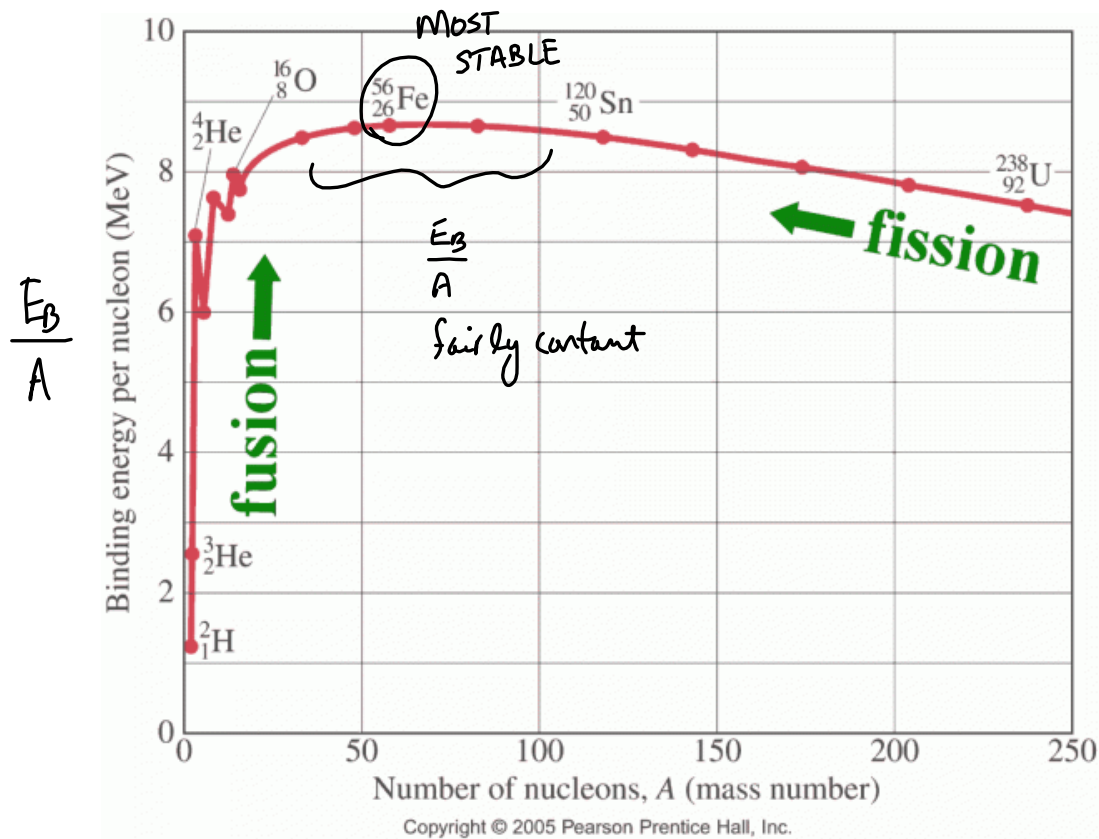
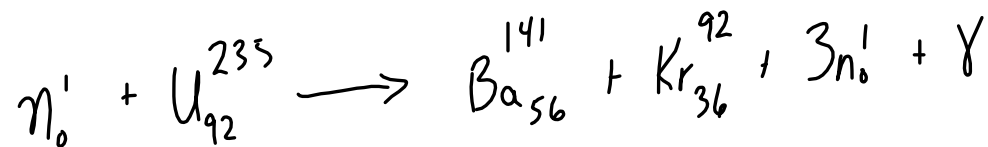


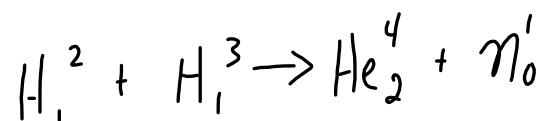
Binding Energy per Nucleon



Fission:



Fusion:



Example

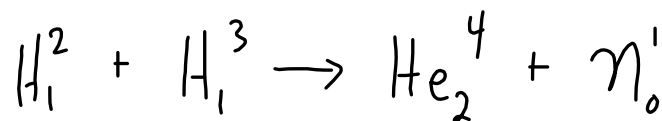
$$200 \times 10^6 \text{ J s}^{-1}$$

$$200 \times 10^6 \text{ eV} \left(\frac{1.6 \times 10^{-19} \text{ J}}{1 \text{ eV}} \right)$$

Calculate the number of fission reactions taking place per second in a 200 MW nuclear reactor, assuming that 200 MeV of energy is released per fission reaction. (Ans: $6 \times 10^{18} \text{ s}^{-1}$)

Example

Calculate the energy released in the fusion reaction:



$$E = mc^2$$

Mass Data:

$$H^2 \sim 2.014102 \text{ u}$$

$$H^3 \sim 3.016049 \text{ u}$$

$$He^4 \sim 4.002603 \text{ u}$$

$$(Ans: 17.6 \text{ MeV})$$