The curve reaches a peak of about 8.8 MeV/nucleon at $A = 62$, corresponding to the element nickel. The spike at $A = 4$ shows the unusual stability of the $^4_2\text{He}$ structure.
As the mass number $A$ increases, stable nuclides have an increasing ratio of neutrons to protons.
(a) The nuclide $^{226}_{88}\text{Ra}$ decays by alpha emission to $^{222}_{86}\text{Rn}$. The alpha particle $^{4}_{2}\text{He}$ is produced.

(b) Potential-energy curve for an alpha particle and $^{222}_{86}\text{Rn}$ nucleus. The alpha particle tunnels through the potential-energy barrier.

(c) Energy-level diagram for the system. $^{226}_{88}\text{Ra}$ can alpha-decay directly to the $^{222}_{86}\text{Rn}$ ground level or it can alpha-decay to an excited level $^{222}_{86}\text{Rn}^*$, which can then decay to the $^{222}_{86}\text{Rn}$ ground level by emitting a 0.186-MeV photon ($\gamma$).
Consider the following two radioactive decays

I = $^{214}_{83}\text{Bi} \rightarrow ^{214}_{84}\text{Po}$

II = $^{214}_{83}\text{Bi} \rightarrow ^{210}_{81}\text{Tl}$

Which of the following is true?

A. I is alpha decay and II is beta decay

B. I is beta decay and II is alpha decay

C. Both are beta decays

D. Both are alpha decays

E. Both are gamma decays
For a nucleus with probability of decay = $1/6$ per minute, which of the following statements is true?

A. The nucleus will certainly not have decayed after 1 min.
B. The nucleus will certainly have decayed after 6 min.
C. The nucleus might still not have decayed after 10 min.
D. None of the above is true.