

- 8 Fig. 8.1 shows the position of Neptunium-231 ($^{231}_{93}\text{Np}$) on a diagram in which nucleon number (mass number) A is plotted against proton number (atomic number) Z .

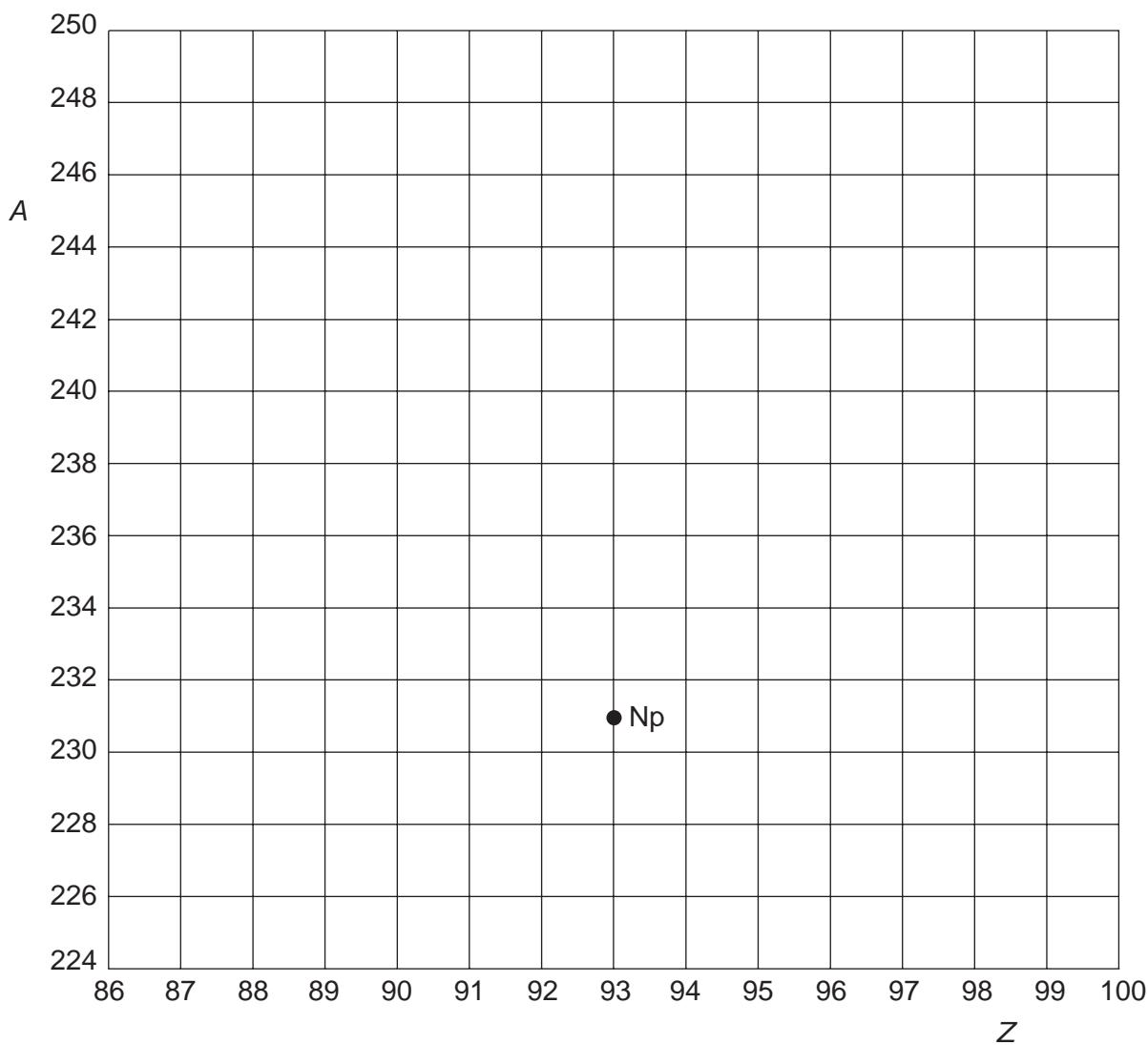


Fig. 8.1

- (a) Neptunium-231 decays by the emission of an α -particle to form protactinium.
On Fig. 8.1, mark with the symbol Pa the position of the isotope of protactinium produced in this decay. [1]
- (b) Plutonium-243 ($^{243}_{94}\text{Pu}$) decays by the emission of a β -particle (an electron).
On Fig. 8.1, show this decay by labelling the position of Plutonium-243 as Pu and the position of the daughter product as D. [2]