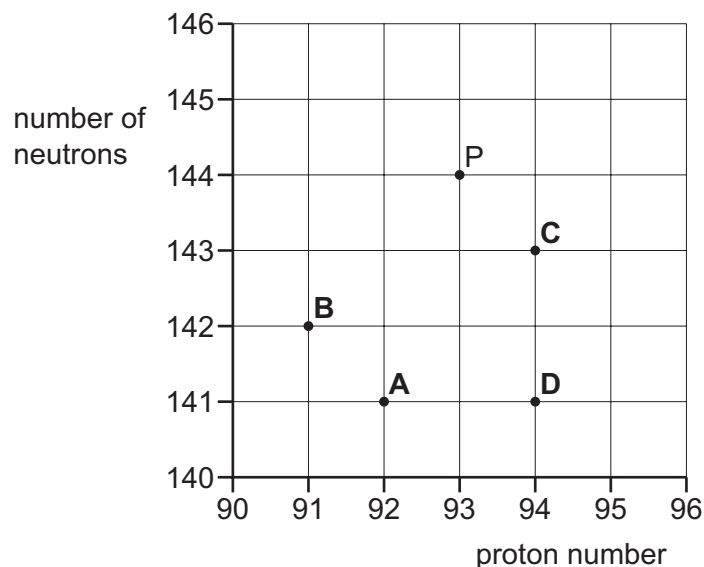


- 38** Nucleus P has 144 neutrons and 93 protons. Nucleus P is unstable and undergoes α -decay to form nucleus Q. Nucleus Q then undergoes β^- decay to form nucleus R.

Nucleus P is represented by point P on the graph.

Which point on the graph represents nucleus R?



- 39** The diagrams show the quark composition of four different hadrons. One of the hadrons is a Σ^+ particle. It has a charge of $+e$, where e is the elementary charge.

Which hadron could be the Σ^+ particle?

A

B

C

D

key

u = up quark

d = down quark

s = strange quark

- 40** Which type of particle is comprised of the most quarks?

- A** antiquark
- B** baryon
- C** lepton
- D** meson