

38 Which fundamental particles form a hadron?

- A** leptons
- B** nucleons
- C** photons
- D** quarks

39 The unstable nuclide ${}^{218}_{84}\text{X}$ decays through a sequence of emissions of α and β^{-} particles to form the stable nuclide ${}^{210}_{83}\text{Y}$.

How many α and β^{-} particles are emitted during this decay process?

	α -particles	β^{-} particles
A	1	1
B	2	1
C	2	3
D	3	2

40 Which statement about radioactive decay is correct?

- A** Neutrinos are always emitted during α -decay.
- B** The α -particles emitted from a radioactive sample have a continuous range of kinetic energies.
- C** The β^{-} particles emitted from a radioactive sample have a continuous range of kinetic energies.
- D** The proton number of a nucleus decreases by four when it undergoes α -decay.