

- 40** The nucleus of a radioactive isotope of an element emits an  $\alpha$ -particle. The daughter nucleus then emits a  $\beta^-$  particle and then the daughter nucleus of that reaction emits another  $\beta^-$  particle.

Which statement describes the final nuclide that is formed?

- A** It is a different isotope of the original element.
- B** It is a nuclide of a different element of higher proton number.
- C** It is a nuclide of the same element but with different proton number.
- D** It is identical to the original nuclide.