

- 30** Nuclide X decays to stable nuclide Y with a half-life of T years.

Geologists discovered that nuclide Y found in a particular rock sample all came from nuclide X which was present when the rock was formed.

The rock is thought to be $3T$ years old.

What is the expected ratio $\frac{\text{number of atoms of X}}{\text{number of atoms of Y}}$ for this rock?

A $\frac{1}{2}$

B $\frac{1}{3}$

C $\frac{1}{6}$

D $\frac{1}{7}$