

- 30** Two samples of radioactive nuclides X and Y are prepared. Y has twice the initial activity and twice the half-life of X.

What is the ratio of the activity of X to Y after 6 half-lives of X?

**A**  $\frac{1}{2}$

**B**  $\frac{1}{4}$

**C**  $\frac{1}{8}$

**D**  $\frac{1}{16}$