

- 30** Samples of two radioactive nuclides, X and Y, each have equal activity  $A_0$  at time  $t = 0$ . X has a half-life of 24 years and Y a half-life of 16 years.

The samples are mixed together.

What will be the total activity of the mixture at  $t = 48$  years?

**A**  $\frac{1}{12}A_0$

**B**  $\frac{3}{16}A_0$

**C**  $\frac{1}{4}A_0$

**D**  $\frac{3}{8}A_0$

**END OF PAPER**