

30 Thorium-228 has a decay constant of $1.15 \times 10^{-8} \text{ s}^{-1}$.

A small sample of thorium-228 is prepared, containing 5.00×10^{12} nuclei.

How long does it take for 3.00×10^{12} of these nuclei to decay?

- A** $3.62 \times 10^7 \text{ s}$ **B** $4.44 \times 10^7 \text{ s}$ **C** $7.23 \times 10^7 \text{ s}$ **D** $7.97 \times 10^7 \text{ s}$

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.

