

- 30** A radioactive source contains two species. One has a half-life of 4 days and decays by the emission of alpha particles while the other has a half-life of 3 days and emits beta particles. The initial count-rate is 352 min^{-1} , but when a sheet of paper is placed between the source and the detector this becomes 256 min^{-1} . The background count-rate is 16 min^{-1} .

What would be the count-rate without the paper present after 12 days?

A 27 min^{-1}

B 28 min^{-1}

C 43 min^{-1}

D 44 min^{-1}

End of Paper