Answer on question #59097, Physics / Atomic and Nuclear Physics

Question The half-life of a certain radioactive isotope is 32 hours. What fraction of the sample would remain after 16 huors?

 $0.50 \\ 0.25 \\ 0.62$

0.71

Solution This fraction is

$$e^{-\frac{t}{\tau}} = e^{\frac{16}{32}} = \frac{1}{\sqrt{e}} \approx 0.61$$

The answer is 0.62.