The equation for radioactive decay is: N(t) = Noe-kt, where No is the initial number of radioactive atoms, N(t) is the number of radioactive atoms left after a time t, and k is the decay constant. The half-life of carbon 14 is about 5730 years.

Radioactive carbon dating makes the assumption that living things absorb carbon 14 from the atmosphere and that the amount of carbon 14 in the atmosphere has been essentially constant in the past. After the living thing dies, it no longer absorbs carbon 14 but loses it only through the process of radioactive deca

1. What is k for carbon 14?
2. Suppose N(t) = 0.3No. How long ago did the living thing die?
3. It is difficult to measure any residual radioactivity if N(t) drops below No/1000. But if this is the case, we can at least say that the living thing must have died at t years ago or more. Solve for t in the inequality: N(t) > No/1000.
4. How many half-lives of carbon 14 is this equivalent to?