College Prep Chemistry of the Earth System

Assignment 3P 20 Points

Nuclear Decay Rate

Answer the following questions

1. Explain the basic process of nuclear decay as the isotope decays over time. Does the rate stay constant or does it change over time?
2. What is the shape and general math function used to show the decay process of nuclear isotopes?
3. What determines the half-life of an isotope, i.e. the decay rate?

For the following decay systems solve for the number particles left after the given number half-lives have passed.

4. N_o = 500particles, Half Lives = 2 and 6
5. N_o = 1300particles, Half Lives = 1 and 8
6. N_o = 350particles, Half Lives = 3 and 4
7. N_o = 840particles, Half Lives = 1 and 5