CLASS COPY! DO NOT TAKE!

Half Life Practice Problems

Name: _____ Date: _____ Period: _____

1. What percentage of a radioactive element will be left after:

   a. 1 half-life _____ b. 2 half-lives _____ c. 3 half-lives _____

2. How many half-lives have passed for each of the following samples:
   a. 50% of the original radioactive material remains _____
   b. 25% of the original radioactive sample remains _____
   c. 12.5% of the original radioactive sample remains _____

3. If a rock sample originally contained 12 g of Uranium-235, how much will be left after:

   a. 1 half-life _____ b. 2 half-lives _____ c. 3 half-lives _____

4. Uranium-235 has a half-life of 700 million years. How much of the 12 g sample of Uranium-235 will be left after :

   a. 700 million years _____ b. 1400 million years _____

5. Carbon-14 is a radioactive element that decays into Notrogen-14. The half-life of Carbon-14 is 5730 years. What percentage of Carbon-14 and Nitrogen-14 will be left in a dinosaur bone after:

5730 years:	% of Carbon-14 _____	% of Nitrogen-14 _____
11,580 years:	% of Carbon-14 _____	% of Nitrogen-14 _____
17,310 years:	% of Carbon-14 _____	% of Nitrogen-14 _____

6. If the dinosaur bone in question 5 originally had 16 grams of Carbon-14 in it how much of each type of element should be left after:

5730 years:	Grams of Carbon-14 _____	Grams of Nitrogen-14 _____
11,580 years:	Grams of Carbon-14 _____	Grams of Nitrogen-14 _____
17,310 years:	Grams of Carbon-14 _____	Grams of Nitrogen-14 _____

7. More dinosaur bones are found and examined. If they contain the following percentages of Carbon-14 and Nitrogen-14 how old are each of the bones?

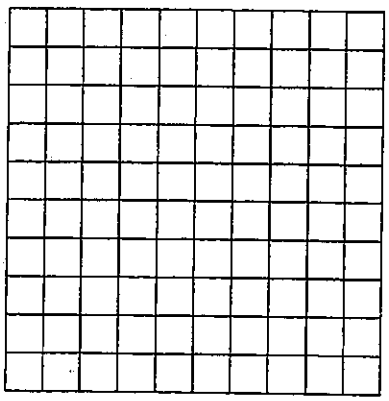
Bone #1: 50% Carbon-14 and 50% Nitrogen-14 _____ years old

Bone #2: 25% Carbon-14 and 75% Nitrogen-14 _____ years old

Bone #3: 12.5 % Carbon-14 and 87.5% Nitrogen-14 _____ years old

8. Scientists have recently discovered a new type of radioactive element. They have measured its half-life and know it takes 10,000 years to decay. Use their data in the table below to plot a line on the graph below.

Number of Half Lives	% of Unstable Atom Remaining
0	100
1	50
2	25
3	12.5
4	6.25
5	3.125



9. A fossil bone has 25% of this new radioactive element remaining. How many half-lives have passed?

10. If the half-life of this new element is 10,000 years, how old is the fossil bone in question 9?