Name: _____

Pd. ____

Absolute Dating Practice

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 Carbon-12. The half-life of Carbon-14 is 5700 years. What percentage of Carbon-14 and Carbon-12 will be left in a dinosaur bone after:

   5700 years: % of Carbon-14 _____ % of Carbon-12 _____

   11,400 years: % of Carbon-14 _____ % of Carbon-12 _____

   17,100 years: % of Carbon-14 _____ % of Carbon-12 _____

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

5700 years: Grams of Carbon-14 _____ Grams of Carbon-12 _____

11,400 years: Grams of Carbon-14 _____ Grams of Carbon-12 _____

17,100 years: Grams of Carbon-14 _____ Grams of Carbon-12 _____

7. More dinosaur bones are found and examined. If they contain the following percentages of Carbon-14 and Carbon-12 how old are each of the bones?

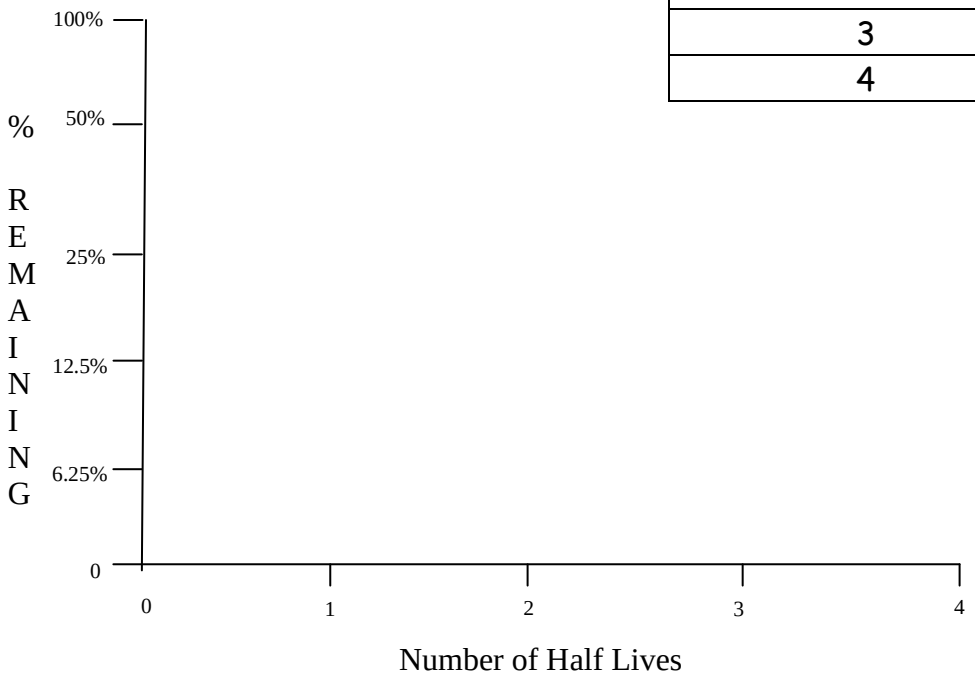
Bone #1: 50% Carbon-14 and 50% Carbon-12 _____ years old

Bone #2: 25% Carbon-14 and 75% Carbon-12 _____ years old

Bone #3: 12.5 % Carbon-14 and 87.5% Carbon-12 _____ 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

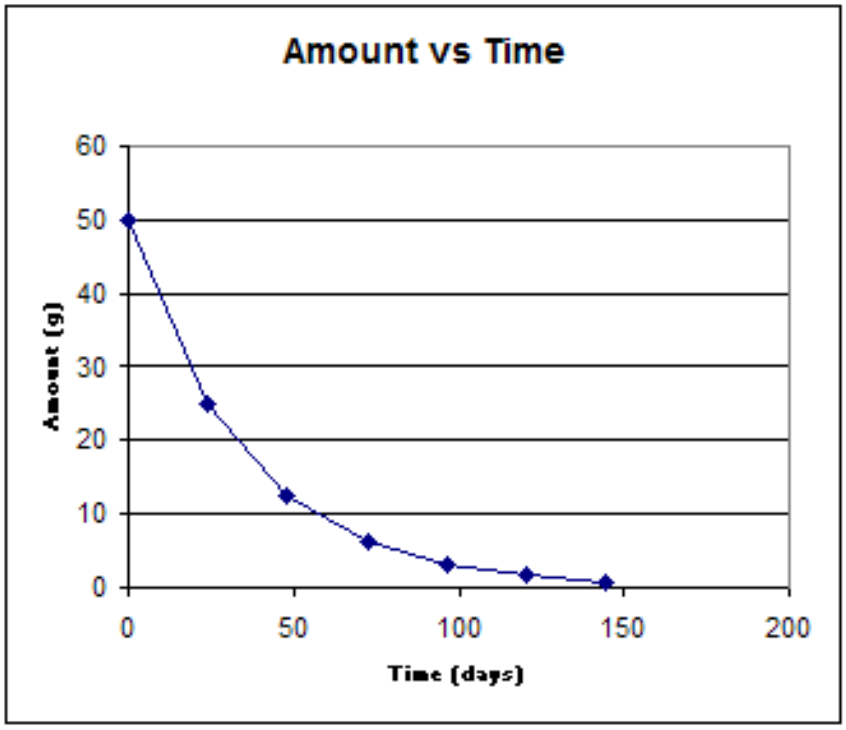


9. A fossil bone has 25% of this new radioactive element remaining. How many half-lives have passed?

_____

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

_____



11. Label the graph above to indicate where each half-life occurs.

12. How much of the sample is remaining after the third half-life?

13. What percentage of sample is remaining after the first half life?

14. What percentage of sample is remaining after the second half life?