

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?

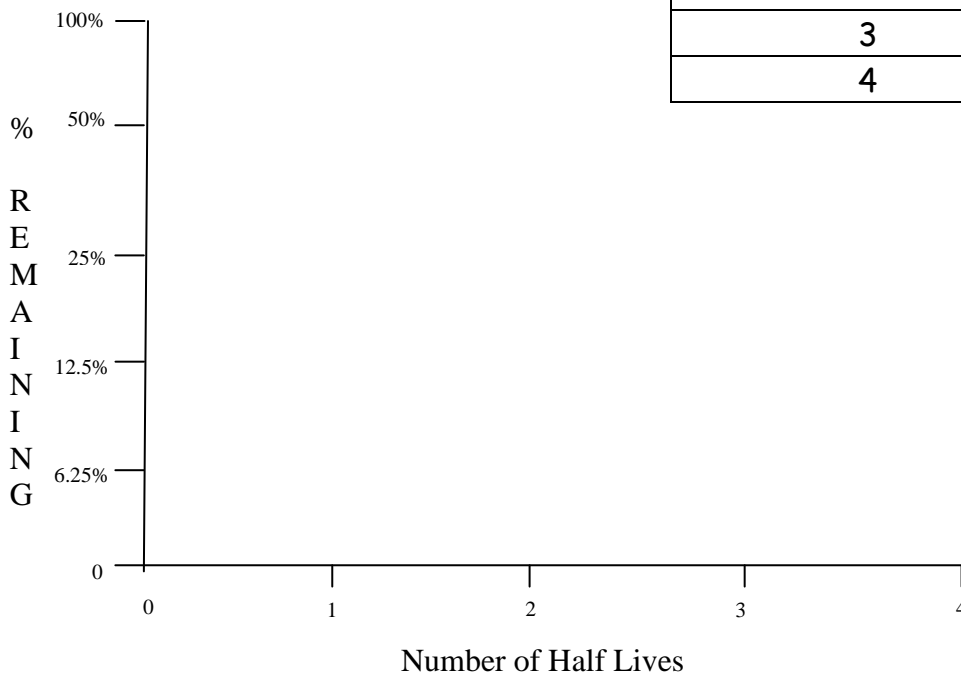
**Bone #1:** 50% Carbon-14 and 50% Carbon-12 \_\_\_\_\_ years old

**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

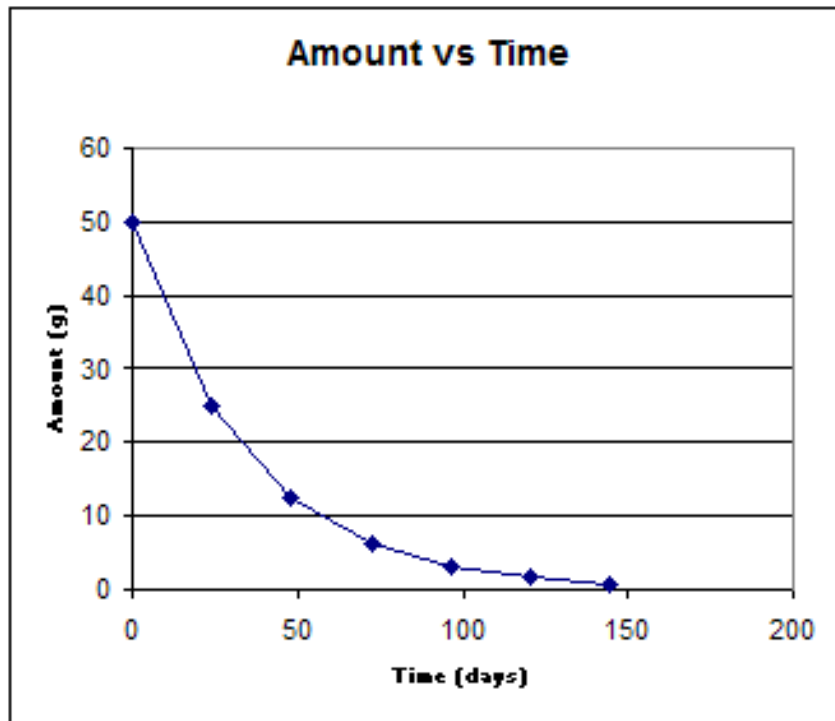


9. A fossil bone has 25% of this new radioactive element remaining. How many half-lives have passed?

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

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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?