

Chapter 12

Use with Section 3

ENRICHMENT**• Absolute Ages of Rocks****Calculating Half-Lives**

You learned in the chapter about the half-lives of carbon-14 and radium. Here is a table of some other isotopes and their half-lives. Use the table to answer the questions that follow.

Isotope	Half-life
Plutonium-238	86 years
Americium-241	433 years
Curium-242	163 days
Berkelium-249	314 days
Californium-249	360 days
Einsteinium-253	20 days
Nobelium-259	1 1/2 hours
Lawrencium-260	180 seconds
Element 103-262	40 seconds

1. If you had a 100-gram sample of plutonium, how much would still remain in 43 years?

2. What happened to the part of the plutonium that is no longer there? _____

3. If you had a 5-gram sample of Lawrencium, how much would still remain in 30 minutes?

4. If you had a 100-gram sample of Einsteinium, how much would you have left after 40 days?

5. A rock sample contains 7.5 grams of Californium-249 and 52.5 grams of the product into which the Californium has changed. How old is the rock? _____