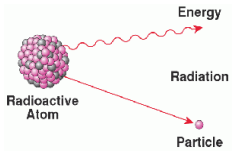


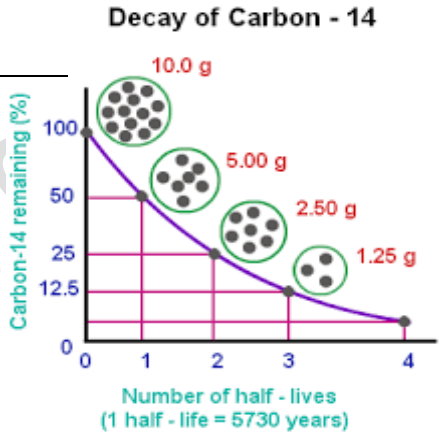
Half-Life 101 Video Review

1. What is Radioactive decay and why does it occur? _____

   _____
2. What is Half life decay? _____
3. Why is half life different for radioactive elements? _____

   _____

4. Answer the following questions by referencing the chart to the right.
   - How many protons & neutrons does C-14 have? _____
   - What is Carbon-14 mass number? _____
   - What is Carbon-14 half life? _____
   - What is the total sample amount? _____
   - How much is left after 1 HL? _____ 3 HL? _____ 4 HL? _____
   - How many years have passed after 1 HL? _____ 4 HL? _____
   - What percent remains after 3 half lives? _____



5. Steps for solving Half-life problems
   a. Write _____ beside each half-life problem
   b. Read and _____ you need to solve the problem.
   c. Put a _____ by what you are _____ for.
   d. Make a _____ for your half-life _____ and half-life _____.
   e. Put the _____ that you are given in the _____ and solve for __ _____

Practice Problem 1

Magnesium-25 has a half-life of 15 hours. How much Magnesium-25 will remain in a 20.0 g sample after 60 hours?

Practice Problem 2

An 80g sample of a radioactive isotope decays to 5g in 32 days. What is the half-life of this element?

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Practice Problem 3

Xenon-135 has a half-life of 12 days. How many grams of Xe-135 in a 6.0 g sample remains after 24 days?

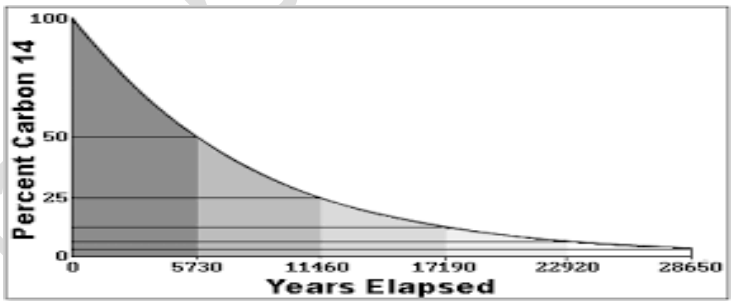
Practice Problem 4

Phosphorus-32 has a half-life of 14 days. How long will it take for the P-32 sample to decay to one-fourth of its original mass?

Practice Problem 5

In 5.49 seconds, 1.20g of argon-35 decays to leave only 0.15g. What is the half-life of argon-15?

Analyze the half-life diagram below and answer the following questions



1. What is the half-life of Carbon-14? _____
2. If only 25% of Carbon-14 remains in this sample, how many years have passed? _____
3. If 400g of Carbon-14 were in an organism when it originally died, how much Carbon-14 was left after three half-lives? _____