

Name: _____

Block: _____

Half-Life

For this worksheet, you will need to use half-life information from the “Selected Radioisotopes” table in your chemistry reference packets.

1. If a lab had 128 g of ^3H waste 49 years ago, how much of it would be left today?
2. Suppose one of Mr. Bigler’s students stole a 20. g sample of ^{42}K at 8:30am on Friday. When the student was called in to the house office on Monday at the convenient time of 10:54am, how much of the ^{42}K was left?
3. If a school wants to dispose of small amounts of radioactive waste, they can store the materials for ten half-lives, and then dispose of the materials as regular trash.
 - (a) If we had a sample of ^{32}P , how long would we need to store it before disposing of it?
 - (b) If we had started with 64 g of ^{32}P , how much ^{32}P would be left after ten half-lives? Approximately what fraction of the original amount would be left?
4. If the carbon in a sample of human bone contained only one-fourth of the expected amount of ^{14}C , how old is the sample? (*Hint: pretend you started with 1 g of ^{14}C and you have 0.25 g remaining.*)