

NAME:

HONORS CHEMISTRY

SECTION:

Radioactive Dating Problems

Level 1

1. Gold-198 has a half-life of 2.70 days. If a 225 gram sample of gold-198 disintegrates over the course of 10.8 days, what mass of gold-198 remains?

2. What is the half-life of a radioactive isotope if a 325 g sample decays to 10.2 g in 26.3 years?

3. The half-life of potassium-42 is 12.4 hours. What mass of a 850. gram sample remains after 62.0 hours?

4. What is the half-life of neon-19, if a 500. milligram sample decays to 62.5 milligrams in 51.6 seconds?

5. The half-life of thorium-232 is 1.4×10^{10} years. If there are 15.0 grams of thorium-232 left after 2.8×10^{10} years, how many grams of radioactive nuclide were in the original sample?

6. There are 7.0 g of iron-53 left after 135 days. How many grams were in the original sample if iron-59 has a half life of 45.1 days? Iron-59 is used as a radiotracer to study red blood cells.

