Name _____

Chapter 10 Half-life

You may use your periodic table, p. 261.
An answer without units will be counted wrong!

The half-life is the time it takes for half of the original sample of a radioactive isotope to decay.

1. The half-life of Zn-71 is 2.4 minutes. If a scientist had 100.0g at the beginning, how many grams would be left after 7.2 minutes has elapsed?

2. Pd-100 has a half-life of 3.6 days. If a scientist begins with 500.0 g, how many grams would be left after 21.6 days?

3. 200.0 grams of an isotope with a half-life of 36.0 hours is present at time zero. How many days will it take to decay to 12.5 grams?

4. Fermium-253 has a half-life of 5.5 minutes. A radioactive sample is considered to be completely decayed after 10 half-lives. How much decayed Fermium-253 will be left if a scientist begins with 1,000 g Fermium-253? How many minutes will it take to completely decay?

5. The half-life of iodine-131 is 8.04 days. How much time will it take to decay a 50.0 g sample to 1.56 g?