

Name: _____

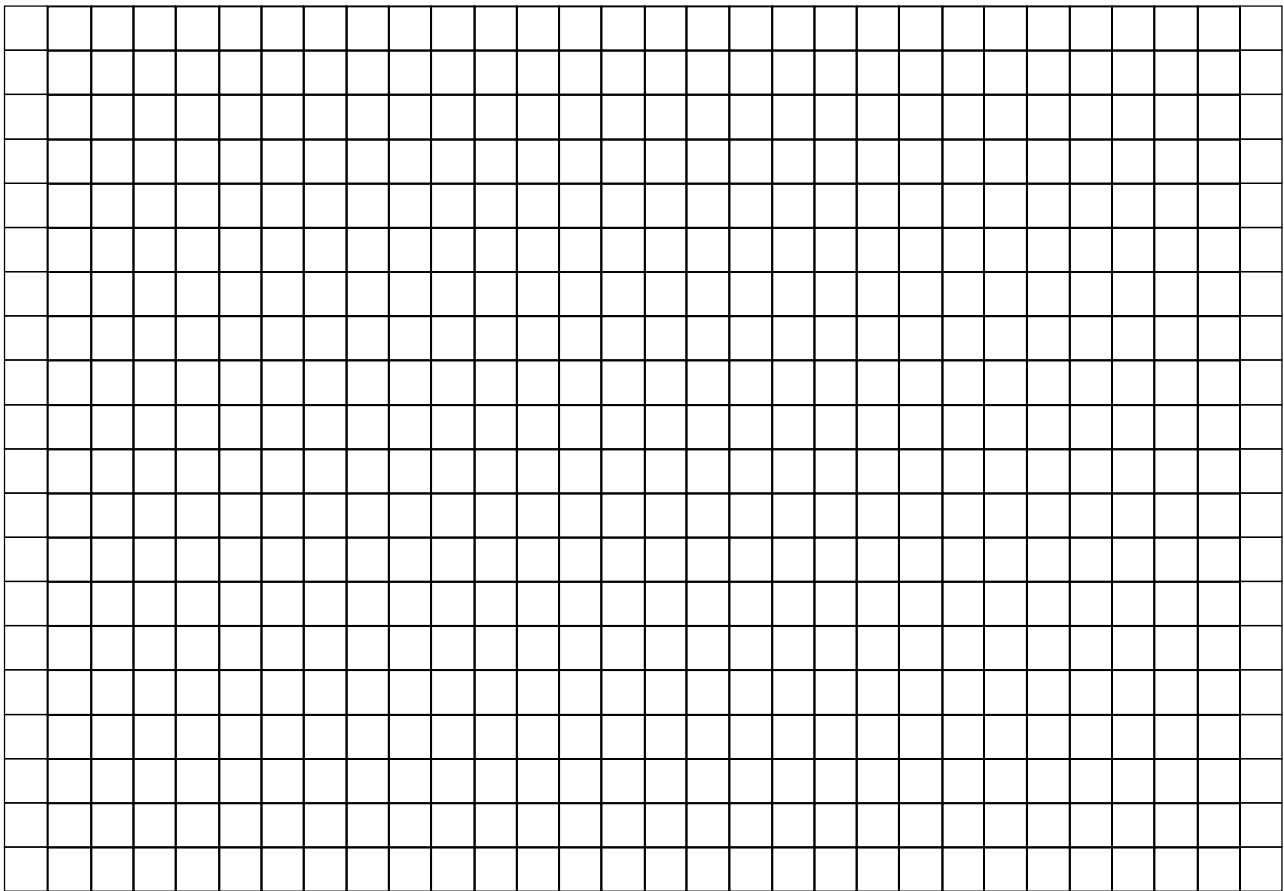
Date: _____

Half - Life Practice

1. What is meant by half-life?
2. If you have 100 grams of a radioactive isotope with a half-life of 10 years:
 - a. How much of the isotope will you have left after 10 years?
 - b. How much of the isotope will you have left after 20 years?
 - c. How many half-lives will occur in 40 years?
3. The half-life of plutonium-239 is 24,300 years. If a nuclear bomb released 8 kg of this isotope, how many years would pass before the amount is reduced to 1 kg?
4. The half-life of radon-222 is 3.8 days. How much of a 100 gram sample is left after 15.2 days?
5. Carbon-14 has a half-life of 5,730 years. If a sample contained 70 mg originally, how much is left after 17,190 years?
6. The half-life of cobalt-60 is 5.26 years. If 50 grams are left after 15.78 years, how many grams were in the original sample?
7. The half-life of I-137 is 8.07 days. If 25 grams are left after 40.35 days, how many grams were in the original sample?
8. If 100 grams of Au-198 decays to 6.25 grams in 10.8 days, what is the half-life of Au-198?

9. Graph the following data on the graph, then use the graph to determine the half-life of this isotope.

Time (years)	0	1	2	3	4	5	6	7	8	9	10
Mass Remaining (grams)	100	75	56	42	32	24	18	13	10	8	6



half-life =