

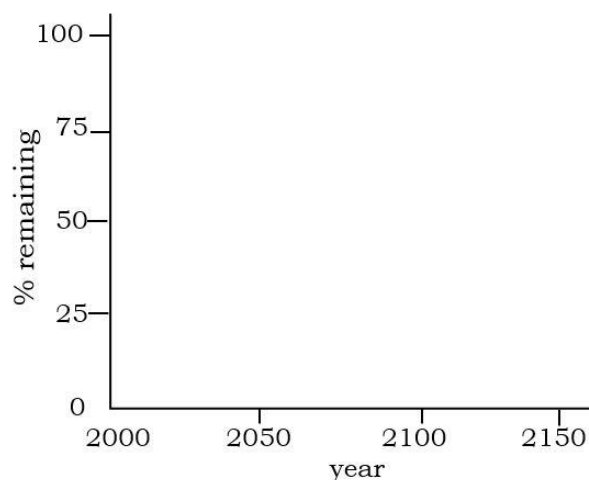
Half-Life

Name: _____

1) Strontium 90 has a half-life of 28 years.

a) Fill in the rest of this table:

	year	% remaining
Start	2000	100
1 half life		
2 half lives		
3 half lives		
4 half lives		
5 half lives		



b) Plot the data on the graph. Draw a best-fit curve.

c) In approximately what year will 66% of the sample remain?

Use the data table on the Preliminary worksheet to answer the following questions:

2) Write the nuclear decay reaction of cesium-137 atom.

3) Suppose you started with 4 grams of iodine-131. How long would it take to have only 0.000061 g of iodine-131 left?

4) How old is a fossil that, when alive, would have contained 12 g carbon-14 and now only has 1.5 g?

5) A radioactive sample with 50 g of plutonium-239 needs to be buried until safe. The plutonium can be removed when the sample contains less than 0.5 g of plutonium-239. How many years will the plutonium need to be buried?

6) A sample of iodine-126 with an original mass of 15 mg loses 13.125 mg of the original mass of the isotope in 48 days. What is the half-life of iodine-126?

Half-Life

Name: _____

1) How many half-lives does it take to have
a) 25% remaining?

c) 6.25% remaining?

b) 10% remaining?

d) 1% remaining?

Use the data table on the Preliminary worksheet to answer the following questions:

4) Write the nuclear decay reaction of uranium-235.

5) Suppose you started with 16 grams of cesium-137. How long would it take to have only 0.000061 g of cesium 137 left?

6) How old is a fossil that, when alive, would have contained 18 g carbon-14 and now only has 1.12 g?

7) A radioactive sample with 25 g of plutonium-239 needs to be buried until safe. The plutonium can be removed when the sample contains less than 0.5 g of plutonium-239. How many years will the plutonium need to be buried?

8) A 12 g sample of cobalt-60 is buried within a time capsule in 1963. The time capsule was opened in 2005, and the sample of cobalt-60 now weighs 0.047 grams. What is the half-life of cobalt-60?