

SW Science 10 Unit 5 Radioactive Decay Worksheet

Name: _____

Student #: _____

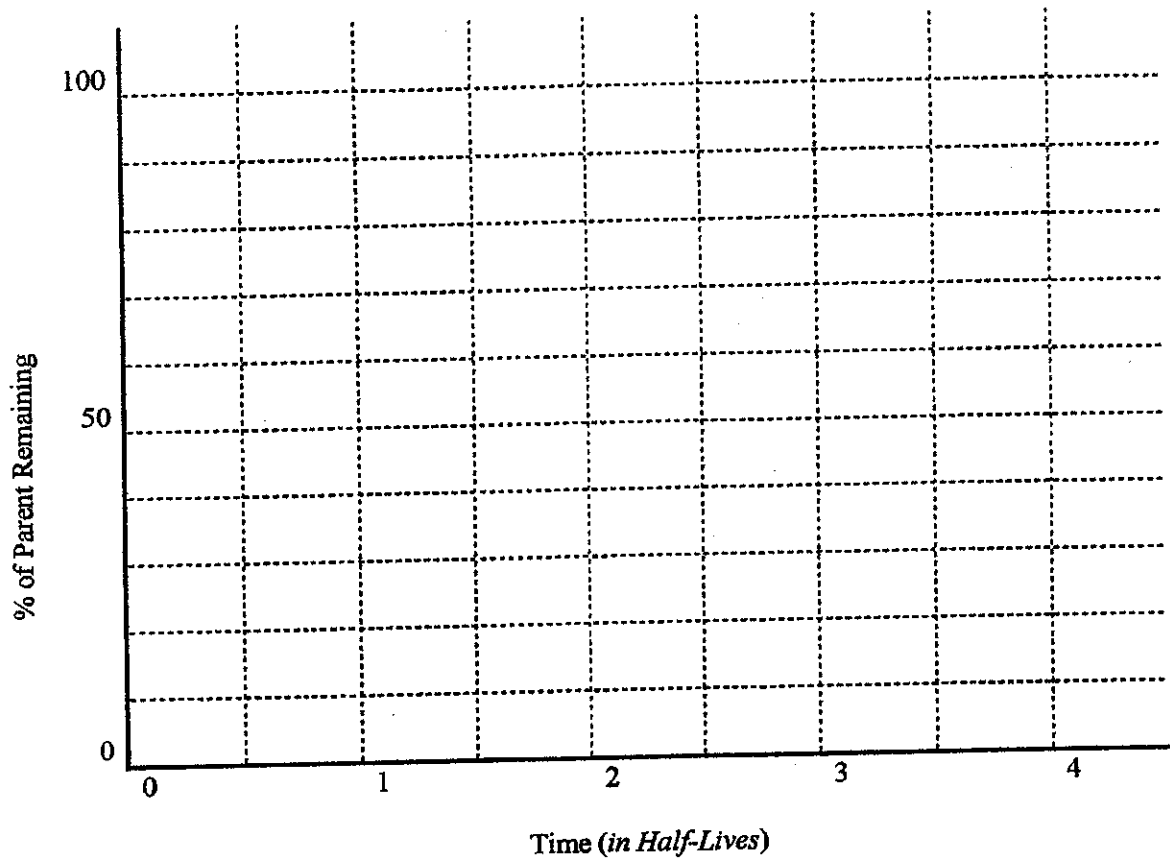
5.2.1 Radioactive Decay – Half-Life

1. Complete the following table by shading in the appropriate number of squares or calculating the amount of parent material left or decay product formed.

Amount Radioactive Material	Mass (g)	Fraction of Parent Material Left	% Parent Material LEFT	% Decay Product FORMED																
original sample	100g	<table border="1" style="width: 100%; height: 40px;"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																	100%	0%
after 1 half-life	50g	<table border="1" style="width: 100%; height: 40px;"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																		50%
after 2 half-lives	25g	<table border="1" style="width: 100%; height: 40px;"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																		
after 3 half-lives		<table border="1" style="width: 100%; height: 40px;"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																	12.5%	
after 4 half-lives		<table border="1" style="width: 100%; height: 40px;"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																		93.75%

2. Use the graph on the following page to plot the results of the table in question #1.
NOTE: All Radioactive Decay graphs will have a similar shape.

Graphing a Decay Curve



If one half life is 1500 years then:

- Two half-lives = _____ years
- Three half-lives = _____ years
- Four half-lives = _____ years