**Absolute Dating Notes:**

Absolute Age: the numeric age of an object or event, often stated in years before

 the present as determined by an absolute dating process

Radiometric Dating: A method of determine the absolute age of an object by comparing the relative percentages of a radioactive (parent) isotope and a stable (daughter) isotope

Half-Life: The time required for half of a sample of a radioactive isotope to break down by radioactive decay to form a daughter isotope

In the diagram below, the gray boxes represent atoms of carbon 14 and white boxes represent its daughter isotope, nitrogen 14. Carbon 14 has a half life of 5,730 years, which means during that time period one can expect one half of the Carbon 14 present to decay into Nitrogen 14. Using this information and the diagram below, fill in the chart and graph it below.



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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ½ Life | 0 |  |  |  |  |  |  |  |  |
| Carbon 14 | 16 |  |  |  |  |  |  |  |  |
| Nitrogen 14 | 0 |  |  |  |  |  |  |  |  |
| Years Passed | 0 |  |  |  |  |  |  |  |  |

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Practice 1:

 A sample contains 1,000 grams of an isotope that has a half-life of 500 years. How many half-lives will have to pass before the sample contains less than 10g of the parent isotope? Show work and graph below:



Practice 2:

 The half-life of 238U is 4.5 billion years. How many years would 16g of it take to decay into 0.5 grams of 238U and 15.5 grams of its daughter isotopes? Show work and graph below:

