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**Half-Life  $\lambda$**

The time it takes for one-half of a substance to undergo radioactive decay. Length =  $\lambda$

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**Graph**

**N-16**

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## Graphing N-16

Time	Counts
0 m	3490
2 m	2440
4 m	1760
6 m	1230
8 m	870
12 m	350
15 m	180

Create a graph of the data.

Determine the half-life of the isotope. Write an explanation of the process you used to arrive at your answer.

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Why might radioisotopes of C, N, and O be especially harmful to living creatures?

Radioactive isotopes of these elements can be incorporated into the tissues of living organisms. When they decay they can easily damage those tissues.

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Name several ways to detect radiation.

Geiger Counters	Beta
Scintillation counters	All
Film badges	All

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Name an advantage of a Scintillation Counter over a Geiger Counter.

Scintillation Counters detect all radiation, whereas, Geiger Counters only detect Beta radiation.

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What is the advantage of using a radioactive seed to treat a cancerous tumor?

The seed can be placed at the location of the tumor which minimizes the effect on normal cells. No Radioactive wastes too!

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Why is it important for medical isotopes to have relatively short half-lives?

Short half-lives means relatively short exposures to the radiation being used.

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Let's see how it works


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