

23. The half-life of a radioactive substance measures the time it takes for a sample of the substance to radioactively decay until only half of its initial mass remains. The mass of the sample of radioactive substance will continue to decrease by half during each subsequent half-life. A sample of a radioactive substance may decay for infinitely many years; therefore, the sample may radioactively decay for infinitely many half-lives.

Suppose the initial mass of a sample of some radioactive element is 80 grams.

- A. If t represents the number of half-lives that have passed, write the equation that can be used to determine the mass of the sample of radioactive material, R , remaining after t half-lives.

- B. Graph the equation that you wrote in part A.

