**Half-Life Equations**

1. An isotope of cesium (cesium-137) has a half-life of 30 years. If 1.0 g of cesium- 137 disintegrates over a period of 90 years, how many g of cesium-137 would remain?
2. Actinium-226 has a half-life of 29 hours. If 100 mg of actinium-226 disintegrates over a period of 58 hours, how many mg of actinium-226 will remain?
3. The half-life of isotope X is 2.0 years. How many years would it take for a 4.0 mg sample of X to decay and have only 0.50 mg of it remain?
4. Selenium-83 has a half-life of 25.0 minutes. How many minutes would it take for a 10.0 mg sample to decay and have only 0.31 mg of it remain?
5. A 2.0g sample of Po-218 decays to 0.125g in 12 minutes. What is its half-life?
6. 100kg Uranium-226 decays to 25g 7.2 x 104 years. What is its half-life? Write in scientific notation!

Answers:

1. 0.13g
2. 25mg
3. 6 yrs
4. 125 min
5. 3 min
6. 3.6 x 104 years