Half Life

Half Life

Half Life & Radioactive Decay

- Half Life
  - A measure of radioactivity
    - Atoms in radioactive materials spontaneously just break apart (decay)
    - We can't tell when an individual atom will decay
    - We can tell when a fraction of them will decay
  - The amount of time it takes for **half** the atoms in a piece of radioactive material to break apart
- Where do the radioactive atoms go after they decay?.....
  - After each half life, one half of the original sample remains
  - The atoms that decayed become atoms of another element

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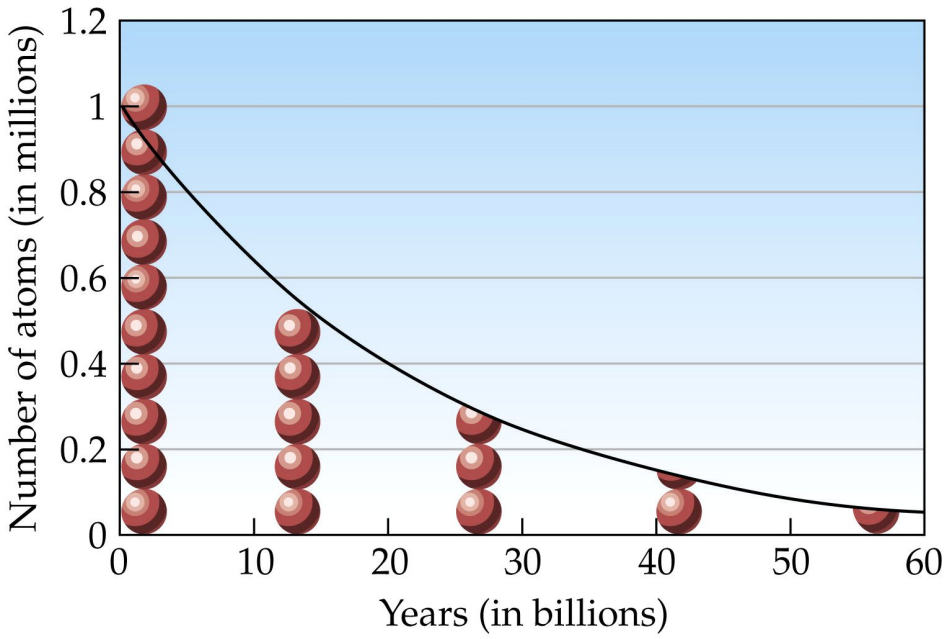

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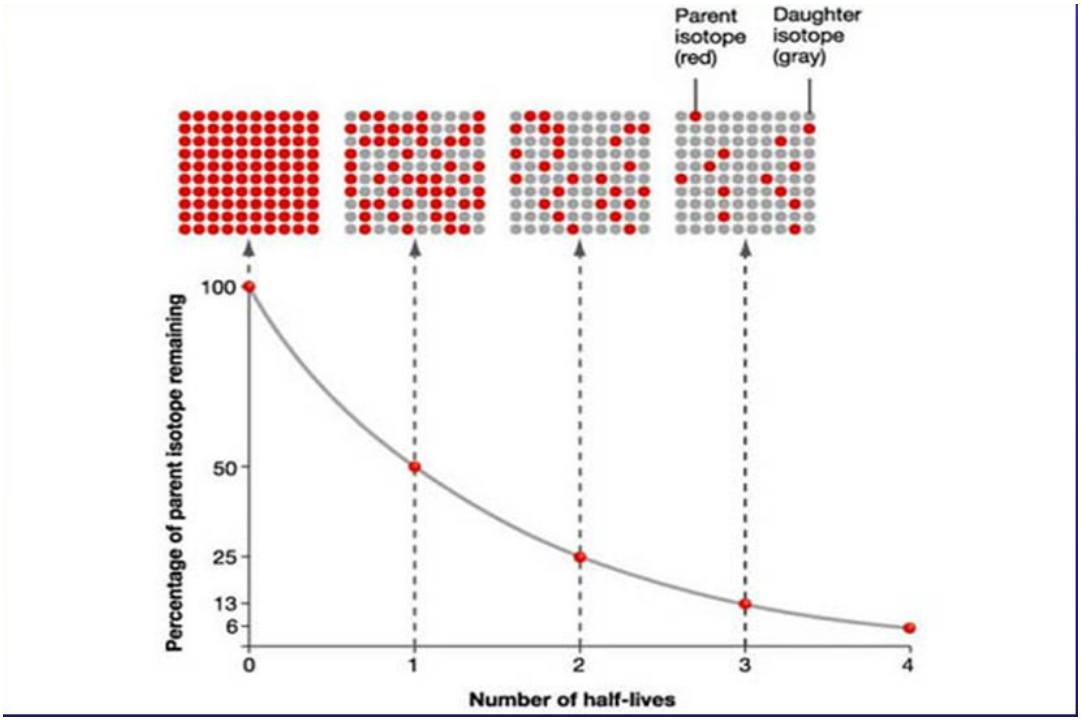

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- 50.0 g of Plutonium decays for 72,000 years. What mass of Plutonium remains at the end of this time, remembering the half of Pu is 24,000 years?

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- 100.0 grams of molybdenum-91 decays for 60 minutes. At the end of this time period, 6.25 grams of the ^{91}Mo remains. What is the half life of this isotope?

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