

Name:

Unit 4HC Hd 8

Half Life Practice (Honors)

- 1) Fluorine-21 has a half life of approximately 5 seconds. What **fraction** of the original nuclei would remain after 25 seconds?

- 2) Iodine-131 has a half life of 8 days. What **percentage** of the original sample would remain at the end of 32 days?

- 3) The half-life of chromium-51 is 28 days. If the sample contained 510 grams, how much chromium would remain after 56 days? How much would remain after 112 days? **(2 Problems)**

- 4) If 20.0 g of a radioactive isotope are present at 1:00 PM and 2.50 g remain at 2:00 PM, what is the **half life** of the isotope?

- 5) The half life of Uranium-238 is 4.5×10^9 years and the age of universe is 13.75 billion years old. Approximately what fraction of Uranium-238 that was present when the universe formed still remains?

- 6) Chromium-48 decays. After 6 half-lives, what **percentage** of the original nuclei would remain?

- 7) The half life of iodine-125 is 60 days. What **fraction** of iodine-125 nuclides would be left after 240 days?

- 8) Titanium-51 decays with a half life of 6 minutes. What **percent** of titanium would remain after 30 minutes?

9) A medical institution requests .160 g of bismuth-214, which has a half life of 20 min. How many grams of bismuth-214 must be prepared if the shipping time is 2 h?

10) The half life of radium 226 is 1602 years. If the sample is originally 204g what amount would remain after 4806 years?