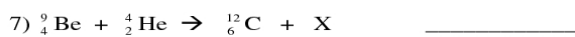Name_____
Radioactivity Worksheet

1) When a radioactive element forms a chemical bond with another element its half-life
   a. Increases
   b. Decreases
   c. Remains the same
2) A radioactive element has a half-life of 4 hours. How much of the original radioactive sample will remain at the end of 12 hours?
   a. 1/8
   b. 1/4
   c. 1/3
   d. 1/2
3) A sample contains 100 milligrams of iodine 131. At the end of 32 days the number of milligrams of iodine-131 that will remain will be
   a. 25.00
   b. 12.50
   c. 6.250
   d. 3.125

Fill in the missing particles (X).

4) $^{238}_{92}U \rightarrow {}^{234}_{90}Th + X$ _____

5) $^{234}_{90}Th \rightarrow {}^{234}_{91}Pa + X$ _____

6) $^{234}_{91}Pa \rightarrow {}^{0}_{-1}e + X$ _____

7) $^{9}_{4}Be + {}^{4}_{2}He \rightarrow {}^{12}_{6}C + X$ _____

8) $^{238}_{92}U + {}^{1}_{0}n \rightarrow X$ _____

9) $^{6}_{3}Li + {}^{2}_{1}H \rightarrow 2X$ _____

10) $^{59}_{27}Co + {}^{4}_{2}He \rightarrow X$ _____

11) ^{198}Au has a half life of 2.7 days. A 1-gram sample of gold will have decreased to 1/8 gram in _____ days.

12) What is a beta particle?_____

13) What is an alpha particle?_____

14) $^{235}_{92}U$ contains _____ neutrons.

15) $^{12}_{6}C$ contains _____ protons.