**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Nuclear Chemistry Test Review**

**Part II**

1) Write the isotope symbols for each of the following elements.

a. Xenon-129

b. Gold-197

2) Write the isotope names for each of the following elements.

b. 23492U

d. 8135Br

**Nuclear Equations: Fill in the blanks with the appropriate answer.**

3. 21082Pb 🡪 \_\_\_\_\_\_\_\_ + 42He

4. 7533As 🡪 7534\_\_\_ + \_\_\_\_\_\_\_\_\_\_

5. 23590Th 🡪 \_\_\_\_\_\_\_ + 23188\_\_\_

*Write the nuclear equations:*

6. Plutonium-245 when bombarded with an alpha particle experience decay and produces a new element, a neutron, and a beta radiation.

7. A Beta particle and Calcium-42 are the emitted results of a decomposition reaction.

**Half-Life Problems:**

1. Pt-206 undergoes beta decay with a half-life of 38.0 minutes.
   1. Write a balanced nuclear equation.
   2. If you start with 250.0g of Pt-206, how much will remain after 228.6 minutes?
2. Nitrogen-13 decays by beta emission and has a half-life of 10.0 minutes. Assume you start with a 12.87g sample. How much of your sample will remain after 4.26 half-lives have passed?