# Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Hour: \_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

# Chemistry: *Nuclear Equations*

*Directions*: *Solve each of the following problems. Where necessary, show your work and include proper units.*

1. Write a balanced nuclear equation for the…

A. …-decay of uranium-238 D. …production of cobalt-59 by electron capture

B. …-decay of carbon-14 E. …production of zinc-66 by -decay

C. …positron decay of oxygen-15 F. …production of C-12 + a neutron, by -decay

2. What isotope is present at the end of each radioactive decay series?

A. lead-210:  C. radium-226: 

B. uranium-238:  D. thorium-234: 

3. Element 109 is meitnerium and is named after Lise Meitner. If a Mt-266 nucleus was produced from the bombardment of a bismuth-209 nucleus by an iron-58 nucleus, what other product(s) is/are formed? Write a balanced nuclear equation to justify your answer.

4. Californium-249 was bombarded in creating nuclei of seaborgium-263. Four neutrons were emitted for each Sg-263 nuclide formed. What was the bombarding particle? Write an equation to justify your answer.