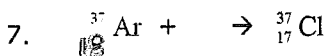
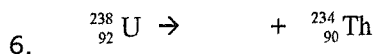
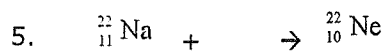
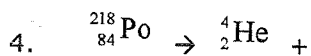
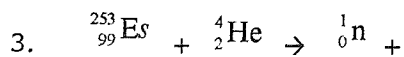
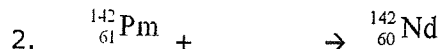
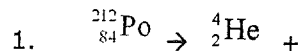


Nuclear Reaction Worksheet

Complete the following equations.



1. Write a nuclear equation for the alpha decay of ${}_{91}^{231}\text{Pa}$.

2. Write a nuclear equation for the beta decay of ${}_{87}^{223}\text{Fr}$.

3. Write a nuclear equation for the alpha decay of ${}_{62}^{149}\text{Sm}$.

4. Write a nuclear equation for the beta decay of ${}_{61}^{165}\text{Pm}$.

5. Write a nuclear equation for the alpha decay of ${}_{101}^{249}\text{Md}$.

6. Write a nuclear equation for the alpha decay of ${}_{62}^{146}\text{Sm}$.

7. Write a nuclear equation for the beta decay of ${}_{85}^{198}\text{At}$.

8. Write a nuclear equation for the alpha decay of ${}_{64}^{150}\text{Gd}$.

9. Write a nuclear equation for the beta decay of ${}_{54}^{152}\text{Xe}$.

Write an equation for the following elements through the given emission type.

Alpha Decay:

1. Polonium-218
2. Polonium-214
3. Polonium-210
4. Radium-224
5. Radium-220
6. Radon-220
7. Radon-219

Beta Decay:

1. Lead-210
2. Lead-214
3. Bismuth-210
4. Bismuth-212
5. Bismuth-214