Complete the following equations.

$$^{232}_{90}$$
 Th \rightarrow $^{-}$ Ra + $^{4}_{2}$ He

$$^{224}_{88}$$
 Ra \rightarrow Rn + $^{4}_{2}$ He

$$^{216}_{84}$$
 Po $ightarrow$ Pb + $^{4}_{2}$ He

$$^{64}_{29}$$
 Cu \rightarrow $^{--}$ Zn+ $^{0}_{-1}$ e

$$^{25}_{11}$$
 Na \rightarrow $^{--}$ Mg + $^{0}_{-1}$ e

$$^{56}_{25}$$
 Mn \rightarrow $^{--}$ Fe + $^{0}_{-1}$ e

$$\frac{}{}$$
 Bi $\rightarrow \frac{208}{81}$ Tl + $\frac{4}{2}$ He

$$\frac{}{}$$
 Ac $\rightarrow \frac{^{221}}{^{87}}$ Fr + $\frac{^4}{^2}$ He

$$\underline{}$$
 U $\rightarrow \frac{229}{90}$ Th + $\frac{4}{2}$ He

$$\overline{_{92}} \ \mathsf{U} \to {}^{234} \ \mathsf{Th} + \overline{_2} \ \mathsf{He}$$

$$^{237}_{--}$$
 Np $\rightarrow ^{--}_{91}$ Pa + $^{-4}_{--}$ He

213
 Po $\rightarrow \frac{}{82}$ Pb + $\frac{}{}$ He

— Be
$$\rightarrow {}^{10}_{5}$$
 B + ${}^{0}_{-1}$ e

$$-$$
 F $\rightarrow \frac{20}{10}$ Ne + $\frac{0}{10}$ e

$$\overline{}$$
 Br $ightarrow ^{83}_{36}$ Kr + $^0_{-1}$ e

$$^{125}_{--}$$
 Sb $\rightarrow ^{--}_{52}$ Te + $^{0}_{-1}$ e

$$\overline{_{87}}$$
 Fr \rightarrow 222 Ra + $\overline{_{-1}}$ e

$$\stackrel{237}{-}$$
 U $\rightarrow \stackrel{-}{-}_{93}$ Np + $\stackrel{-}{-}$ e

- 4. $\frac{222}{88}$ Ra into Rn by alpha decay.
- 5. $^{199}_{79}$ Au into Hg by beta decay.
- 6. $^{215}_{83}$ Bi into Po by beta decay, which then, in turn, alpha decays into Pb