

Answer the following questions based on the in class notes

What is role of nuclear decay in the atomic isotope system?	Why does alpha (α) decay occur in an isotope system?
To stabilize an unstable isotope	α decay: lose $2p^+ + 2n^0$: Making Isotope smaller

Complete the following nuclear decay equations showing the alpha decay of common alpha emitting isotopes.

$\begin{matrix} 222 \\ 88 \end{matrix}$ Ra	\rightarrow	$\begin{matrix} 4 \\ 2 \end{matrix}$ He	+	$\begin{matrix} 218 \\ 86 \end{matrix}$ Rn	<i>(Handwritten: $222-4$ above, $88-2$ below)</i>
$\begin{matrix} 208 \\ 92 \end{matrix}$ U	\rightarrow	$\begin{matrix} 4 \\ 2 \end{matrix}$ He	+		
$\begin{matrix} 208 \\ 84 \end{matrix}$ Po	\rightarrow	$\begin{matrix} 4 \\ 2 \end{matrix}$ He	+		
$\begin{matrix} 204 \\ 84 \end{matrix}$ Po	\rightarrow	$\begin{matrix} 4 \\ 2 \end{matrix}$ He	+		
$\begin{matrix} 249 \\ 98 \end{matrix}$ Cf	\rightarrow	$\begin{matrix} 4 \\ 2 \end{matrix}$ He	+		
$\begin{matrix} 176 \\ 75 \end{matrix}$ Re	\rightarrow	$\begin{matrix} 4 \\ 2 \end{matrix}$ He	+	$\begin{matrix} 172 \\ 73 \end{matrix}$ Ta	<i>(Handwritten: $4+172$ above, $2+73$ below)</i>
	\rightarrow	$\begin{matrix} 4 \\ 2 \end{matrix}$ He	+	$\begin{matrix} 181 \\ 77 \end{matrix}$ Ir	
	\rightarrow	$\begin{matrix} 4 \\ 2 \end{matrix}$ He	+	$\begin{matrix} 233 \\ 95 \end{matrix}$ Am	
	\rightarrow	$\begin{matrix} 4 \\ 2 \end{matrix}$ He	+	$\begin{matrix} 207 \\ 81 \end{matrix}$ Tl	
	\rightarrow	$\begin{matrix} 4 \\ 2 \end{matrix}$ He	+	$\begin{matrix} 233 \\ 91 \end{matrix}$ Pa	