

Nuclear Reaction Guided Notes**Nuclear Reactions:**

--When the nucleus of an atom is unstable, it will _____ and the nucleus will emit particles.

--A change like this in the nucleus of an atom is called a _____.

Types of Decay

a. _____

b. _____

Alpha Decay

-- Alpha decay is a form of _____ decay - _____

-- An alpha particle is a _____

-- During alpha decay

- _____

- _____

Write the examples of alpha decay in the notes:

2 ways to write an alpha particle:

What products do you expect if an atom of actinium-227 undergoes alpha decay? Write the complete nuclear reaction.

Beta Decay

-- During beta decay, a _____ inside the nucleus of the atom _____ into an _____ and a _____.

-- The _____ stays inside the nucleus and an _____.

-- examples:

Practice Problems:

- What is an alpha particle?
- Where do you think the electron comes from in beta decay?
- What do you think is happening in this equation?
- Complete the reactions and determine if it is alpha decay or beta decay.
 - ${}^{210}\text{Pb} \rightarrow {}_{-1}^0e + \underline{\hspace{2cm}}$ Type of decay: _____
 - ${}^{230}\text{Th} \rightarrow \underline{\hspace{2cm}} + {}_{88}^{226}\text{Ra}$ Type of decay: _____