

RADIONUCLIDE (OR RADIOISOTOPE)

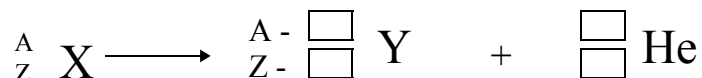
This is an isotope which decays radioactively. (Only isotopes do this. Elements which have no isotopes are stable).

Radioactive Decay

- 1 a) An **alpha particle** is a _____ nucleus.

Therefore, it has an atomic number of _____ and a mass number of _____.

When an isotope releases an alpha particle, the mass number and atomic numbers both change.

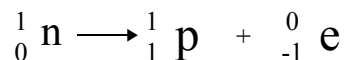


Fill the boxes
with numbers

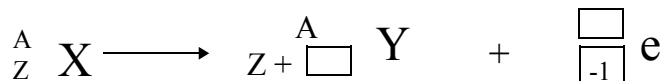
- b) Is a new element formed? How can you tell?

- 2 a) A beta particle is a high energy _____ emitted from the NUCLEUS.

It is created when a neutron decays into a proton and an electron.



This means the total number of protons _____ by one. The _____ number therefore also _____ by one.



Fill the boxes
with numbers

- b) Is a new particle formed? _____

- 3 a) A gamma ray is _____ radiation. Energy is lost from the atom in the form of photons, but the isotope itself does not change.

◇ Now answer page 75 question 69. (You will need the periodic table)

3 b) Radioactive Decay can result in the atomic number going down by two

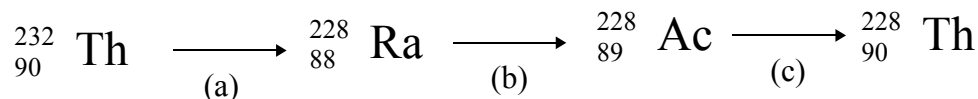
(_____ decay) or up by one (_____ decay).

If the atomic number seems to have gone down by one, what must have happened?

(Two possible answers).

EXPLAINING RADIOACTIVE DECAY

1 Identify the particle emitted at each stage in this decay series:

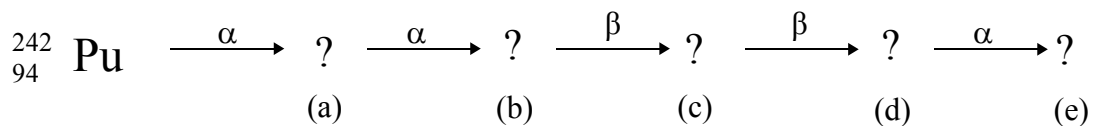


(a) = _____ because _____

(b) = _____ because _____

(c) = _____ because _____

2 In the following decay series identify the missing isotopes: (you will need the periodic table).



(a) = _____ (c) = _____ (e) = _____

(b) = _____ (d) = _____

◇ Now answer page 75 question 70