

IV.Y Small test - revision

names:

Example 1.

What is the difference between a radioactive isotope of an atom and a an isotope of the same atom that is not?

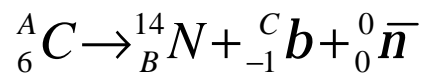
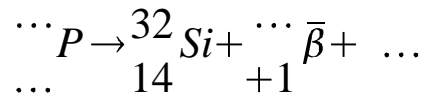
Example 2.

Which of the three types of radiation (alpha, beta, gamma):

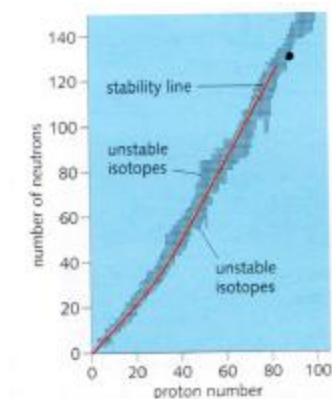
- a) is made up of electrons
- b) is a form of electromagnetic radiation
- c) is stopped by skin
- d) carries positive charge
- e) has the same properties as X-rays
- f) travels at the lowest speed
- g) can penetrate a thick sheet of lead
- h) is stopped by skin
- i) is the most ionizing

Example 3.

Complete following decay equations:



Example 4.



There is the graph of a stability of the nucleus below. By which decays (α , β^- , β^+) can the isotope marked with the big black spot (in right top corner) become stable? (it's more than one decay)

Example 5.

Atom of radon-222 decays with two alpha decays and then with one beta minus decay. Write the name, mass and proton number of this reaction product atom!

48 Cd Cadmium 112.411	49 In Indium 114.818	50 Sn Tin 118.710	51 Sb Antimony 121.780	52 Te Tellurium 127.60	53 I Iodine 126.90447	54 Xe Xenon 131.293	K L M N O
80 Hg Mercury 200.59	81 Tl Thallium 204.3833	82 Pb Lead 207.2	83 Bi Bismuth 208.98040	84 Po Polonium (208.9824)	85 At Astatine (209.9871)	86 Rn Radon (222.0176)	K L M N O P
112 Uub Ununbium (285)	113 Uut Ununtrium (284)	114 Uuq Ununquadium (289)	115 Uup Ununpentium (288)	116 Uuh Ununhexium (292)	117 Uus Ununseptium	118 Uuo Ununoctium (294)	K L M N O P

Example 6.

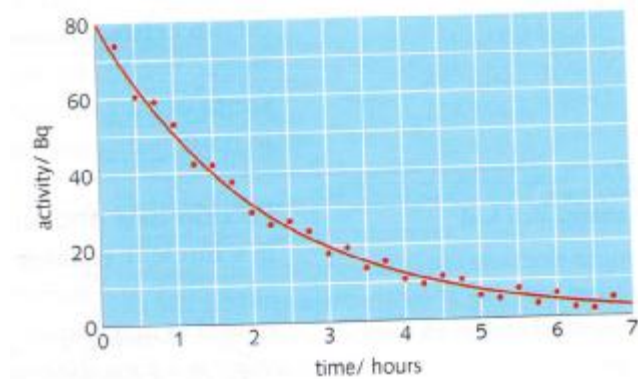
Half-life of an atom of iodine-128 is 25 minutes, the activity of a sample is 700 Bq. What was the activity of this sample 1 hour and 15 minutes ago?

Example 7.

A sample of an element A has double the activity and half of the half-life than a sample of an element B. What will be their activity after half-life of element A, half-life of element B, twice the half-life of A, twice the half-life of B?

Example 8.

estimate half life from the graph



Example 9.

two element with different HL, but same activity, which will be bigger after 10 years?

Example 10.

What is the difference between Rutherford's and Thomson's model of atom?