

- 1 Define the **half-life** of a radioactive isotope
- 2 During radioactive carbon dating of ancient wood, a sample had an activity of 80 Bq.
The same mass of living wood had an activity of 640 Bq
The half life of the the radioactive carbon in the wood is 5,600 years
 - a) Calculate how many half-lives the activity took to decrease from 640 Bq to 80 Bq
 - b) Calculate the age of the ancient sample of wood

- 2 During radioactive carbon dating of ancient cloth, a sample had an activity of 12 Bq.
The same mass of new cloth had an activity of 24 Bq
The half life of the the radioactive carbon in the cloth is 5,600 years
 - a) Calculate how many half-lives the activity took to decrease from 24 Bq to 12 Bq
 - b) Calculate the age of the ancient cloth

- 3 Plot a graph of the count rate of a radioactive source against time for the data below

Time (minutes)	0	10	20	30	40	50
Count rate (counts/minute)	510	415	335	275	227	188

- 4 Use the graph to find the half life of the source
- 5 Plot a graph of the count rate of a radioactive source against time for the data below

Time (hours)	0	0.5	1.0	1.5	2.0	2.5
Count rate (counts/minute)	99	82	68	56	45	36

- 6 Use the graph to find the half life of the source