

Radioactive Decay Data

RADIOACTIVE ISOTOPE	DISINTEGRATION	HALF-LIFE (years)
Carbon-14	$C^{14} \rightarrow N^{14}$	5.7×10^3
Potassium-40	$K^{40} \begin{matrix} \rightarrow Ar^{40} \\ \rightarrow Ca^{40} \end{matrix}$	1.3×10^9
Uranium-238	$U^{238} \rightarrow Pb^{206}$	4.5×10^9
Rubidium-87	$Rb^{87} \rightarrow Sr^{87}$	4.9×10^{10}

	Total Number of Years			
# Half Lives	Carbon-14	Potassium-40	Uranium-238	Rubidium-87
0	0	0	0	0
1	5,700	1,300,000,000	4,500,000,000	49,000,000,000
2	11,400	2,600,000,000	9,000,000,000	98,000,000,000
3	17,100	3,900,000,000	13,500,000,000	147,000,000,000
4	22,800	5,200,000,000	18,000,000,000	196,000,000,000
5	28,500	6,500,000,000	22,500,000,000	245,000,000,000
6	34,200	7,800,000,000	27,000,000,000	294,000,000,000
7	39,900	9,100,000,000	31,500,000,000	343,000,000,000
8	45,600	10,400,000,000	36,000,000,000	392,000,000,000
9	51,300	11,700,000,000	40,500,000,000	441,000,000,000
10	57,000	13,000,000,000	45,000,000,000	490,000,000,000

	Percentages		Fractions		Ratios
# Half Lives	Parent	Daughter	Parent	Daughter	Parent:Daughter
0	100%	0%	1	0	1:0
1	50%	50%	1/2	1/2	1:1
2	25%	75%	1/4	3/4	1:3
3	12.5%	87.5%	1/8	7/8	1:7
4	6.25%	93.75%	1/16	15/16	1:15
5	3.125%	96.875%	1/32	31/32	1:31
6	1.5625%	98.4375%	1/64	63/64	1:63
7	0.78125%	99.21875%	1/128	127/128	1:127
8	0.39063%	99.60938%	1/256	255/256	1:255
9	0.19531%	99.80469%	1/512	511/512	1:511
10	0.09766%	99.90234%	1/1024	1023/1024	1:1023

HALF-LIFE GRAPH

Parent
Daughter

