(4.12) A radioactive sample was measured at different time intervals. Determine the half-lives of the two nuclides (not genetically related) in the sample and their activities (in Bq) at time t=0. The background of the detection device was 100376 counts per 1000 min; its counting efficiency was 17%.

Calculations and graphing below gives: half-lives 4.4 and 107 hours. Corresponding zero time activities are: 1030 and 98 Bq. This shows an alternative trial and error method instead of the normal graphical solution.

i := 1 .. 9

71.14 51.434

		A . –	100376	a1 ≔ 99	<i>th1</i> = 10	4 a2 ≔	1030 t	h2 = 4.40	
t _i :=	A _i :=	R: :=	1000						
0.3	11100	60	·0.17		/- In	(2)		n(2)	
5	5870	R _i	6 .	- κ _i - ε	$t = \frac{1}{t}$	$ \dot{t}_i = i$	a∠∙exp\—	$\frac{1}{1}$ the transformed state t_i	0
10	3240	1.078 · 10 ³	TX	i :=		R _i	· · ·	· 1()0
15	2005	565.649	<i>fx</i> , is remaining difference in %						
20	1440	307.806							
30	1015	186.728							
40	888	131.336							
50	826	89.669	Error plot						
100	625	77.218	1.5]

