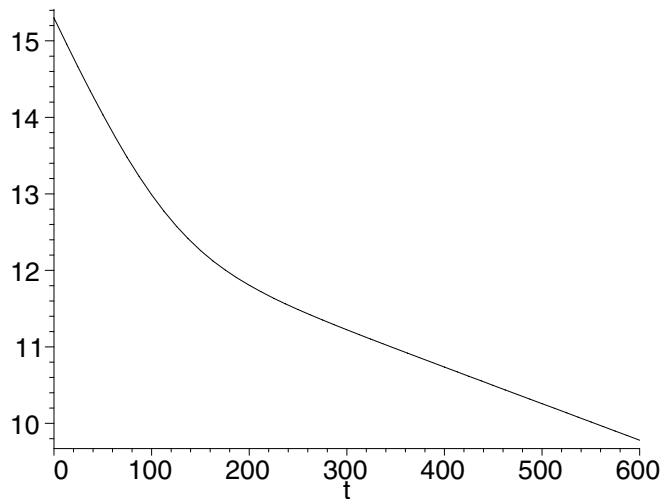


40. We note that  $2.42 \text{ min} = 145.2 \text{ s}$ . We are asked to plot (with SI units understood)

$$\ln R = \ln(R_0 e^{-\lambda t} + R'_0 e^{-\lambda' t})$$

where  $R_0 = 3.1 \times 10^5$ ,  $R'_0 = 4.1 \times 10^6$ ,  $\lambda = \ln 2/145.2$  and  $\lambda' = \ln 2/24.6$ . Our plot is shown below.



We note that the magnitude of the slope for small  $t$  is  $\lambda'$  (the disintegration constant for  $^{110}\text{Ag}$ ), and for large  $t$  is  $\lambda$  (the disintegration constant for  $^{108}\text{Ag}$ ).