**The Radioactive Decay Law**

Exponential decay law:

Consider a system of particles, N0 in number at time, t = 0. Each of these particles has an independent, but equal probability of decay per unit time, λ. Assume that N is large enough. Here, the change in N us given by:

dN = −λNdt; N(0) = N0

Using wxmaxima, solve this differential equation to find exponential decay law and hence derive the expression for the half life t1/2. Also, get the plots of the curves in a single plot window for various values of λ ranging from 0.5 to 7.5, by choosing the interval length as 0.5, whenever N0 is 100.