**Case study 3:**

Suppose a population P of rodents satisfies the differential equation . Initially, there are *P*(0) =2 rodents, and their number is increasing at the rate of = 1 rodent per month when there are *P* = 10 rodents.

(i) Manually compute, how long will it take for this population to grow to a hundred rodents? To a thousand?

Using wxMaxima, find the following:

(ii) general solution with unknown constant.

(iii) general solution with