

> restart; with(plots); N0 := 1000;

[animate, animate3d, animatecurve, arrow, changecoords, complexplot, complexplot3d, conformal, conformal3d, contourplot, contourplot3d, coordplot, coordplot3d, densityplot, display, dualaxisplot, fieldplot, fieldplot3d, gradplot, gradplot3d, graphplot3d, implicitplot, implicitplot3d, inequal, interactive, interactiveparams, intersectplot, listcontplot, listcontplot3d, listdensityplot, listplot, listplot3d, loglogplot, logplot, matrixplot, multiple, odeplot, pareto, plotcompare, pointplot, pointplot3d, polarplot, polygonplot, polygonplot3d, polyhedra_supported, polyhedraplot, rootlocus, semilogplot, setcolors, setoptions, setoptions3d, spacecurve, sparsematrixplot, surfdata, textplot, textplot3d, tubeplot]

$$N0 := 1000 \quad (1)$$

> lambda := 0.1;

$$\lambda := 0.1 \quad (2)$$

> odeInHom := diff(N(t), t) = -lambda·N(t) + q(t); odeHom := diff(N(t), t) = -lambda·N(t);

$$\text{odeInHom} := \frac{d}{dt} N(t) = -0.1 N(t) + q(t)$$

$$\text{odeHom} := \frac{d}{dt} N(t) = -0.1 N(t) \quad (3)$$

> solutionInHom := rhs(dsolve({odeInHom, N(0) = N0 }, N(t))); solutionHom := rhs(dsolve({odeHom, N(0) = N0 }, N(t)));

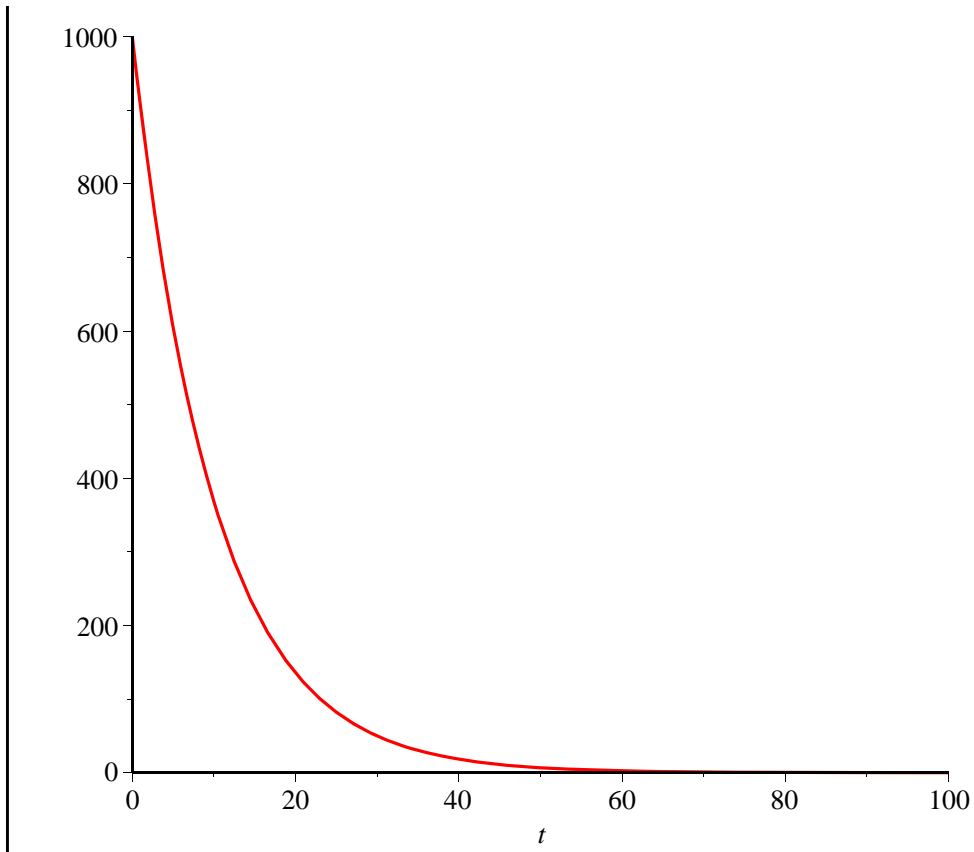
$$\text{solutionInHom} := \left(\int_0^t q(-zI) e^{\frac{1}{10} -zI} d_zI + 1000 \right) e^{-\frac{1}{10} t}$$

$$\text{solutionHom} := 1000 e^{-\frac{1}{10} t} \quad (4)$$

> myplot = Array(1..2); myplot[1] := plot(solutionHom, t = 0..100); display(myplot[1]);

$$\text{myplot} = \begin{bmatrix} 0 & 0 \end{bmatrix}$$

$$\text{myplot}_1 := \text{PLOT}(\dots)$$



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