- Use **DSolve**[ ] to obtain the analytical solutions for the following first order differential equations using the given boundary conditions. Print out the analytical expressions of these solutions. Plot the solutions. Assure that your solution agrees with the known one. Plot your solution.

$$m\frac{dv}{dt} = -mg - \eta v$$

- Boundary condition: $v=0$ at $t = 0$. The analytical solution is known to be

$$v(t) = -\left(\frac{mg}{\eta}\right)\left[1 - \exp\left(-\frac{\eta t}{m}\right)\right]$$