Differential Equations:

1. Solve the following problems for y(t). Plot your answers (either sketch them by hand or use MATLAB) for $t = 0$ to $t = 5$ sec.

a) $\dfrac{dy}{dt} + 2y(t) = 2x(t); \quad x(t) = u(t), y(0) = -1$

b) $\dfrac{dy}{dt} - 2y(t) = 2x(t); \quad x(t) = u(t), y(0) = -1$