

6. [14 points] Find solutions to each of the following, as indicated.

a. [7 points] Find the general solution to  $y'' + y' = \frac{1}{1 + e^t}$ . (*Hint:*  $\int \frac{1}{1+e^t} dt = t - \ln(1 + e^t)$ .)

b. [7 points] Find the solution to  $y'' - y' = u_2(t) - u_3(t)$ ,  $y(0) = 0$ ,  $y'(0) = 0$