Problem 1. Find the general solution of the equation

\[ y'' + 4y' + 4y = (2t^2 + 3)e^{-2t} + (t + 2)e^{-2t} \cos(3t) + 2 \sin(4t) - 4e^t - 3t. \]

Do not find undetermined coefficients, just designate them by letters \((A, B, \ldots)\).