2. [15 points] Find explicit, real-valued solutions to each of the following, as indicated. For this problem, **USE Laplace transforms**.

    a. [8 points] Find the solution $y(t)$ to the initial value problem $y'' + 3y' + 2y = 4$, $y(0) = 0$, $y'(0) = 0$.

    b. [7 points] Find the solution $z(t)$ to the initial value problem $z'' + 2z' + 10z = 0$, $z(0) = 1$, $z'(0) = 3$.