

1. [15 points] For each of the following, find explicit real-valued solutions as indicated.
- a. [7 points] Find the solution to the initial value problem  $y'' + 2y' + 17y = 0$ ,  $y(0) = 1$ ,  $y'(0) = 0$ .

- b. [8 points] Find the general solution to the equation  $y'' + 5y' + 4y = e^t + 8t$ .