HOMEWORK 12-PART A

1. Find a particular solution for the following differential equations.
(i) $y'' + 25y = 2 + 3t + cost + cos5t$.
(ii)$y'' + 2y' + 2y = 3cost + e^{-4t} + 1$(remember, 1 is a polynomial.)

2. Solve the general solutions for the homogeneous equation.
(1) $y'' - 3y' + 2y = 0$,
(2)$y'' + 2y' + 2y = 0$. (you may get complex solution, but the question ask for real solutions.)

3. Let us explore one more general case, like the following, the right hand side $f(t) = te^{-4t}$. Imitate our process in class, use the form $y(t) = (at + b)e^{-4t}$ in an attempt to find a particular solutionof the equation $y'' + 3y' + 2y = te^{-4t}$.