Math 202-112 Quiz 3 (B)

Name:.....ID#:.....Sec#.....Ser#.....

Q.1: Given that $y = e^x(c_1 \cos x + c_2 \sin x)$ is a two parameter family of solutions of $y'' - 2y' + 2y = 0$. Find a member of the family that satisfies the boundary conditions $y(0) = 1$ and $y(\frac{\pi}{2}) = 0$.

Q.2: Verify that $1, x, \cos 2x, \sin 2x$ form a fundamental solutions of $y^{(4)} + 4y'' = 0$ on the interval $(-\infty, \infty)$. Also write the general solution.

Q.3: If $y_{p_1} = 3e^{2x}$ is a particular solution of $y'' - 6y' + 5y = -9e^{2x}$ and $y_{p_2} = x^2 + 3x$ is a particular solution of $y'' - 6y' + 5y = 5x^2 + 3x - 16$. Find particular solution of $y'' - 6y' + 5y = 10x^2 + 6x - 32 + 7e^{2x}$.