

Quiz 2 Math 202 Semester: 163 Duration: 40 minutes

Full Name:

ID:

Section and Serial number:

Q 1 Solve the DE:

$$(D^4 - 3D^3 + 2D^2)(D^2 + 2D + 2)^2 y = 0.$$

Q 2 Given that, $y_1 = e^{\frac{x}{2}}$ is a solution of $2y''' + 7y'' + 4y' - 4y = 0$. Find the general solution of this DE.

Q 3 Given that $y = C_1 + C_2 e^{5x}$ is the general solution of $y'' - 5y' = 0$. Determine the form of a solution for the DE: $y'' - 5y' = x - 2 + x(e^{5x} + e^{-5x}) + e^{2x} \sin x$.

Q 4 Given that $y_1 = x - 1$ is a solution of $(x^2 - 2x + 2)y'' - 2(x - 1)y' + 2y = 0$. Find a second solution y_2 that is linearly independent of y_1 .