King Fahd University of Petroleum and Minerals
Math & Stat. Departement
Quiz (3)

Name	ID	SEC	Sr

Q1) Find a differential equation for which $y = (x + e^x)^3$ is a solution.

Q2) Solve $\dfrac{d^2 y}{dx^2} - 2\dfrac{dy}{dx} + y = \dfrac{e^x}{1 + x^2}$.

Q3) Solve $\overset{(5)}{y} + 5\,\overset{(4)}{y} - 2\,\overset{(3)}{y} - 10\,\overset{(2)}{y} + \overset{(1)}{y} + 5y = 0$

Q4) Use the undetermined coefficients method to solve $\dfrac{d^2 y}{dx^2} - 2\dfrac{dy}{dx} - 3y = 4e^x - 9$

Q5) Given that $y_1 = \cos(\ln x)$ is a solution of $x^2 \dfrac{d^2 y}{dx^2} + x\dfrac{dy}{dx} + y = 0$, find the

general solution of $x^2 \dfrac{d^2 y}{dx^2} + x\dfrac{dy}{dx} + y = \sec(\ln x)$