MATH 202.15 (Term 112)
Quiz 4 (Sects. 4.5-4.7) **Duration: 20mn**

Name: **ID number:**

1.)Find the form of a particular solution for $y''' - 2y'' + y' = x - 2x^2 + 3e^x + e^{-x}\cos 4x$.
2.)Find the general solution of the DE $x^2y'' + xy' + (x^2 - \frac{1}{4})y = x^{3/2}$ **given that** $\{x^{-1/2}\cos x, x^{-1/2}\sin x\}$ **is a fundamental set of solutions for the associated homogeneous equation.**
3.)Consider the DE $x^3y''' + 3x^2y'' + xy' - y = \ln x$.
a.)Transform the equation into a linear DE with constant coefficients.
b.)Find the general solution of DE in a.).
