

Engineering Mathematics I---Quiz-4

Nov. 9, 2005

- 1) Find the general solution of the given second-order differential equation.

$$3y'' + 2y' + y = 0 \quad (30\%)$$

- 2) Find the differential equation of the general second-order solution.

$$y = e^x(\cos 2x + 2\sin 2x) \quad (30\%)$$

- 3) Solve the given initial-value problem.

$$y''' - 2y'' + y' = 2 - 24e^x + 40e^{5x}; \quad y(0) = \frac{1}{2}, y'(0) = \frac{5}{2}, y''(0) = -\frac{9}{2} \quad (40\%)$$