MATH 320, Spring 2013, Assignment 11

Textbook Questions

Section 5.2 A nonhomogeneous differential equation, a complementary solution y_c, and a particular solution y_p are given. Find a solution satisfying the given initial conditions.

 # 24. $y'' - 2y' + 2y = 2x; y(0) = 4, y'(0) = 8; y_c = C_1 e^x \cos x + C_2 e^x \sin x; y_p = x + 1$

Section 5.5 Find a particular solution y_p of the given equation.

 # 10. $y'' + 9y = 2\cos 3x + 3\sin 3x$

 # 16. $y'' + 9y = 2x^2 e^{3x} + 5$

Set up the appropriate form of a particular solution y_p, but do not determine the values of the coefficients.

 # 26. $y'' - 6y' + 13y = xe^{3x} \sin 2x$

Solve the following initial value problems.

 # 34. $y'' + y = \cos x; y(0) = 1, y'(0) = -1$

 # 38. $y'' + 2y' + 2y = \sin 3x; y(0) = 2, y'(0) = 0$