Math 308: Homework 5

Spring 2024

Attempt but **do not submit.** 12th Edition of Boyce, DiPrima, Meade.

3.4: Find the general solution

3.
$$4y'' - 4y' - 3y = 0$$

5.
$$y'' - 6y' + 9y = 0$$

Find the solution of the given initial value problem.

9.
$$9y'' - 12y' + 4y = 0, \quad y(0) = 2, \;\; y'(0) = -1$$

11 .
$$y'' + 4y' + 4y = 0, \quad y(-1) = 2, y'(-1) = 1$$

19. If $y_1(t) = t$ is a solution of the equation
$$t^2y'' + 2ty' - 2y = 0, \quad t > 0$$
find a second independent solution $y_2(t)$.

21. If $y_1(x) = \sin(x^2)$ is a solution of the equation
$$xy'' - y' + 4x^3y = 0, \quad x > 0$$
find a second independent solution $y_2(x)$.

3.5: Find the general solution of the given differential equations

2. $y'' - y' - 2y = -2t + 4t^2$
4. $y'' - 2y' - 3y = -3te^{-t}$
5. $y'' + 2y' = 3 + 4\sin(2t)$