Math 308: Homework 4

Spring 2024

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

3.1: Find the general solution

6.
$$y'' - 2y' - 2y = 0$$

Find the solution of the given initial value problem.

8 .
$$y'' + 4y' + 3y = 0, \quad y(0) = 2, y'(0) = -1$$

11.
$$y'' + 8y' - 9y = 0, \quad y(1) = 1, y'(1) = 0$$

15. Find the solution of the initial value problem then determine the maximum value of the solution and also find the point when the solution is zero
$$2y'' - 3y' + y = 0, \quad y(0) = 2, \;\; y'(0) = \frac{1}{2}$$

3.2: Find the Wronskian of the pair

3. e^{-2t}, te^{-2t}

4. $e^t \sin(t)$, $e^t \cos(t)$

Find the longest interval in which the differential equation is certain to have a twice differentiable solution. Do not attempt to find the solution.

8.
$$y'' + (\cos(t))y' + 3\ln(|t|)y = 0, \; y(2) = 3, \;\; y'(2) = 1.$$

3.3:
Find the solution

13.
$$y'' - 2y' + 5y = 0, \quad y(\pi/2) = 0, \;\; y'(\pi/2) = 2$$

15.
$$y'' + 2y' + 2y = 0, \; y(\pi/4) = 2, \;\; y'(\pi/4) = -2$$