

MATH 4305 - Applied Mathematics I
Homework 3 - Method of Frobenius
Due - Monday, October 5, 2015

For all problems, find the coefficients from a_0 through a_6 and the recurrence relationship.

Use the Method of Frobenius to determine the solution to the following initial value problems:

1. $8x^2y''(x) + 2xy'(x) + (x^2 + 1)y(x) = 0$

2. $4x^2y''(x) + 3xy'(x) + (x^2 - 3)y(x) = 0$

3. $x^2y''(x) + 5xy'(x) + (2x^2 + 4)y(x) = 0$

4. $x^2y''(x) + 4xy'(x) + x^2y(x) = 0$