

Homework Assignment 7

Due on Tuesday 5/13

Programming Problems:

1. Write a code that solves the boundary value problem:

$$y''(x) = p(x)y'(x) + q(x)y(x) + r(x) \quad \forall x \in [a, b], \quad y(a) = \alpha, y(b) = \beta$$

Your code should take functions p , q , r and numbers a , b , α , β , and numbers of grid intervals n as input. Use equidistance discretization, i.e $x_i = a + ih$ and $h = (b - a)/n$. Output the approximate solution y_i . Submit your codes through iLMS.

Writing Problems:

- Do the following exercise problems in the text book by Bradie,
Exercise 8.1: 1, 8, 11.
Exercise 8.2: 6, 13, 16.