

MACM 316 - Computing Assignment 3

- Read the *Guidelines for Assignments* first.
- Submit a one-page PDF report to Crowdmark and upload your Matlab scripts (as m-files) to Canvas. *Do not use any other file formats.*
- Keep in mind that Canvas discussions are open forums.
- You must acknowledge any collaborations/assistance from colleagues, TAs, instructors etc.

From the textbook, Burden and Faires (10th edition):

Part A: (3 marks)

Using Matlab, complete Question 6 in Exercise Set 2.2.

Part B: (2 marks)

Present a table or a plot of the absolute error $|p_n - p|$ against n to further illustrate the convergence or divergence of the iterations in part A.

Part C: (5 marks)

Using your computed results from Part B, estimate the order of convergence α and the asymptotic error constant λ for each convergent iteration. Explain clearly how you compute each constant. A table or plot may be useful here as well.

There are several possible ways to compute the constants. Some methods are better than others, and will be assigned higher grades.

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NOTES:

- See Definition 2.7 on page 78 of the text for the definition of α and λ .
- Refer to the Guidelines for Computing Assignments for general rules, requirements on written communication, information on the graphical presentation, and the grading scheme.
- Remember that you will be marked based on your report so make sure that it includes all of your results. We do not normally access your submitted Matlab scripts, but we may if we have academic integrity or other concerns.

Submit your 1 page report for this question to Crowdmark in .pdf format according the Assignment Guidelines described in the syllabus.

Submit your Matlab code to Canvas "Computing Assignment 3 - Matlab Code". Do not include identifying information on your report.

After marking, we will post a few exemplary reports as sample solutions. We appreciate your support on this. If you do not wish to have your report posted, please state so at the top of your report.