Week 0: Reading and Exercises

Reading

Our two goals in these first few days are first to review the important vector spaces introduced in MA2071 and then to gain some exposure to alternative fields. Please read Chapter 1 (which is all review, except §1.7 which is optional) as well as the first four Appendices, A,B,C and D which introduce fundamental concepts of university-level mathematics.

Practice Exercises (do not hand in)

Each week, a large number of problems from the text will be given. Each student is encouraged to grab a piece of scrap paper and jot down quick solutions to each of these problems. (Some can be done in your head, but don’t let this tempt you to avoid understanding the ones that cannot!) One important function of these exercises is to help you gain familiarity with different examples of vector spaces that may arise on tests.

This week, we have an assignment due on Monday. So you may not get to review these practice problems right away. But these will help you refresh your memory on the material needed to begin this second course in linear algebra.

- p554: Prove Theorem C.1(a)
- p558: Prove Theorem D.2(a,d,e)
- p561: Prove the corollary on p561
- p12-15: # 1–4, 7, 8, 11, 13–18
- p19-21: # 1, 2, 5, 8, 9-19 (odd)
- p32-34: # 1, 2(a),3(a),4(a),5(a,e,g), 6–12
- p40-42: # 1, 2(a-f), 4, 5, 6, 9, 10, 20
- p53-57: # 1, 2(a), 3(a), 6, 9, 16, 17 (so many good MA2071 problems here!)
- p61-62: Section 1.7 is very interesting, but optional. If you plan to study abstract mathematics in the future, please consider the exercises here (e.g., #2,3)

Note: In all examples and exercises in the text, the field $\mathbb{F}$ is assumed to have characteristic zero (hence contains all rational numbers), unless otherwise noted.