

Math 22 Lin Alg: Homework 1

due Wed Jun 28 . . . but best if do relevant questions after each lecture

This is a short (2/3 length) homework since you only have 5 days to do it.

Required problems from David Lay book: (remember to show your working/reasoning—answers without explanation will not receive a high score!) You may want to warm up with the practise problems, or odd problems nearest the assigned ones.

- 1.1:** Goals: Write a system of linear equations in matrix notation; solve a linear system using elementary row operations; determine whether a system is consistent.
12, 20, 24.
- 1.2:** Goals: Compute the echelon and reduced echelon forms of a matrix and use them to solve systems of equations; determine whether a solution is unique, and if not, parameterize the set of all solutions.
2, 4, 12 (is the system consistent? unique?), 33 (you fitted a 2^{nd} order polynomial to 3 data points. What is the generalization to more points?)
- 1.3:** Goals: Understand algebraic and graphical representation of vectors; know how to convert from vector equations to linear systems of equations to augmented matrices; understand linear combinations and the span of a set of vectors.
8, 12, 24, 32.