## Outline

We will cover $\S 1 .-\S 2$ and $\S 3$ if time permits. Guiding questions and concepts for the week are

1. How do we solve a mxn linear system? ( $m$ equations; $n$ unknowns.)
2. What arethepossiblescenarios? Inconsistent (No solution), Consistent (Oneor infinitely many solutions).
3. nxn system, triangular form (a very simple system); augmented matrix =coefficient matrix +RHS.
4. General mxn system, row echelon form (REF, a very simple system), reduced REF (the simplest system).
5. Simple $\approx$ easy to solve by back substitution
6. How do we go from a system to REF? Elementary row operations: essentially HS plays. Recall $2 \times 2,3 \times 3$ systems.
7. Gaussian elimination reduces a system into its equivalent REF through elementary row operations.
8. Gaussian-J ordan reduction reduces a system into its equivalent reduced REF through elementary row operations.
9. The convention of matrix operation is designed for notation consistence $a x=b \approx A X=B . x=a^{-1} b$ if $a \in 0 \approx X=A^{-1} B$ if $A^{-1}$ exists.

## Homework (due 020321)

1. §1.1: 3, 7, 11§1.2: 2f, 6a, 7, 12.§1.3: 8.

## Learning Guide and A nnouncement

1. Review§1.1§1.2. Preview§1.3-§1.5.
2. There will be other assignments for next week. Please do at least one problems per day. On P521-P539 of the textbook, there are answers to selected exercises.
3. TheTA's and their office hours will be announced shortly.
