EECS 16A Midterm 1 Review Session

Presented by <NAMES >(HKN)

Disclaimer

Although some of the presenters may be course staff, the material covered in the review session may not be an accurate representation of the topics covered in and difficulty of the exam.

Slides are posted at — on Piazza.

HKN Drop-In Tutoring

- These details should be edited

Systems of Equations and Gaussian Elimination

Vectors

Conceptually, a vector is a collection of numbers that each represent a variable. If there are n variables, then the vector is n-dimensional.

Example:

A point in 3D can be represented as (x, y, z) In vector form, this would be represented as $\begin{bmatrix} x \\ y \\ z \end{bmatrix}$

Matrices

- Collection of **vectors**
- 2D table for **storing data**
  - ◎ Systems of equations for imaging observations
- Notable/useful matrices
  - ◎ Identity matrix
  - ◎ Augmented matrices
  - ◎ Rotation matrix
  - ◎ Many others!

Augmented: $\begin{bmatrix} 1 & -2 & 3 & 7 \\ 2 & 1 & 1 & 4 \\ -3 & 2 & 3-2 & 10 \end{bmatrix}$

Rotation: $\begin{bmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{bmatrix}$