18.06 Linear Algebra: Week 2

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September 23rd, 2019

Progress Update

Over the past week I have been introduced to:

1. Subspaces of matrices
2. Solving for the nullspace of a matrix

Matrix subspaces

For a matrix multiplication of the form Ax where A is a m by n matrix and x is a n dimensional vector, there exist a few associated *subspaces*:

1. The *column space*, which is made up of all linear combinations of the columns.
2. The *Null space*, the vectors x such that $Ax = 0$. Is built out of "special solutions."

Example problem

Consider the following problem from Lecture 7:

Find the row reduced form of:

$$A = \begin{bmatrix} 1 & 5 & 7 & 9 \\ 0 & 4 & 1 & 7 \\ 2 & -2 & 11 & -3 \end{bmatrix}$$