

Extra Office Hours

today 1-3

tomorrow 2-4

Things To Know →

Basics

- How to solve linear systems with matrices
- How to tell whether a system has unique, no, or infinitely many solutions
- Applications! balancing chemical equations and circuits

Vectors

- What an n -vector is
- How to add and scalar-multiply vectors
- The definitions of span and linear independence for vectors
- How to tell when a vector is in the span of others
(matrix)

- How to tell whether a set of vectors is linearly independent (matrix)
- The dot product of vectors
- Orthogonality: the definition and how to find vectors orthogonal to a given vector
- angle between vectors

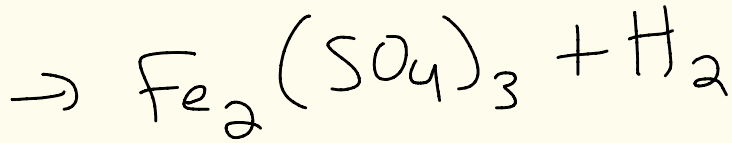
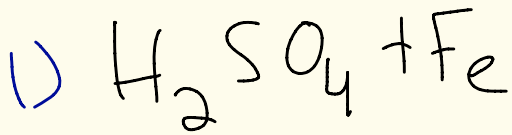
- Norms : definition
and examples

Matrices

- What $m \times n$ means (m rows, n columns)
- How to act on an n -vector by an $m \times n$ matrix
- rref: what it means and how to find it
- How to add ($m \times n$ to $m \times n$) and matrix-multiply ($n \times k$ by $m \times n$) matrices

- linearity for matrices
- transpose of a matrix -
the definition and
how to find it.

Practice



Sulfuric Acid (H_2SO_4)

Combines with Iron (Fe)

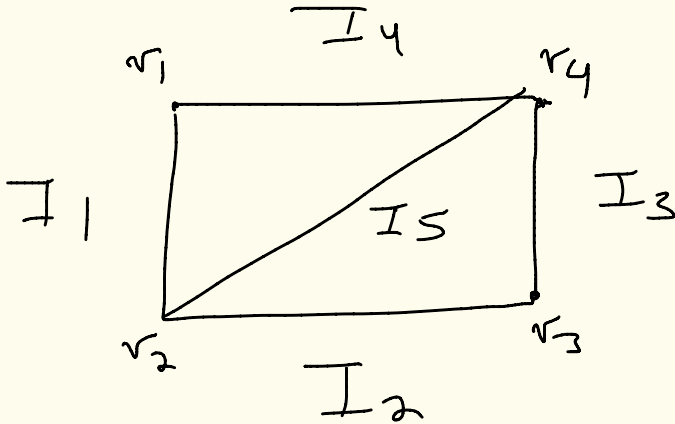
(Ferric)
to produce Iron^V Sulfate

($\text{Fe}_2(\text{SO}_4)_3$) and

Hydrogen (H_2)

Balance the equation.

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Fill in a choice of
batteries and resistors,
calculate current &
potential differences.