

Linear Algebra?!

Sets of objects

Math(s) = toys + rules!

ops, properties, laws
equivalence

→ algebra probs that lead to new ideas...

$x^2 = 4$

$x^2 - 4 = 4 - 4 = 0$

$x^2 - 4 = 0$

$(x+2)(x-2) = 0$

$x+2=0 \quad x-2=0$

$x=-2 \quad x=2$

$3x+2=1$

$3x=-1$

$(\frac{1}{3})3x = (\frac{1}{3})(-1)$

$1 \cdot x$

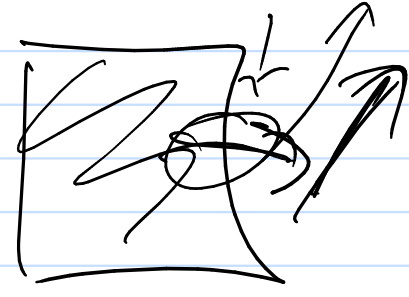
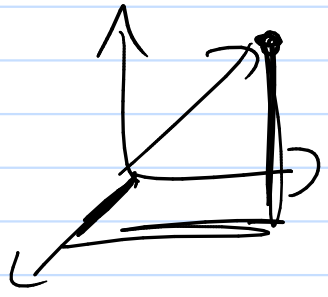
x

$\int_0^5 f(x) dx$

Linear Algebra:

set of objects = ??

Matrix, vector



Solve Systems of Linear Equations

$$\begin{cases} 3x + 2y - z = 1 \\ x - 2z = 2 \\ y - 4z = 1 \end{cases}$$

Solve

Know?
Substitution ✓
Elimination ✓

Matrix Algebra Probs

$$\begin{bmatrix} 3 & 2 & -1 \\ 1 & 0 & -2 \\ 0 & 1 & -4 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 1 \\ 2 \\ 1 \end{bmatrix}$$

coef