

A QUICK INTRO TO ALGEBRAIC GEOMETRY

GOAL: elliptic curves are smooth projective varieties of dimension 1, and genus 1, with at least one rational point.

PREVIOUSLY:

- Affine space: $\mathbb{A}^n(\bar{K}) = \{(x_1, \dots, x_n) : x_i \in \bar{K}\}$
- Proj. space: $\mathbb{P}^n(\bar{K}) = \mathbb{A}^{n+1}(\bar{K}) / \sim$, $\bar{x} \sim \bar{y} \iff \bar{x} = \lambda \bar{y}$, $\lambda \in \bar{K}^*$.
- Algebraic set: $\bar{K}[X]$



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