Reading: Schemes

If we grab the easier parts of the algebraic geometry textbook, we suggestions for some geometric constructions....

Ex: This example has to do with **parabola** and the Affrine plane (something like $\mathbb{Q}^2$:

$$\text{Spec}\,\mathbb{Q}[x,y]/(y^2-x,x) \simeq \text{Spec}\,\mathbb{Q}[y]/(y^2)$$

Look like we can get the "pre-image of -1" and get the complex numbers:

$$\text{Spec}\mathbb{Q}[x,y]/(y^2-x,x+1) \simeq \text{Spec}\,\mathbb{Q}[y]/(y^2+1) \simeq \text{Spec}\mathbb{Q}[i] = \text{Spec}\,\mathbb{Q}(i)$$

So we are still trying to identify specific "points" in our geometric object (which we are describing with rings and equation). The pre-image over the "generic point":

$$\text{Spec}\,\mathbb{Q}[x,y]/(y^2-x) \otimes_{\mathbb{Q}[x]} \mathbb{Q}(x) \simeq \text{Spec}\mathbb{Q}[y] \otimes_{\mathbb{Q}[y^2]} \mathbb{Q}(y^2)$$

Ex ? What is th scheme-theoretic **fiber** of Spec$\mathbb{Z}[i] \to$ Spec$\mathbb{Z}$ over the prime (p)?

Ex Consider Spec$k[\epsilon]/(\epsilon^2) \to$ Spec $k[x] = \mathbb{A}^1_k$ given by $x \mapsto \epsilon$. The image of the **fuzzy point**.

We'll consult with `math.Stackexchange` to see if these are correct.

References

[1] The Rising Sea: Foundations of Algebraic Geometry http://math.stanford.edu/~vakil/216blog/

[2] ...