

**Definition** (Drawings). There exists a category **Draw** in which:

1. An object in  $\alpha \in \text{Ob}_{\text{Draw}}$  is a black-and-white drawing, that is a function  $\alpha : \mathbb{R}^2 \rightarrow \mathbf{Bool}$ .
2. A morphism in  $\text{Hom}_{\text{Draw}}(\alpha; \beta)$  between two drawings  $\alpha$  and  $\beta$  is an invertible map  $f : \mathbb{R}^2 \rightarrow \mathbb{R}^2$  such that  $\alpha(x) = \beta(f(x))$ .
3. The identity function at any object  $\alpha$  is the identity map on  $\mathbb{R}^2$ .
4. Composition is given by function composition.