Random Variable Laws

1 Why

We discuss pushforward measures for random variables.

2 Definition

The **law** of a random variable defined on a probability space is the image measure of the base measure under the random variable.

The probability that

2.1 Notation

Let $(X, \mathcal{A})$ and $(Y, \mathcal{B})$ be two measurable spaces. Let $f : X \to Y$ be a random variable. Let $\mu : \mathcal{A} \to [0, \infty]$ be a probability measure. We denote the law of f by μ_f.