



Why

We name the image measures of real-valued random variables.

Definition

The *law* of a random variable is the **image measure** of the probability measure under the random variable.

For example, if the random variable is real-valued we use the topological sigma algebra of the real numbers and the law is the image measure on \mathbf{R} induced by the probability measure.

Notation

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

