



Why

What if our set of outcomes is the real line, \mathbf{R} ?

Definition

The principal difficulty is assigning nonzero numbers to infinitely many elements of a set. The solution is instead to assign probabilities to the *events* of outcomes, not to the individual outcomes (elementary events, real numbers), themselves.

A *probability density* (or *probability density function* (*pdf*)) is a function $f : \mathbf{R} \rightarrow \mathbf{R}$ satisfying $f \geq 0$ and $\int f = 1$.

