



Probability Measures

1 Why

We want a model of uncertain events. TODO

2 Definition

A **probability measure** is a measure which assigns 1 to the whole space. So probability measures are finite measures. Since, any finite measure can be scaled to a probability measure, a probability measure is an exemplar of finite measures.

A **probability space** is a measure space whose measure is a probability measure.

2.1 Notation

We denote the outcome space by Ω , a mnemonic for “outcomes.” We denote the sigma-algebra by \mathcal{A} , as usual. We denote a probability measure by p , a mnemonic for “probability.” Thus, we often say “Let (Ω, \mathcal{A}, p) be a probability space.”

2.2 Properties