Why

We want to talk about objects associated with an uncertain outcome. We use a correspondence between each outcome and objects of another set.

Definition

Let Ω be a set of outcomes. An *outcome variable* is function whose domain is Ω. We call the codomain of the function the set of values. The standard terminology is to refer to an outcome variable as a *random variable*.[1]

0.1 Example: two dice

Let $D = \{1, 2, 3, 4, 5, 6\}$. Consider the set of outcomes $A = D \times D$. An outcome variable associated with A is the function $s : A \to \mathbf{N}$ which is defined by

$$s((d_1, d_2)) = d_1 + d_2.$$

We interpret the outcome variable s as the sum of the two dice.

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[1]Future editions may do so. For now, this is avoided in contrast with the notion of measurability required for random variables.

Outcome Variables

Uncertain Outcomes

Set Powers Natural Numbers

Unordered Triples Successor Sets Intersection of Empty Set

Pair Unions Set Intersections Set Differences

Set Unions Pair Intersections

Unordered Pairs Empty Set

Set Specification

Set Inclusion

Standardized Accounts

Accounts

Deductions

Quantified Statements

Logical Statements

Statements

Identities Sets

Names

Letters Objects