

OUTCOME VARIABLES

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 $s: A \to \mathbb{N}$ 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.

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

