

Chapter 3

1. What are basic outcomes and what do they have to do with the sample space?

Basic outcomes are all possible outcomes of a random experiment. All basic outcomes together are called the sample space. The part of the basic results of interest is called an event.

2. When are the events collectively exhaustive?

If the union of several events covers the entire sample space.

3. What is the difference between permutations and combinations?

With permutations the order of objects is important, with combinations this is not of interest.

4. What is the difference between classical probability and subjective probability?

Classical: proportion of times that an event will occur, assuming that all outcomes in a sample space are equally likely to occur. Subjective probability: expresses an individual's degree of belief about the chance that an event will occur.

5. What are the five rules of chance?

Complement rule, addition rule, conditional probability, multiplication rule, statistical independence.

6. What are the possible consequences when multiple measurements on the same sample?

Joint probability, marginal probability, conditional probability, over involvement ratios.