

Statistics Notes (II)

Mahmud

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1 Probability

1.1 Important Concepts

1.1.1 Terms

Trial A single performance of well-defined experiment

Experiment *An act that can be repeated under some specific condition.* [A scientific test in which you perform a series of actions and carefully observe their effects in order to learn about something. or]

Random variable A variable whose values are associated with probability.

Sample space Set of all possible outcomes of a random experiment.

Sample point Each outcome of a sample space

Event Any subset of a sample space

Simple event An event having a single outcome

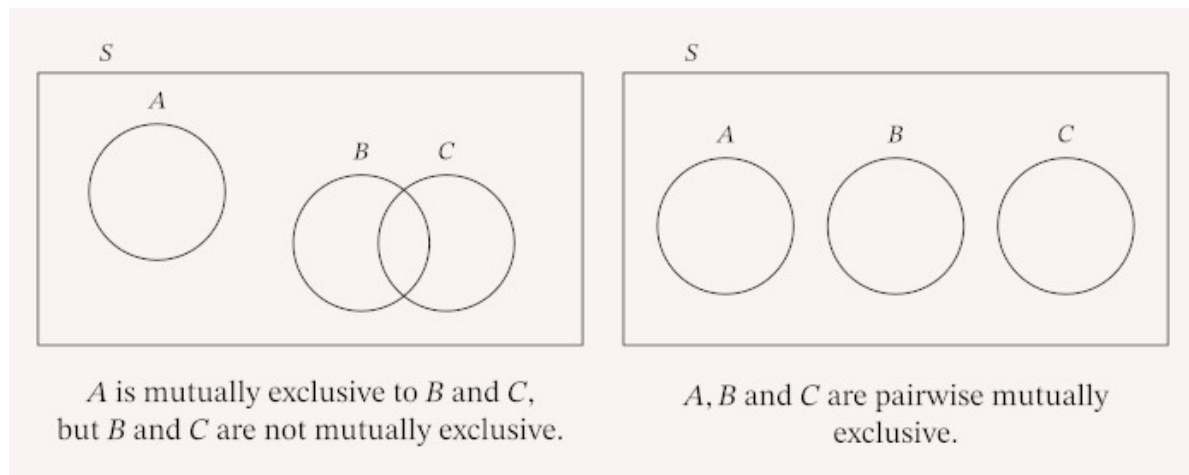
Compound/Composite event An event having more than one outcome

Impossible event An event which cannot happen (If $P(A) = 0$, then A is an impossible event)

Certain event An event which surely will or will not happen. ($P(A) = 0$ or 1)

Uncertain event An event which may or may not happen ($0 < P(A) < 1$)

Mutually Exclusive Event Events that cannot occur together. If $S = \{1, 2, 3, 4\}$, $A = \{1, 3\}$ & $C = \{4\}$ then A & C are mutually exclusive.



Independent Event Events that do not affect each other.

Complementary event Non-occurrence of an event. $P(\bar{A}) = 1 - P(A)$, where \bar{A} or A' or A^c is called complement of A.

Exhaustive event Events whose union is equal to the sample space of the experiment (all outcomes are considered)