SESA6085

Advanced Aerospace Engineering Management

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Word Count: 153

Contents

List of Figures

List of Tables

Definitions

P(A)	Probability of a general event A occurring.	**N**	Total number of equally likely possible outcomes in the sample space.
n	Number of favorable outcomes (ways in which event A occurs)		

1. Lecture 1

1.1. Probability Fundamentals, Rules and Notation

The most basic definition of the probability for a general event A occurring **is the ratio of the number of favorable outcomes n to the total number of equally likely possible outcomes N**, this is shown in a mathematical representation in **Eq. 1**.

$$P(A) = \frac{n}{N} \tag{1}$$

Where:
- $\boldsymbol{P(A)}$: The probability of outcome A.
- $\boldsymbol{N}$: Total number of equally likely possible outcomes in the sample space.
- $\boldsymbol{n}$: Number of favorable outcomes (ways in which event A occurs)

Note that **Eq. 1** is only for events of equal probability, for example rolling a dice. Instead if **N is the number of experiments** then **Eq. 2** applies, implying that the larger the number of experiments the closer to **Eq. 1** the probability becomes.

$$P(A) = \lim_{N \to \infty} \left(\frac{n}{N} \right) \tag{2}$$