

REVIEW AND GENERALIZATION OF THE CONCEPTS
OF INFINITE SERIES WITH RELATED
TERMINOLOGIES FROM T.M. APOSTOL'S BOOK
MATHEMATICAL ANALYSIS

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Dedicated to Prof. A.K. Agarwal on his 70th Birth Anniversary

Abstract: The objective of this paper is to explore the general concept of infinite series and definition of few terminologies on the basis of the book Mathematical Analysis written by T. M. Apostol in 1974. Generally, the ordered set of numbers followed by any fixed rule is called a sequence and the combination of terms of sequences by using addition or subtraction sign with a fixed rule is called a series. In precise sense, a sequence defined by the function $f : \mathbb{N} \rightarrow \mathbb{R}$ and is denoted by $\{f(x)\}$ or $\{a_n\}$. The values of a_1, a_2, \dots are called the terms of the sequence $\{a_n\}$.

Keyword and Phrases: Series, Limit superior, Limit inferior, Convergent, Divergent.

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1. Introduction

The book entitled Mathematical Analysis (2nd Ed) was written by T. M. Apostol in 1974 is a very popular book. It is very lucid book in the field of mathematical analysis with regarding language and arrangement of matter. This book is used as the text book in different universities for bachelors degree and masters degree. Here, we are trying to expressed our experiences from students life to as a teacher because of it continuous handling for teaching learning activities in Tribhuvan University. Here, we are tried to simplify the proof and clarify the terminologies used in eighth chapter series and product.

Now, we start from a very basic term sequence. Generally, the ordered set of numbers followed any fixed rule is called a sequence and the combination of terms of