

THE HISTORICAL SEQUENCES OF THE DEVELOPMENT OF MATHEMATICAL SCIENCES, 4000 B.C. - 501 A.D.

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ABSTRACT

Although it is very difficult to describe mathematical developments starting from the Egyptian and Babylonian civilizations through the first quarter of the nineteenth century. In this paper the historical sequences of the development of mathematics in the chronological order from 4000 B.C. to 501 A.D. has been described.

INTRODUCTION

In ancient times mathematics was considered as "the science of numbers, form and magnitude". Bertrand Russell formulated the definition "Pure Mathematics is the class of all propositions of the form $p \text{ implies } q$ ", where p and q are propositions containing one or more variables, the same in the two propositions and neither p nor q contains a constant except logical constants" in the opening of his "Principles of Mathematics" published in 1903. It is clear from these two definitions that mathematics had undergone radical changes and it has become a part of logic.

The most prominent amongst the Logicians was E. Russell who made an attempt to give pure logical base to mathematics and was of the opinion that mathematics is a branch of logic. of classical type is assumed as "a priori" in mathematics and it plays an important role in the proofs of the theorems but the axiomatic development of mathematics depends upon symbolic logic. With this thinking De Morgan, Boole, Schroder and Pierce elaborated the algebra of symbolic Logic, a propositional calculus and a calculus of logical reasonings. Peano school considered symbolic logic as the batsman of mathematics while Frege Russell's was of the opinion that logic is progenitor of Mathematics.

The history of mathematics is almost as old as the history of man-kind. The difficulty in writing the history of the subject is the paucity of source material in its early stages of development. No record is available prior to the ancient Egyptian and Mesopotamian civilizations. The information available about Egyptian Mathematics from 4000 B.C is derived from two mathematical papyri, one is known as Ahmes Papyrus