* ## Scope of Mathematics in Economics :-

Mathematics is used in economics in the following three forms :-

(1) Economic Theory -
   Logic of numbers is the mathematics. Theoritical Economics or Non-mathematical Economics uses it to express its findings in precise form.

- Concise by changing the forms of economic principles.
- To eliminate the complexity of concepts.

$$Dx = f (P_x \text{ Ceteris Paribus})$$

where, D_1 = Quantity demanded of x Product
   P = its price
   f = function

' Ceteris Paribus' = for the phrase if other things remain equal.

(2) Mathematical Economics -
   A new branch of Economics has started with the use of mathematics, which is called Mathematical Economics. Use of mathematics create three main qualities in economics :

(a) Exactness of the entire economic analysis.
(b) clarity of the language of analysis.

(c) Precision

(d) Possibility of generalization of the analysis relative to n-variables.

(3) Econometrics -

It was born in 1926 as a distinct branch of study. 'Econometrics' was first used in 1926 by the Norwegian economist Professor Regner frisch. ECONOMETRICS originated form BIOMETRICS, a branch related to biology.

The combination of economic theory, statistics and mathematics is called econometrics. Relationships can be displayed in the following form :-

ECONOMETRICS = Economics + Mathematics + Statistics

$$= \text{Theoretical Economics} + \text{Mathematical Statistics}$$

$$= \text{Statistical Economics} + \text{Mathematics}$$

$$= \text{Mathematical Economics} + \text{Statistics}$$