



Knowledge for everyone



**Vista Foundation - Centre For Advanced Study
In Association With Jain University, Bengaluru**

Presents

The History of Mathematics Lecture Series

Inaugural Lecture

Speaker

**Prof. Ravi Kulkarni,
Bhaskaracharya Prathistana, Pune**

Title

A Mathematician's view of symmetry



ABSTRACT:

In this lecture I shall try to give a semi-historical, semi-philosophical, view of how the idea of symmetry has developed in mathematics. It also touches the core issue: is mathematics "invented" or "discovered"?

At the beginning, I shall discuss a possible provisional definition of mathematics: "Mathematics is a thought-process created by the human mind using the conceptions of "space" and "number". In the 20th and 21st century, it is expressed in the language of set theory. In this language, symmetry is now expressed in terms of "groups" and their "actions".

I shall explain how and why the initial emphasis on "transformation groups" was gradually replaced by separating the notions of "groups" and their "actions".

Finite groups of Euclidean plane isometries appeared already in the medieval times. But its "theory" appeared in Galois' work, who coined the terminology of "conjugacy" and "normal subgroups". The fundamental distinction between "solvable" groups and "simple" groups, appeared in this work. This led to the basic problem of classification of simple groups.

The classification of simple, connected, Lie groups, is a major achievement of the last part of the 19th century mathematics. This was followed by the classification of finite simple groups, which is arguably a "theorem of the 20th century".

Lastly, I shall try to pinpoint the role of "discontinuous" groups, and Lie groups, in unifying large parts of mathematics, and indeed all science!

Venue

**Conference Hall
School of Graduate Studies
Jain University, J C Road Campus, Bengaluru-27**

Date

29-07-2016

All are Cordially Invited

Vista Foundation Registered office
493, 7th main,
Hanumanthnagar stage I,
Bengaluru

Belgaum Office
63/4, "YAMUNA" 8th cross,
Bhagyanagar, Belgaum -
590006

www.vistafoundation.in

www.msi.bgm.org