

Webinar by Prof. Geetha Venkataraman (Ambedkar University, Delhi) on 22 August 2020

by Manjil Saikia - Tuesday, August 18, 2020

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Gonit Sora is organizing a webinar on group theory to be delivered by Prof. Geetha Venkataraman of Ambedkar University, Delhi. The details are given below.

Date: **22 August 2020 (Saturday)**

Time: **2.30 pm IST**

Title: **Entwined: Symmetry and Groups**

Abstract: The word 'symmetry' is one that most of us are familiar with. It usually evokes a response that symmetry means regularity or even that when two halves of an object look exactly the same then we call the object symmetrical and so on. If an audience is provided with a pair of pictures and asked to find out which is more symmetrical, they will invariably hit upon the right answer even though they may have no formal concept of what symmetry is. In some sense, we are wired to identify symmetry.

In this lecture we will begin with an intuitive idea of symmetry and see how groups can be seen as a measure of symmetry. The focus will mainly be on symmetries of 2-dimensional objects. This will lead naturally to dihedral and cyclic groups. We will concentrate on planar symmetries and show through a sketch proof that a finite subgroup consisting only of planar symmetries has to be either dihedral or cyclic.

Another angle related to symmetry will be in considering Galois's work on symmetries of roots of polynomials which lead us to how groups originated.

Towards the end of the lecture we will consider research questions related to determination, classification and enumeration of finite groups. While the lectures will be self-contained, a basic knowledge of groups is desirable.

About the speaker: *Prof. Geetha Venkataraman is at present Dean of Research and Consultancy as well as Professor in the School of Liberal Studies at Dr. B. R. Ambedkar University Delhi. She did her BSc (Hons) in Mathematics at St. Stephen's College, University of Delhi with first rank. She then did a M.A. in mathematics from the University of Oxford, from where she also got her doctoral degree, DPhil in 1993.*

Before joining Ambedkar University, Prof. Venkataraman taught for a long time at St. Stephen's College, University of Delhi. Her research interests are in various aspects of finite group theory. Apart from her interest in Group Theory and related areas she is deeply interested in popularising mathematics, mathematics education and issues related to women in mathematics.

She has served on various national and international boards related to mathematics education and research, as well as on editorial boards of journals devoted to mathematics. She has published several important books and papers, out of which we mention one: Enumeration of Finite Groups, Cambridge Tracts in Mathematics, 173, Cambridge University Press, UK, 2007. (Co-authored with Simon Blackburn and Peter M Neumann).

The talk will be suitable for a general audience (high school and college students are specially welcome), and will be held online via Zoom. It will also be livestreamed on our [Facebook page](#).

e-Certificates will be issued to registered participants who attend the talk on Zoom.

If you have already registered for any webinar by Gonit Sora in the past, you need not register again, you are already in our mailing lists (unless you have told us to remove you). For those who have not registered before, you need to register at the link below.

Please read the rules of the Zoom meeting [at this link](#), before you register. Due to a high volume of registration and emails, we will not answer queries which are already addressed in the [rules](#).

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