Raising A Mathematician Foundation®

2025 roots NATIONAL ONLINE MATH CONTEST

# 2025 REPORT

# ROOTS NATIONAL ONLINE MATH CONTEST & ROOTS CAMP

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roots 2025 NATIONAL ONLINE MATH CONTEST

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# ABOUT US

## Organizers

'ROOTS Math Contest 2025' was conducted by Raising A Mathematician Foundation along with Pravaha Foundation as the sponsor.

### Raising A Mathematician Foundation

RAM is a not-for-profit organization dedicated to promoting mathematics education across India. Through initiatives such as its flagship residential Raising A Mathematician Training Program (RAM TP), annual camps including Maths.Biz, Roots Camp, Epsilon India and All Girls Math Nurture Camp (AG MNC), as well as workshops on applied mathematics, RAM strives to make mathematics engaging for gifted students and the wider community. It also offers year-round Math and Informatics Olympiad training and conducts Maths Circles across cities like Mumbai, Chennai, Nagpur, Delhi, and Nashik, including India's first Maths Circle for non-English medium students conducted in Mumbai.

# Objective

To identify and measure the inherent strategic thinking and high-level problem-solving potential of students in grades 5-8 through intensive mathematical challenges. The objective was to assess their capacity for logical reasoning and decision-making under complex conditions.

This year, ROOTS was not just for students, it was for Teachers as well. A teacher who loves problem-solving and wanted to be part of this intellectual journey, joined ROOTS Teachers Contest 2025.

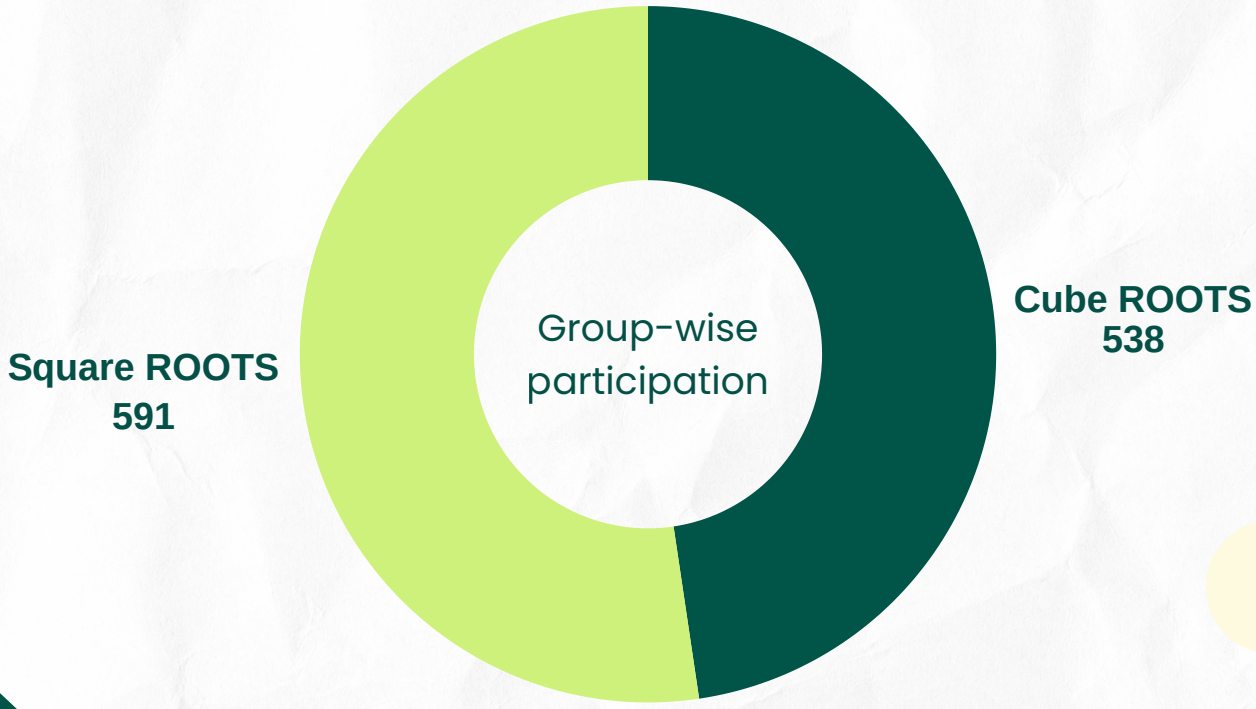
**1129**

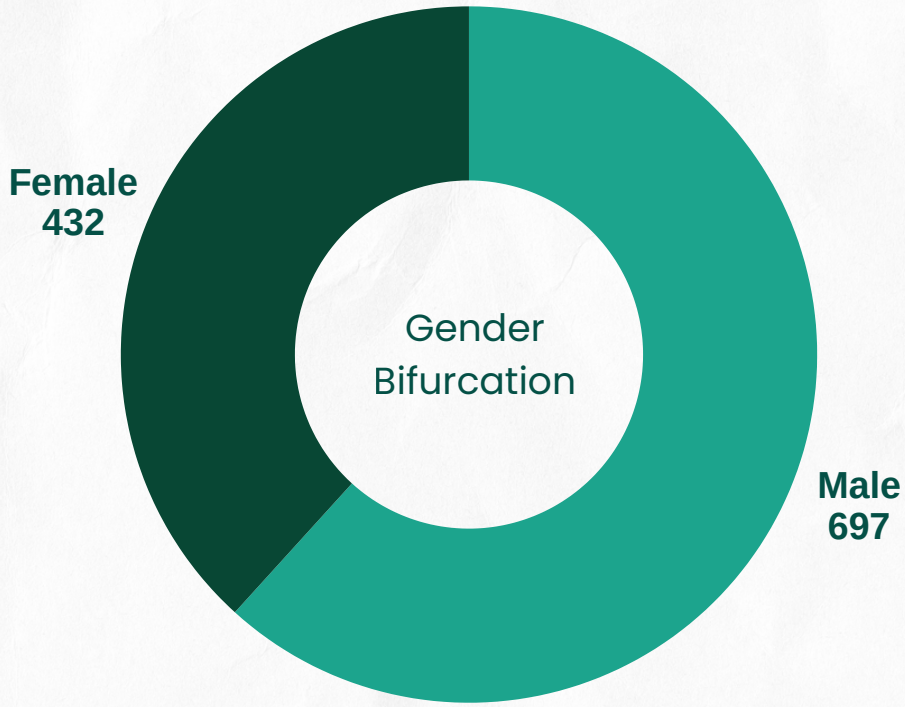
students across the country applied for the online contest.

The contest generated encouraging interest among teachers nationwide.

# KEY HIGHLIGHTS

Square ROOTS - Grade 7 & 8
Cube ROOTS - Grade 5 & 6



# Rewards and Recognitions

## For Students

- Merit certificates were given to the top three positions.
- Participation Certificates were awarded to all the participants.
- 4 day online camp for top 100 students.
- All contest participants were provided FREE access to learning material.
- Scholarship of up to INR 10,000 was awarded to first 5 students from ROOTS Camp who enrolled for Epsilon India 2026

## For Teachers

- Merit certificates were given to the top 10 positions.
- Participation Certificates were awarded to all the participants.
- Webinars for top 100 participants.
- All contest participants were provided FREE access to learning material.

# TOP 3 STUDENTS from each group

## CUBE ROOTS

| Student Name | School Name | Rank |
|---|---|---|
| Shraddha Venkateswaran | Vidya Mandir | 1 |
| Ishaan Mehta | GD Somani | 1 |
| Ayaan M. | DAV Boys Gopalapuram | 1 |

## SQUARE ROOTS

| Student Name | School Name | Rank |
|---|---|---|
| Ashwath Arunachalam | PSBB | 1 |
| Aditya Kumar | Srijan home school | 2 |
| Sruthikka Lakshmi | DAV Sr. Sec. School, Girls Mogappair | 3 |
| Ayushi Kumari | Srijan home school | 3 |

# Selection and Scholarships

The top 50 students from both the groups, i.e. Cube ROOTS and Square ROOTS, were selected to take part in a 4-day Online Camp held from Oct 30 to Nov 2, 2025. During this camp, they were introduced to various facets of mathematics and had the chance to engage with accomplished mentors in the field of mathematics.

Scholarship of up to INR 10,000, was awarded to the first 5 students from ROOTS Camp, who enrolled for Epsilon India 2026

# Contest Structure and Topics

ROOTS Online National Math Contest was held from October 3, 2025 to October 5, 2025

| Groups | Duration | Questions Attempted |
|---|---|---|
| Cube ROOTS | 1.5 Hours | 20 |
| Square ROOTS | 2 Hours | 30 |
| Teachers | 2 Hours | 30 |

Further, following topics were covered in the camp conducted for selected students:

**Cube ROOTS Batch Topics:**

- Fun with Cryptography
- Introduction to Graph Theory
- An introduction to microeconomics (Price selection of firms, Price discrimination)
- Games on a chessboard
- 8-queens problem
- What Stays the Same: Discovering Invariants in Mathematics

**Square ROOTS Batch Topics:**

- Fair Division
- Games of chance
- n-queens problem
- The mystery of "why"
- How do I count?
- Counting with Addition Principle

# Speakers line up

## VARDHAN KUMAR RAY

Vardhan kumar Ray is pursuing MSc in Computer Science at Chennai Mathematical Institute, with interests in Algorithmic Game Theory and Complexity Theory. He led sessions on algorithmic thinking, specifically on "Fair Division" and "Fun with Cryptography."

## KAVITA SUTAR

Kavita Sutar is a mathematician and consultant in Scientific Computing and Computer Vision, holding a Ph.D. from Northeastern University and has been a faculty member at Chennai Mathematical Institute. Her session covered an "Introduction to Graph Theory".

## SRUTHI SUBRAMANIAN

Sruthi Subramanian is an undergraduate student in Mathematics and Scientific Computing at IIT Kanpur, who gained a taste for higher math at RAM TP camp. She conducted a session on "An introduction to microeconomics," covering pricing decisions and price discrimination.

# Speakers line up

## ANIRUDDHAN GANESARAMAN

Aniruddhan Ganesaraman is a second-year PhD student in Statistics and Operations Research at UNC Chapel Hill, whose research focuses on stochastic modelling and causal inference. He led the session "The mystery of 'why'," demonstrating how to verify claims using real-world examples.

## DR. S. MURALIDHARAN

Dr. S. Muralidharan holds a Ph.D. from TIFR, is a prolific author of 4 books on Mathematics (including Combinatorics), and was the Chief Examination Coordinator for IOQM. He led a session on "Counting with Addition Principle."

## KRISHNA MENON

Krishna Menon is a Postdoctoral Researcher at KTH, Sweden, with a PhD from Chennai Mathematical Institute, has primary interest in combinatorics. He guided students through the classical types of mathematical counting problems in his session, "How do I count?"

# Speakers line up

## DR. ASHWIN GUHA

Dr. Ashwin Guha is a freelance Maths Educator and Children's Writer, holding a PhD in Computer Science from IISc Bengaluru and authoring the award-winning book 'The Homework'. He taught sessions on probability ("Games of chance") and discrete games ("Games on a chessboard").

## JAYASREE S.

Jayasree S. is the Educational Outreach Officer at IIT Palakkad, with a PhD in Mathematics Education and a sustained interest in how learners engage with mathematical ideas. She led the session "What Stays the Same: Discovering Invariants in Mathematics."

## HURUDAYA N.

Hurudaya N. is a bachelors student at Krea University, exploring the intersection of Math and Computer Science, including graph theory and logic, following a dual degree at Chennai Mathematical Institute. He introduced game theory to students through sessions focusing on the "n-queens problem" and the "8-queens problem."

# SUPPORTERS

of ROOTS National Online Math Contest and ROOTS Camp 2025

## Sponsor

PRAVAHA

Pravaha Foundation is a non-profit organization that aims to bring together multiple stakeholders to tackle development issues at scale. Pravaha's major focus is towards long term issues which includes poverty and inequality, education, social innovation among children and young people. Pravaha's flagship program aims to advance high-ability and talent-related learning in India alongside leading education, social development, and policy and research partners

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