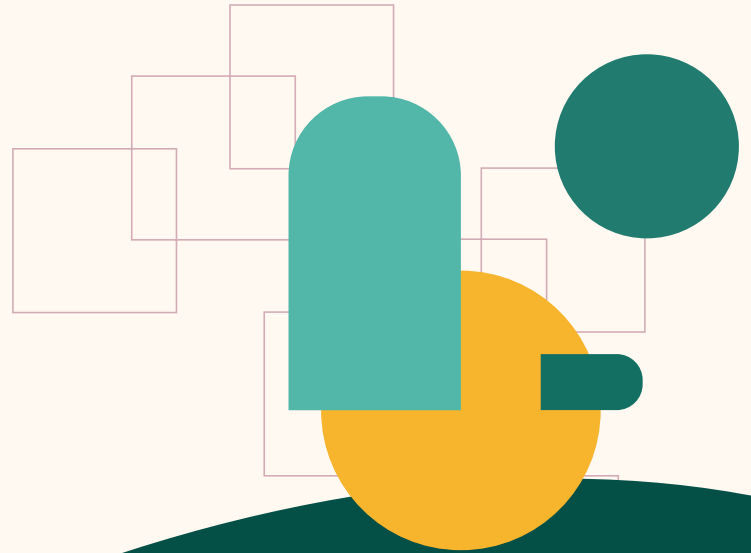
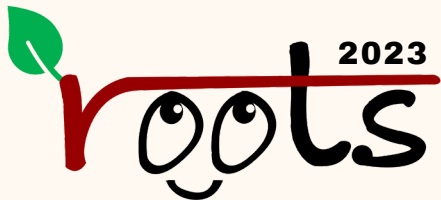


# ROOTS NATIONAL ONLINE MATH CONTEST & ROOTS CAMP



# 2023 REPORT

ROOTS National Online Math Contest 2023 – October 1st, 2023

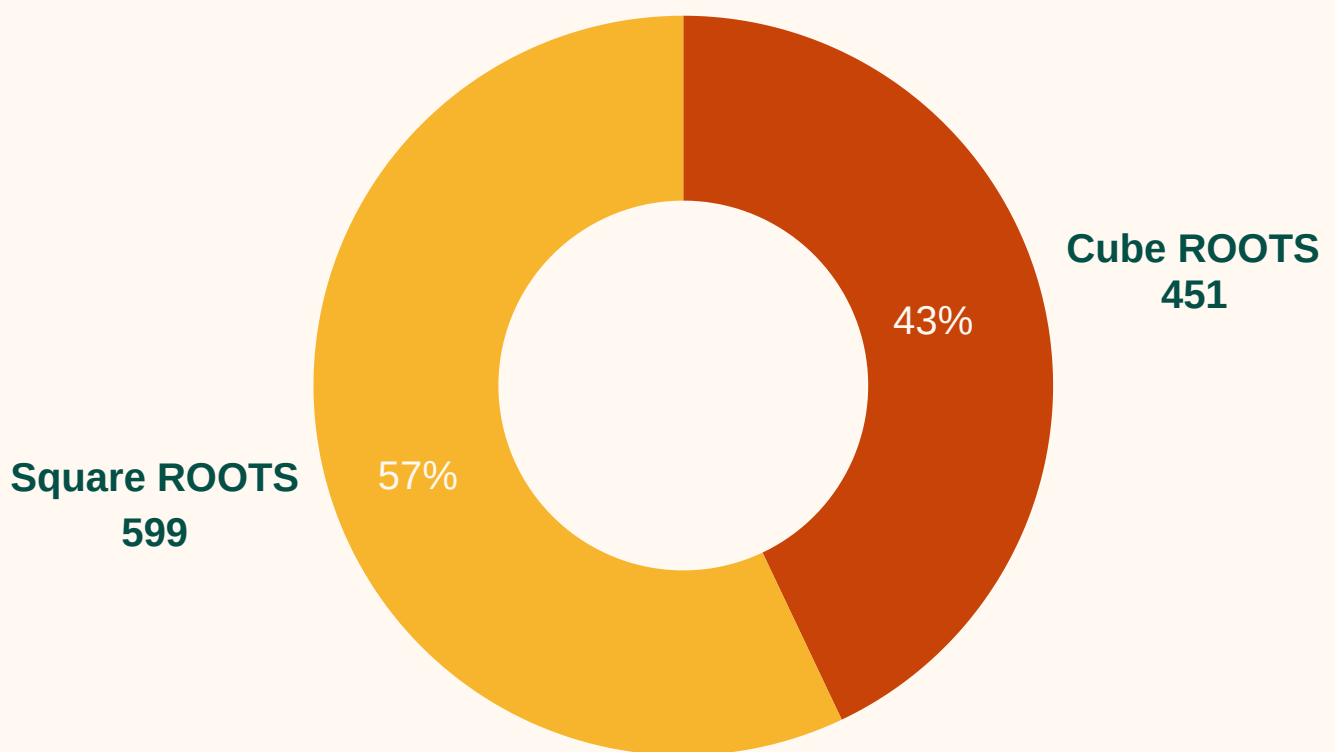
ROOTS Camp 2023 – 16th to 19th November 2023 (Online)

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# KEY HIGHLIGHTS

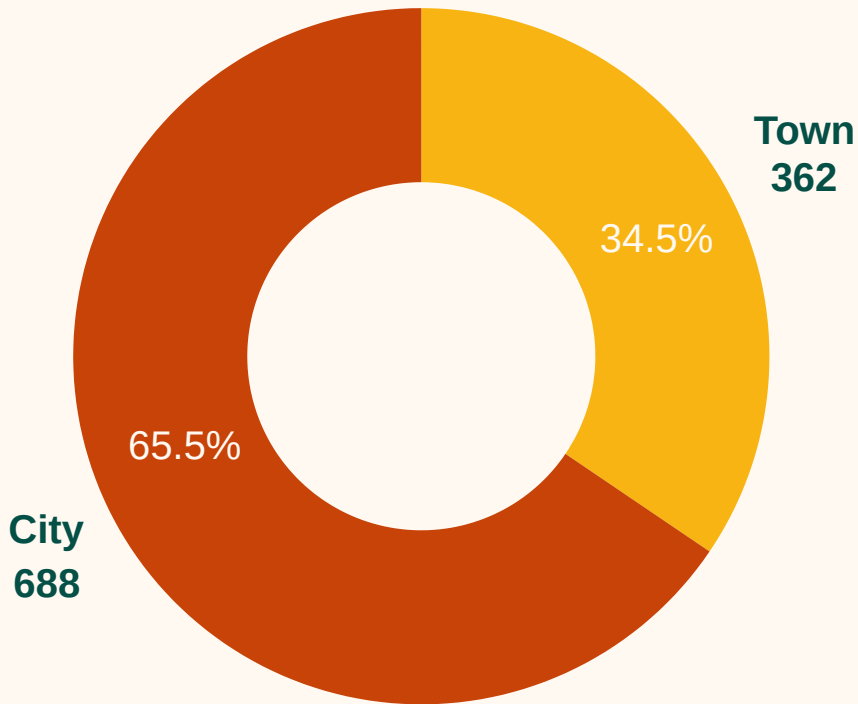
of ROOTS National Online Contest and ROOTS 2023 Camp



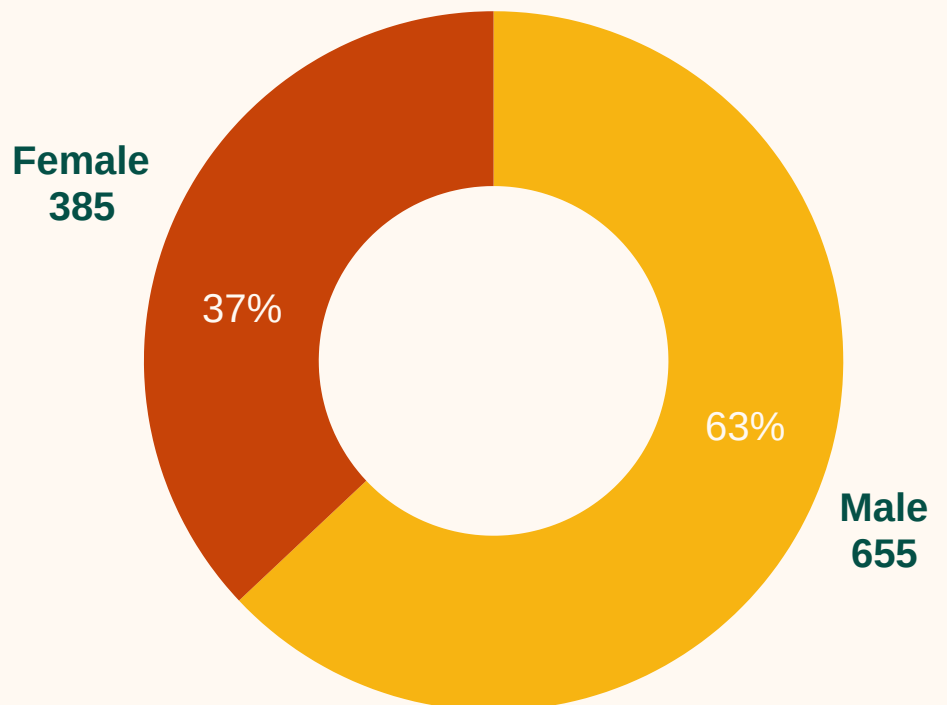
## Group-wise participation

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

## Town Vs City



## Gender Bifurcation

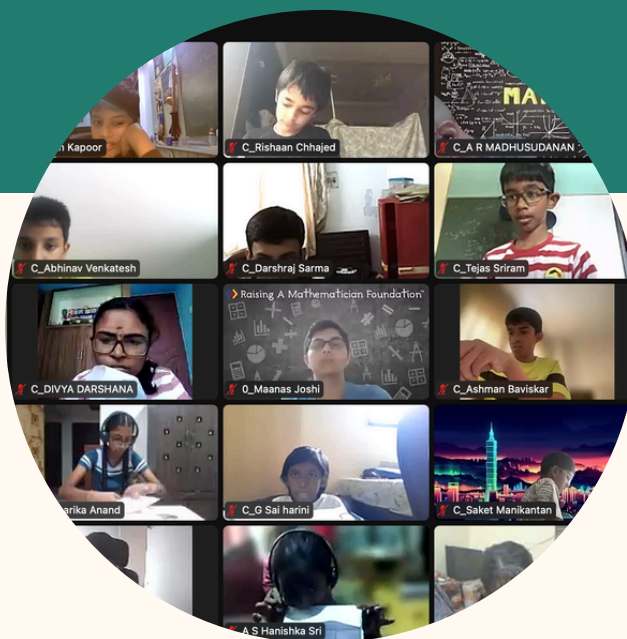


# OBJECTIVE

## of ROOTS National Online Math Contest 2023

### Objective of ROOTS National Online Math Contest 2023

To assess the strategic thinking and problem-solving skills that students in grades 5 to 8 possess, required when facing mathematical challenges that involve logic and reasoning.



### ROOTS National Online Math Contest 2023 Student Participation Details

1390 students across the country participated in the online contest.



- Medals and merit certificates for the top three positions in each category.



- Camp Completion certificates were awarded to the participants who got selected for the camp and successfully completed it.

## REWARDS AND RECOGNITION



- Participation Certificates were awarded to all the students who participated in the contest.

# TOP 10 STUDENTS

from each group

## CUBE ROOTS

Student Name	School Name	City/Town Name	Rank
Saketaram Manikantan	Dhirubhai Ambani International School	Mumbai	1
Shouryadip Chanda	Aditya Academy Secondary School Barasat	Barasat	1
Anvee Kulkarni	Dr. Kalmadi Shamarao High School	Pune	1
Bishnupriya Parua	Narayana	Rourkela	1
Jeevan Vijay	D A V Pallikaranai	Chennai	
Dhivyesh balaji	P S Senior Secondary School	chennai	
A.Ku.Maulishwar	Pushpalata Vidya Mandir	Tirunelveli	
Aarushi Shirude	Ashoka Universal School	Nashik	
Darshraj Sarma	Christ Church School	Mumbai	
Shivansh Jaju	Podar International School	Yavatmal	
Bhumanyu Bora	Delhi Public School, Duliajan	Duliajan	

# SQUARE ROOTS

Student Name	School Name	City/Town Name	Rank
Tejas S V	Narayana Olympiad Gopalapuram	Chennai	1
Anish Gupta	Atomic Energy Central School -4	Mumbai	2
Adwita Kumar	Ghana International School	Accra	3
Aarav Anil Rao	Oakridge International School	Mohali	3
Aaryan Shukla	Delhi Public School,Nashik	Nashik	
Aaryan Kishor Pawar	Jnana Prabodhini Prashala	Pune	
Sai Arun Prasaad Sundar	Budding Minds International School	Chennai	
Nihaar Deshmukh	Symbiosis School, Nashik	Nashik	
Vijay Venkatesh	P.S.Senior Secondary School	Chennai	
Darshini Chakravarty	Crimson Anisha Global School	Pune	





# 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 November 16 to 19, 2023. During this camp, they were introduced to various facets of mathematics and had the chance to engage with accomplished mentors in the field.

10 selected students from the camp were given a merit scholarship worth INR 10,000 for highly sought-after Math programs - Math Olympiad Training Programs (MOTP) and Epsilon India.

# CONTEST STRUCTURE AND TOPICS

Online Math Contest and ROOTS Camp 2023

**ROOTS Online National Math Contest was held on October 1st, 2023.**

**The Contest was divided into two groups:**

- Cube ROOTS group: 5th & 6th grade
- Square ROOTS group: 7th & 8th grade

The Cube ROOTS group was allotted a time span of 1.5 hours to attempt 20 questions, while the Square ROOTS group had a 2-hour time frame to complete 30 questions.

**Topics covered in the ROOTS 2023 Camp:**

The various topics covered during the camp were Catalan Numbers, Complexity Theory, Game Theory, Nash Equilibrium, Puzzles in Mathigon and Polypad, Origami Puzzles, Probability, Visual Learning, Partitions, Origami Card Tricks, Algorithmic Wonders, Sierpinski Gasket Graph and Popular Matching.

# SPEAKERS LINE UP

Eminent Faculty



## RUSHIL MATHUR

Director at Sophie Fellowship, discussed Complexity Theory, delving into P vs NP, Cryptography, and Zero-knowledge proofs, and enlightening students about the core of encryption algorithms.

## NEHA GARG

a curriculum designer at Centre for Creative Learning at IIT Gandhinagar, led a vibrant and interactive session, sparking critical thinking through hands-on activities and puzzles.



## DAVID PORAS

Senior Director of Product for the Polypad Studio at Amplify visually elucidated probability concepts, engaging students with hands-on puzzles using the free online math tool 'Polypad'.

## ASHWIN GUHA

Math educator and author, beautifully merged Math and origami. He engaged students with thought-provoking questions, sparking a healthy discussion on problem-solving.



# SPEAKERS LINE UP

Eminent Faculty



## SHIVKUMAR

Math educator at Seed2Sapling Education began with an amazing card trick challenge, prompting students to brainstorm solutions, transitioning to the generalized Josephus problem.



## PRAJAKTA NIMBHORKAR

Associate Professor at Chennai Mathematical Institute, led a session on Popular Matching, engaging students in practical problem-solving.



## KAUSTUBH LIMAYE

Faculty at SVKM's NMIMS, initiated the session with a nostalgic game - the cup and string telephone. He beautifully related this to the vast field of error detection, identifying flaws and error probabilities.



## ANIRUDDHAN GANESARAMAN

A final-year Master of Statistics (M.Stat.) student at the Indian Statistical Institute, initiated the session with probability and betting, the fairness of coin tosses, and intriguing questions like whether a random walk always leads back to the place where you started, and so on.

# SPEAKERS LINE UP

RAM Alumni



## SUNDARRAMAN MADHUSUDANAN

A Mathematics and Computer Science graduate from Chennai Mathematical Institute, introduced Catalan Numbers, exploring its applications in various mathematical domains.



## ASHWAT JAIN

He is pursuing MPhys degree at the University of Oxford. He engaged students with rationality, Nash equilibrium, and relatable clips from movies.



## ANUSHKA TONAPI

A 9th grade student at Sri Kumaran Children's Home, took a deep dive into the Sierpinski Gasket Graph, introducing students to graph theory, fractals like the Mandelbrot set, and delving deeper into proving whether the Sierpinski Gasket Graph is Eulerian or Hamiltonian using Lemmas.

# SPEAKERS LINE UP

## Faculty



### S. MURALIDHARAN

Former Chief Examination Coordinator for IOQM and Retd Computer Scientist from TCS, delved into the world of Partitions, starting with counting problems and gradually exploring deeper concepts.



### VINAY NAIR

Co-founder of Raising A Mathematician Foundation, introduced algorithmic thinking through an interactive session. Using a graph with houses as vertices and paths as edges, he initiated a task to find the shortest path such that all houses were connected.

Throughout the year, RAM actively interacts with students, guiding them to delve into mathematics beyond the confines of the school curriculum and facilitating their entry into the realm of STEM education. Aligned with its mission to discover students with a passion for mathematics, foster a sense of community, and offer enhanced learning opportunities in mathematics and related fields, RAM Foundation sees contests and programs as invaluable platforms. These events provide an outstanding chance for students to immerse themselves in non-routine problems, thereby accelerating their learning curve.

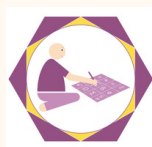
# SUPPORTERS

of ROOTS National Online Math Contest and ROOTS Camp 2023

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