

# Affine - The Mathematics Association

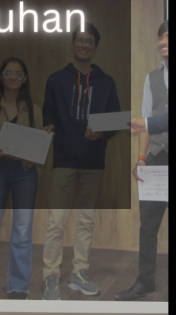
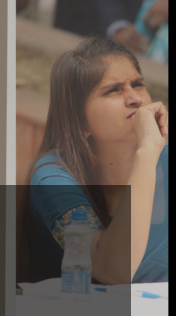
11th Edition Daulat Ram College Year 2024

# MATHPUNCH

ANNUAL MAGAZINE OF DEPARTMENT OF MATHEMATICS

Convenor : Dr. Shelly Verma

Co-Convenor : Dr. Astha Chauhan



# EDITORIAL NOTE

Welcome to the latest edition of MathPunch, the Annual Magazine of the Mathematics Department. As we delve into this year's publication, we invite you to embark on a journey involving the captivating world of numbers, equations, and the boundless wonders of Mathematics.

Within these pages, you will find a celebration of academic achievements, innovative research, and the vibrant spirit of our mathematical community. From highlighting the remarkable accomplishments of our students in various competitions and fests to showcasing the groundbreaking work of our faculty members, MathPunch serves as a testament to the passion and dedication that define our department.

As editors, it is our privilege to curate a collection of articles, interviews, and features that not only illuminate the diverse facets of Mathematics but also inspire curiosity and discovery. Whether you are a seasoned Mathematician or an aspiring enthusiast, we hope that this magazine sparks your imagination and fosters a deeper appreciation for the beauty of mathematical inquiry.

We extend our heartfelt gratitude to all contributors, writers, designers, and supporters who have made this publication possible. This would not have been possible without the unwavering support of our teachers. Their commitment to excellence and their unwavering dedication to the field of mathematics are reflected in the pages that follow.

As we reflect on the past year and look ahead to the future, let us continue to embrace the challenges and opportunities that Mathematics presents. Together, let us strive to push the boundaries of knowledge, unlock new insights, and shape a world where the power of Mathematics knows no bounds.

Thank you for joining us on this journey. We hope you enjoy MathPunch and find inspiration within its pages.



KANCHAN BHARTI



AASTHA YADAV



VANSHIKA SOOD



VANSHIKA GUPTA



AASTHA JAIN

# TABLE OF CONTENTS

AFFINE  
THE  
MATHEMATICS  
ASSOCIATION  
DEPARTMENT OF  
DAULAT RAM COLLEGE  
(University of Delhi)  
**MATHP**  
VOLUME IX  
APRIL 2022

01

## INTRODUCTION

Affine - The Mathematics Association	1
Teachers	3
Union	5
Extended Committee	7

## VISITS & SEMINARS

Parliamentary Visit	9
IISF Visit	10
Career Counselling Session with Chem Academy	11
Career Counselling Session with Unacademy	12

02

03

## EVENTS

Mathwizzer	13
Mathshot	14
Teacher's Day	15
Shoonya	16
Alumni Conclave	22

## STUDENTS' CORNER

Student's Sanctum	23
Achievements	26
Teacher's Note	28
Alumni Corner	32

04



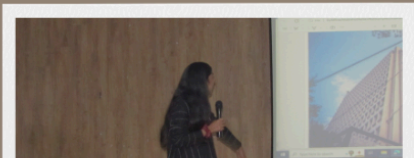
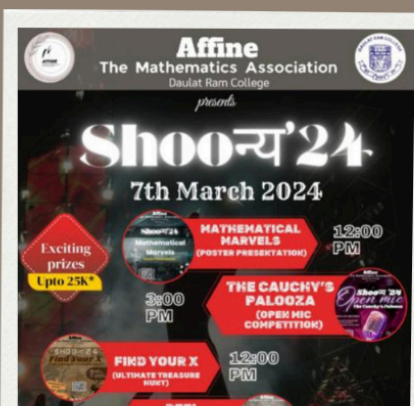
**RUPAKSHI SETH**  
It is an absolute honor to be the editor of our annual newsletter **MATHPUNCH** in a series of articles related to mathematics and its application, motivational articles and noteworthy events of our department.  
Being the editor of **MATHPUNCH** is really helped me a lot to gain skills and new experiences that I obviously had not picked up at school. It helped me in increasing my personal horizons and retaining capacity. This newsletter taught me about hard work a commitment, being flexible and balancing.  
I have no doubts in saying that my journey as an editor has been an ever-rewarding. To work for this newsletter was not a responsibility that definitely a pleasure.

# Introducing

# AFFINE

Mathematics, often perceived as a realm of numbers and formulas, is much more. It is a language, a logic, and a creative art form that permeates every facet of our world. From the intricate calculations that govern the universe to the algorithms that drive modern technology, Mathematics provides the foundation for scientific discovery, technological advancement, and problem-solving across disciplines.

Affine - The Mathematics Association, strives to bring out the best in the students of the department by providing them with various opportunities and endeavours to provide exposure through various quizzes, competitions, career counselling seminars, mathematical workshops and everything beyond that. MathPunch, the annual magazine published by the Department of Mathematics, Daulat Ram College serves as a platform for our department to celebrate the enduring power and beauty of Mathematics. While the first edition was launched in the year 2014 in the benevolent presence of Prof. Shobha Bagai at Shoonya'14, we have carried this legacy with us over the past ten years and yet again, return with the 11th edition of the same. Traditionally, every year, the new edition of the magazine is launched by our respected Principal Prof. Savita Roy, Head of the Department and various other esteemed personalities.



This magazine offers a glimpse into the vibrant world of Mathematics within our department. Within these pages, you will find explorations of cutting-edge research, insightful reflections on various approaches, student contributions that showcase the potential of our department, a diverse collection of first-hand articles from our respected faculty members and a journey through the entire academic year 2023-24.

Whether you are a seasoned Mathematician, a curious student, or simply someone who appreciates the power of logical reasoning, we invite you to embark on this mathematical journey with us. As you delve deeper, we hope you will discover the elegance, the challenge, and the immense satisfaction that Mathematics offers.



# Faculty of Department of Mathematics



## **DR. SEEMA KHURANA**

(TEACHER-IN-CHARGE, 2023-24)

Her expertise truly knows no bounds. The Head of the Department who has left no stone unturned, completely dedicating herself to the department. She has a dazzling personality with a remarkable approach. Her unmatched teachings and methods to handle intricate problems is worth praising.



## **DR. POONAM LAKHOTIA**

She has been a source of admiration for many students. Her deep knowledge of solving intricate problems instills motivation among the students to strive for great goals. This introduction would not do her justice if her roles remain unveiled - a great educator, owning great plethora of knowledge and embracing each subject with her essence, she truly is an inspiration for all.

## **DR. JYOTI SHARMA**

With her extraordinary mathematical prowess, she nurtures the students and inculcates in them, a love for the subject. She owns the love and respect that has been laid upon her over the years. She resembles the figure of a true mentor, an ultimate guide who wants the best for her students. Her motivational thoughts offer an insight and act as a pathway to success. Her truly charming nature has won the hearts of many.



## **DR. VIKAS DHAKA**

A teacher who is always trying his best to help students realise their true potential with his expertise and experience. A constant supporter and a true believer who shows faith in every single student. It is overwhelming to share his applicative ideologies that turn Mathematics into a wondrous combination of innovativeness and practicality.



## DR. UMESH KUMARI

Her passion for the stream is truly infectious. She turns equations into adventures, transforming dry formulas into exciting challenges. She focuses on making things relatable, giving it a fine and understandable approach. We are always carried away by her successful conclusions of all amendments.



## DR. SHELLY VERMA

(CONVENOR, 2023-24)

The one with the fervour of connecting with the students, even beyond the classroom, she has proven to be an excellent mentor, time and again. A wonderful teacher, an excellent guide and someone who puts her entire heart and soul into the department, no words would ever prove enough to describe her perfectly.



## DR. ASTHA CHAUHAN

(CO-CONVENOR 2023-24)

Her encouragement empowers us to persevere through challenging problems. She aims at imparting the best to the students and proving time and again that there's always a scope for something better. Her logical and analytical skills often motivate the students to learn and achieve more.



## MR. VIRENDRA KUMAR

Transforming the world of numbers into an engaging adventure, he is one of the kind teachers of the department who has been serving over the years to impart explicit knowledge and guidance. He maintains the aura to guide and motivate students through his experiences thereby providing inspiration to always strive for our goals.



## MS. SAPNA KUMARI MEENA

Perfect to be credited with the title of Miss Walking Encyclopedia. In no time, she has taken to quite a large portion of the students' heart. She has been one of the amazing teachers who have ignited the zeal of new possibilities and the enthusiasm to achieve more.



# Union 2024



## Shikha Kaushik (President)

"Humanity cannot explore uncharted seas unless individuals possess the courage to leave familiar shores behind. Upon assuming this position, a profound sense of responsibility was awakened within me. This journey has been fraught with challenges that compelled me to venture into unknown territories and discover my authentic self. AFFINE transcends mere association; it has become akin to a familial bond that facilitated my personal growth and enabled me to realize my full potential. The three years spent here were truly magical and filled with enchantment. I am deeply grateful for the unwavering love and support extended to me by AFFINE. My gratitude extends to the exceptional mentors, dependable seniors, compassionate batchmates, and enthusiastic juniors—AFFINE owes its success to this collective effort. It has been an honor to be the PRESIDENT of this remarkable family, and I sincerely hope that I have met the expectations set by this esteemed group. I am excited to witness the continued growth of this family under the leadership of our outstanding juniors. Wishing everyone the very best."

## Ayushi Shukla (Vice-President)

With the role of Vice-President, I'm reminded of a timeless truth: "Leadership is not about the title, it's about the impact you make and the lives you touch." I am filled with gratitude for the remarkable experiences I've shared in Affine, from the first day of my term to this moment of transition, every step has been a chapter in a story of growth, learning, and camaraderie. I am immensely grateful for the opportunity to have served alongside such talented and committed individuals. Your unwavering support and collaboration have been the driving force behind our success, and I am profoundly thankful for the trust you've placed in me. I offer my heartfelt best wishes to our juniors. May you embrace the challenges, seize the opportunities, and lead with integrity, passion, and purpose.



## Prerana Ramavat (General Secretary)

As the General Secretary of this union, This year has been a journey of learning, leading, and making a real difference in the lives of our members. It began with understanding the needs and concerns of members, building relationships, and fostering solidarity within the union. Along the way, I've collaborated with other leaders, navigated complex issues, and strived to uphold the rights and interests of workers. My experience in the union has been multifaceted and dynamic. It's involved a combination of administrative duties, strategic planning, and advocacy on behalf of our members.

Strategically, I've worked to identify areas for growth and improvement within the union, I'm thankful for the trust and confidence placed in me by our members, who entrust me with their concerns and rely on me to fight for their well-being. Their support and engagement inspired me to work tirelessly everyday.



## Megha Mathpal (Treasurer)

As the Treasurer, I have had the privilege of immersing myself in the financial management of our society, a responsibility that has been both challenging and rewarding. This experience has equipped me with invaluable skills and knowledge that I will carry with me throughout my life. I am grateful for the opportunity to have served in this role and for the trust placed in me by my peers.

I would also like to take this opportunity to express my appreciation to the dedicated teams of juniors who have worked tirelessly alongside me. Your passion, dedication, and enthusiasm have been the driving force behind our society's success, and I am immensely proud of all that we have accomplished together. Your commitment to excellence has been truly inspiring, and I have no doubt that you will continue to achieve great things in the future.

## Vanshika Sood (Joint Secretary)

Being elected as the Joint Secretary of the department was a proud moment indeed but it also involves a position of significant responsibility. This role had taught me to build strong organizational skills, communication abilities, and the capability to navigate processes effectively resulting to enhance my overall growth and personality .Also, I would like to take a moment to express my heartfelt gratitude for the incredible teamwork and dedication that each union member has demonstrated throughout. Everyone's hard work and commitment towards the team had taught me a new positive lesson everyday, whether it was meeting deadlines, brainstorming creative solutions, or supporting each other through challenges, our collective efforts have been nothing short of outstanding. It's truly inspiring to see everyone come together with such passion and professionalism. At the end i just want to conclude by saying that one should continue to strive for excellence, let's carry forward this momentum and camaraderie. Together, there's no limit to what we can achieve.

Once again, thank you for this invaluable Affine family. I'll always be grateful to everyone who believed in me .



# Extended Committee 2024

## Kanchan Bharti (Social Media & Digital Head)

Within the vibrant tapestry of Affine, our Mathematics association, I've found more than just a platform for digital expression - I've discovered a family of like-minded individuals united by a shared love for Mathematics. Affine isn't just an association; it's a nurturing environment that fosters growth and empowers its members to soar to new heights. As a part of the extended committee, Affine has not only given me wings to explore my potential but has also instilled in me a profound sense of belonging and purpose. Together, we've turned ideas into reality, explored uncharted territories, and pushed the boundaries of what's possible.

As we come to the close of this chapter in the annual magazine, let us carry forward the spirit of exploration, innovation, and community that defines Affine. All the best my Juniors!!!



## Aastha Yadav (Management Head)

In the fast-paced realm of modern business, the role of a management head is not merely about steering the ship, but about navigating through turbulent waters with finesse and foresight. As I reflect on my tenure as a management head, I am filled with overwhelming gratitude for the remarkable individuals who have accompanied me on this journey. To each member of my team, past and present, I extend my deepest thanks for your unwavering dedication, passion and commitment to excellence. At the heart of my leadership philosophy lies the art of communication—a symphony of clarity, empathy, and inspiration. With each word uttered and every message conveyed, I strive to ignite the flames of passion and purpose within my team, charting a course towards shared success. In closing, I wish to express my deepest gratitude to each and every individual who has touched my life during my tenure as a management head. Your contributions, both big and small, have left an indelible mark on our journey together and for that, I am truly thankful.



## Aastha Jain (Creative Head)

Innovation is not a destination but a journey. As the Creative head, I was both an explorer and a guide. Being a part of an extended committee was never easy. Indeed it comes with a lot of challenges and patience. Within union, we share knowledge, skills, experiences, creating an environment of learning opportunities. During my tenure I've experienced the need to adapt to changing circumstances, importance of clear and effective communication and how to face setbacks and obstacles. I want to take a moment to express my gratitude towards the support and advocacy provided by our seniors. This opportunity has truly shaped me in the ways I never imagined, and for that, I'm eternally grateful.



## Ranjana Singh (Social Media & Digital Head)

In the world of events and marketing, sponsorship plays a pivotal role in bridging brands with their target audiences. At the helm of this intricate dance between sponsors and events stands the Sponsorship Head, a key figure responsible for creating, nurturing, and maintaining these invaluable partnerships. Affine has given me so many opportunities to learn and experience to nurture my role as the sponsorship head of the team. It has also helped me grow as an individual and taught me patience and team work. I am deeply sorry grateful to all the members of Affine, who are more like family now, for the memories made this year.



## Vanshika Gupta (Content Head)

Looking back on this year's journey, it has indeed been a rollercoaster. There have been endless opportunities and a whole lot of memories associated with the role. From in-depth explorations of the source of our information to a detailed analysis of all the events that occurred, I have strived to provide a well-rounded experience for our readers. Your engagement has been immensely rewarding. This role has not only allowed me to share my passion for writing but also to learn from the vibrant academic community. Collaborating with faculty and students has been a highlight, offering valuable insights and perspectives that enriched our content.

## Malavika (Sponsorship Head)

In the world of events and marketing, sponsorship plays a pivotal role in bridging brands with their target audiences. At the helm of this intricate dance between sponsors and events stands the Sponsorship Head, a key figure responsible for creating, nurturing, and maintaining these invaluable partnerships. Affine has given me so many opportunities to learn and experience to nurture my role as the sponsorship head of the team. It has also helped me grow as an individual and taught me patience and team work. I am deeply sorry grateful to all the members of Affine, who are more like family now, for the memories made this year.



# Events

# PARLIAMENT VISIT

## A UNIQUE EXPERIENCE

Affine manages to experience yet another unique experience with the visit after the opening of the New Parliament House on 21st September, 2023 organised by the Students' Union. Accompanied by our Teacher-in-Charge, Dr. Seema Khurana, the students passed the security check where their mobile phones and other such devices were collected in order to maintain the decorum of the House.



The structure was majestic as described by the students and they were able to explore the vast campus with proper guidance. The highlight of the visit turned out to be the live parliament session attended by the students. The topic under the hammer was "Women Reservation Bill". Witnessing the debates and discussions of the Members of the House, who are often seen on television, right in front of the eyes felt surreal. Allowing college students to do so was a beneficial decision for them as they get to see and comprehend the working and management of our government in a practical and innovative manner. Enabling them with such an opportunity provided them with a chance to explore the functioning of an important body of our nation. A once in a lifetime juncture, the visit turned out to be an exceedingly informative as well as enjoyable and educational experience for our department.

# Science Fair

## IISF: India International Science Festival 2023

AN INNOVATIVE PLATFORM



A highly informative platform with an out-of-the-world setting emphasizing on the wonders of homegrown science, the festival celebrated the achievements of various scientific institutions around the country and proved to be an authentic and fascinating experience. As the students described, there were presentations and tableaus from all over the country including prestigious organisations like ISRO and DRDO with a completely practical explanation of each of their models. The representation of various fields of science including Mathematics was phenomenal and our faculty members couldn't resist trying out the practical elements themselves. Several features like virtual reality experience, working models and so on were available in the festival.

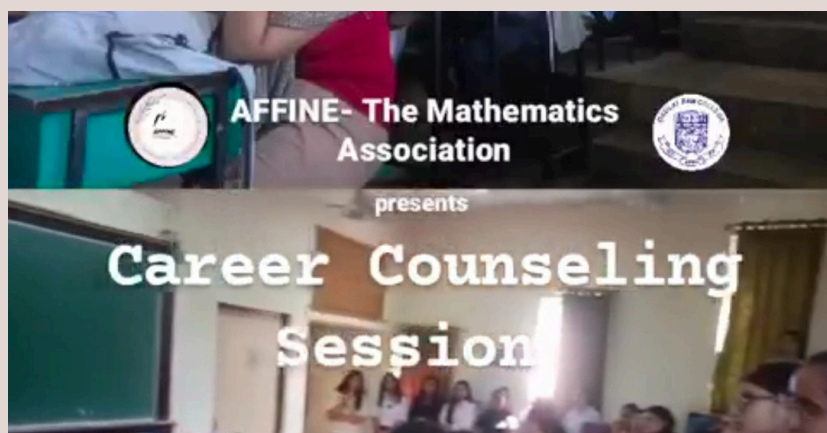


Affine tried to use this opportunity to the best of its power and our students as well as the faculty members witnessed various speakers from around the nation participated in the elaborate projects. Different types of probability models were presented in great detail alongside other science-based presentations, mainly focusing on Physics and Mathematics. This relatively new outlook towards the subject empowered the students to exhibit their curiosity at a more intellectual level. Practical application, of course, provided them with the means to imagine things in 3D- space which was especially helpful for the visual learners. The overall experience turned out to be a highly beneficial one as the students described it as something that was worth the wait. They thoroughly enjoyed exploring the vast multiverse of Science Projects.

# Seminar

## CAREER COUNSELLING SESSION

IN COLLABORATION WITH CHEM ACADEMY



Affine added another feather to its hat with the organisation of a career counselling session, in association with Chem Academy. The aim was to favour the undergraduate students and enlighten them about their future prospects whether they were in their final year or first year.

The speaker for the day, Mr. Pravesh Tomar possessed an enthusiastic attitude and attracted a wide range of audience with his wise words. Students of the Mathematics Department comprised the audience and were extremely inquisitive in nature, putting forth their queries in front of the speaker and therefore, utilising this opportunity to the best of their ability. Mr. Tomar, along with his colleagues, went into a detailed analysis regarding the strategies of various high-level competitive exams like IIT-JAM, GATE, CUET, UPSC and so on.



The audience was on the edge of their seats as the session progressively became even more interactive when the speakers began sharing their real-life experiences and anecdotes. The students could relate to them, as was apparent by the reaction of the audience. This endeavour proved to be a highly successful one as students received critical guidance at such crucial points in their career. With wide appreciation from various faculty members, the session closed on a positive note from our guests, inviting the students for any further guidance and a Vote of Thanks from the President of the association, Shikha Kaushik.

# Seminar

## CAREER COUNSELLING SESSION

IN COLLABORATION WITH UNACADEMY

Undoubtedly, Affine welcomed the new year with a bang. Owing to the approaching entrance exams, especially for the batch of 2023-24, a seminar, in collaboration with Unacademy was organised. The vision included motivating students and providing them with meaningful strategies for the upcoming future. Our Guest Speaker for the session was Tejal Khandelwal (PSIR Optional Faculty/GS IR Faculty/Public Speaker Mentored UPSC and SPSC Toppers Chaired SPSC Interview Mock Session). The commencement took place 11 A.M. onwards while there was a buzzing excitement amongst the audience.



"We the people, We are the future too!!!" The perspective which Ma'am presented in relation to the topic was something completely fresh and out-of-the-box. Starting out with self-belief, she grabbed the undivided attention of her audience. Ma'am mentioned that the person must know about the "Why of Life".



Furthermore, she elaborated on the attitude that one must have while appearing for the civil services exam. One must take it as a chance to establish one's identity. The four pillars of her preparation strategy were-Purpose, Essence of the topic, Dimensions, Concept building. The session came out to be highly fruitful as she provided everyone with her channel in order to clarify any queries and for future guidance.

# Events

# MATHWIZZER

## THE DOCUMENTARY SCREENING AND QUIZ COMPETITION



**Knowledge is power.  
Information is liberating.  
Education is the premise of progress.**

Affine kicked off the year with Mathwizzer- the Documentary Screening and Quiz Competition which primarily aimed to provide a platform for the students from the Department of Mathematics to showcase their knowledge and computational skills. The main focus of the quiz material was on Women Mathematicians and general computations. Female Mathematicians have contributed greatly to the field of Mathematics; they continue to astound the mathematical community.



Over the course of the quiz, our enthusiastic teachers couldn't help themselves and answered the questions for the audience. As we approach the end of the contest, the audience was filled with excitement and wonder. The Rapid Fire Round became the highlight of the competition as the score card changed at a thrilling pace. Ultimately, Team Pi, comprising Anshika and Harshika, stood at the first position with Team Beta, comprising Anshika and Mansi right after. The winners were awarded by our Convenor, Dr. Shelly Verma and Co-Convenor, Dr. Astha Chauhan. The overall event was, for sure, successful, and received praise from the audience. Affine feels grateful for the opportunity and would like to continue with such endeavors in the future.

# Events

# MATHSHOT 2.0

## THE PHOTOGRAPHY COMPETITION

“  
**Success is not permanent and failure is not final. Never stop working after success and never stop trying after failure.**”  
”

Affine's highlight for this competitive season was Mathshot 2.0- The Photography Competition with a twist. Mathematics is connected to important aspects in our lives as it plays a huge role in making everything in our environs. It gives us a way to understand patterns, to quantify relationships and to predict the future. Mathematics helps us understand the world while we use the world to understand Mathematics and there we got the idea of having Mathshot.



Mathshot was the competition where participants showed their understanding of the world through Mathematics. Students across the various undergraduate and postgraduate programs all over the university participated to show off their photography skills whilst connecting each of their entries with its mathematical element.



The event was closed by the Badging Ceremony of the Affine Union where the young leaders took up their positions officially as representatives of the students. The event was widely appreciated all over the campus by the guests and the audience alike.

# Events

# TEACHERS' DAY

A DAY DEDICATED TO OUR CONSTANTS

**"A teacher affects eternity; he can never tell where his influence stops."**

**-Henry B. Adams**

True to this saying and in order to thank our teachers for the ever-lasting impact they have had in our lives, Affine- The Mathematics Association of Daulat Ram College organised an event. The celebrations took place in the Botany Lecture Theatre from 12 noon onwards on 5th of September 2023. We were joined by the entire faculty of the Mathematics department including our Head of Department, Dr. Seema Khurana.

The event began by the students dedicating a standing ovation to each and every one of our mentors. The celebrations were inaugurated with the cake-cutting ceremony and the event was in a full swing with a few rounds of charades. The game was a combination of a wonderful interaction between the students and the faculty members. Bringing back these childhood memories turned out to be a really fun and heart-warming experience.



There was active participation on behalf of everyone. Melodious tunes resonated across the hall as our department dedicated songs on this joyous occasion of Teachers' Day. Towards the end of the fascinating event, Dr. Seema Khurana delivered a heartfelt message from her side while the President of Affine, Shikha Kaushik presented the Vote of Thanks. Affine would like to extend its thanks towards all the members who could join us.

# Presenting

# Shून्य '24

THE ANNUAL MATHEMATICS FEST

"Zero, ontologically, is also infinity. It contains infinite elements that all balance each other out (they sum to zero). Zero and infinity cannot be found separately. Where you get "nothing" you always get "everything too".



Moving on with this spirit, Affine: The Mathematics Association kick-started Shून्य' 24: The Annual Mathematics Fest. With everyone on their toes, anticipating the festivities, began the morning of 7th March 2024.



7  
MAR

Daulat Ram  
College,  
DU

10:00 AM

## Inauguration and seminar

Buzzing with excitement, the students gathered in the Conference Hall for the inauguration ceremony followed by the speaker session with Guest Speaker, Professor Satish Verma, Associate Professor, SGTB Khalsa College. The session, consisting of various practical activities, caused a ripple of enthusiasm amongst the students and teachers alike.

# Presenting

# Shoony '24

## THE ANNUAL MATHEMATICS FEST

Sir was able to explain various components of mathematical modeling, especially, using goal seek and solver in excel. Being an expert in the field, he attracted an enthusiastic audience of around 141 students who took the benefit of this opportunity and clarified all their queries regarding the topic.



### POSTER PRESENTATION

The event that followed was Mathematical Marvels: Poster Presentation. As anticipated, students from all over the campus presented their mind-blowing ideas in an intricate manner. The judges were highly impressed by the level of research that was put into the various projects.

It was a really difficult judgement because of the quality of material presented. 3 winners were crowned out of the seven finalists.

They were as follows:

- 1st position- Vishal Kumar (Deshbandhu College)
- 2nd position- Riya Yadav (Daulat Ram College)
- 3rd position- Talagana Likitha (Daulat Ram College)

# Presenting

# Shoony '24

THE ANNUAL MATHEMATICS FEST

## THE Pictionary Challenge

Adding to the boisterous element of our event, we had the Pictionary Challenge. The mathematical twist to the classic game made it all the more popular amongst the participants. One of the team members had to describe the word given in the form of mathematical symbols while the other needed to draw and guess the designated word. Being an eccentric event, something different from the traditional game, it became the centre of attraction. 2 winning teams were crowned from a total of 20. They were:

1st position- Annu, Rohini Gautam (Daulat Ram College)

2nd position- Anju, Khushboo (Daulat Ram College)



# Presenting

# Shoony '24

THE ANNUAL MATHEMATICS FEST

## TREASURE HUNT



Meanwhile, the Treasure Hunt, Find your X was at its peak. With a number of enthusiastic Mathematicians chasing after a no. of clues, it was our most happening event which covered the entire college campus. Contestants were witnessed competing fervently, with ardour. This event was widely appreciated by students from all over the campus. Out of the fourteen teams that participated, the title-holders are as follows:

1st position- Ankush, Manan, Sumit (Hindu College)

2nd position- Arpita, Seema, Anshita Singh (Daulat Ram College)

3rd position- Shruti & Annu (Daulat Ram College), Pooja (CCS University)



# Presenting

# Shoony '24

THE ANNUAL MATHEMATICS FEST

## OPEN MIC

The zealous participants of Open-Mic, The Cauchy's Palooza became the highlight of the Fest. Talent like it was never seen before shook the stage in the form of poetries, singing, dance and much more. Guest artists, Mr. Arnav Rawal and Mr. Sarthak Oberoi, became the stars of the event. The efforts were highly appreciated by the audience as well as the judges. The audience shook with anticipation as the results were finally revealed. With over 40 entries, the final verdict was as follows:

1st position- Avni Pandey (Daulat Ram College)

2nd position- Riyadh (T-Series Stage Works Academy)

3rd position- KK Khandelwal ( Hansraj College)



# Presenting

# Shoony '24

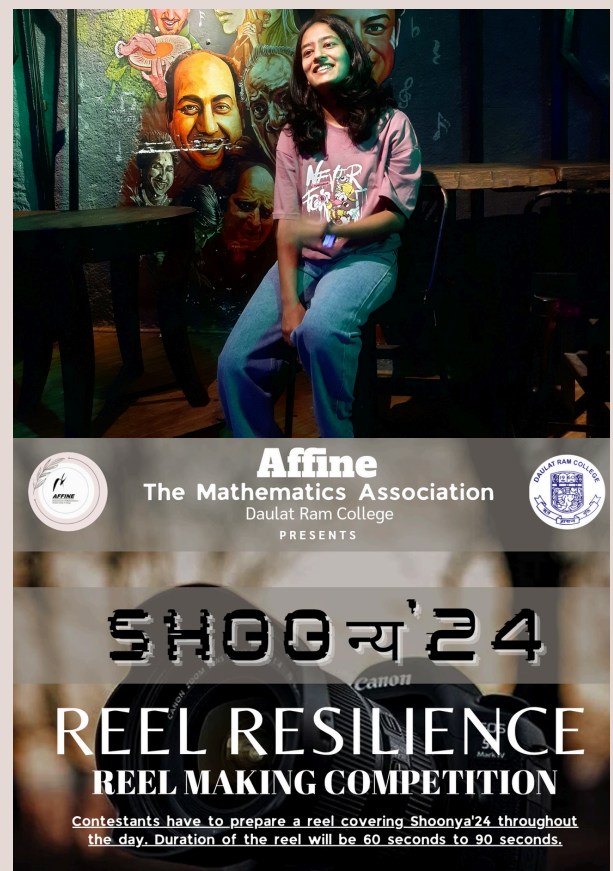
THE ANNUAL MATHEMATICS FEST

## REEL MAKING COMPETITION

Covering the entire event, was our team of photographers as well as the contestants from the reel-making competition held throughout the event. Participants were to prepare a short clip up to a maximum time limit of 1 minute and 30 seconds. Out of 17 teams, the ones who won hearts on our social media handle were:

1st position- Sharad Singh (SGND Khalsa College), Dev Dedha ( Bharatiya Vidya Bhavan)

2nd position- Anu (Daulat Ram College)



The winners for all the segments were awarded with cash prizes by our respected judges. And with that, we wrapped up yet another fantastic Annual Fest. The aim was to provide a platform for the students to come forth with their mathematical skill and prowess and was entirely fulfilled through Shoony.

# Inauguration of Alumni Conclave

BY OUR ALUMNA PRATIBHA

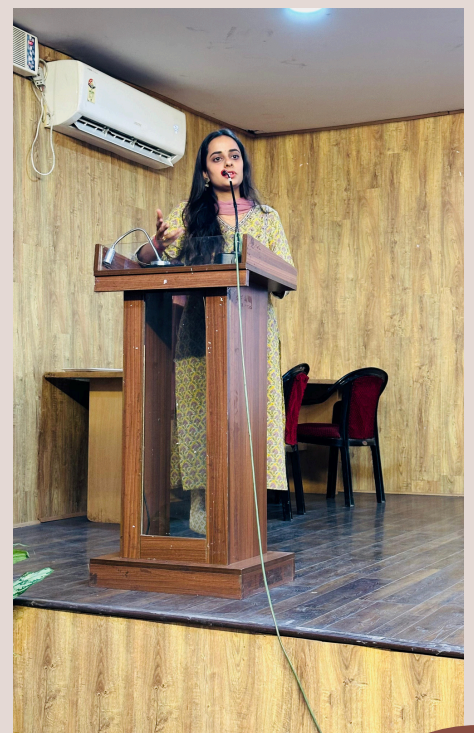
Affine feels proud to present before you, Alumni Conclave, a ladder to a new beginning. Drawing inspiration from someone we have looked upto in our college life is natural and thus, by bringing in our alumni with their achievements to converse with the students is something that we deem as the right path towards the future.



We organised an interactive session with Ms. Pratibha, Our Esteemed Alumna, UPSC CSE'23 AIR 356, Batch (2014-17) on 30th April, 2024.

The session was graced by the presence of our respected Principal, Prof. Savita Roy who, with her wise words highlighted the importance of women Mathematicians referring to Mrs. Shakuntala Devi.

Ms. Pratibha, with her immense experience and expertise in the field, delivered the talk of her success while the students were awe-inspired. Her strategies, alongside her wit and wisdom gave the spectators a newfound inspiration to continue with their aim. Moreover, ma'am answered all the queries with an utmost calm demeanour, trying to walk through all the necessary steps that go with the preparation. Towards the end of the session, the audience was highly impressed by her talk for the day and appreciated the initiative actively.



# STUDENT'S SANCTUM

## PHOBIA OF MATHS

~ AASTHA YADAV

Phobia of Maths !!

Or Fear of Maths, whatever you call it, we all have gone through that at some point of time in our life.

This thing needs to be addressed, being a Maths Honours student, I've been asked multiple times that how do I manage Maths.

Well, Maths is not as much tough as we assume it to be. As we all heard about the

importance of maths in sharpening our mind and how scoring the subject is...!!

Yess, I agree with this.

But the biggest question arises is that how to deal with this ?

Ok, let me give you the solution of this with the help of an example.

When the person gets ill then he/she needs to take medicines regularly on time to get fit

again...same with maths we have to take it's medicine regularly on daily basis and on time

until we get out of it...and we all aware about that medicine...

‘PRACTICE ‘

Aren't we know about this medicine...??

But the problem is that we don't take it consistently.....Practice is something which makes

the man perfect...and practice in maths will definitely help you to get rectified easily from

it's phobia.

Maths needs regular practice and we need to be consistent with our practice then only you

will start loving it and enjoying it as well

## MATH'S WORD

~ NANDNI GUPTA

In the pages of numbers, a symphony plays,

Where mathematics unfolds in mysterious ways.

Each theorem and proof, a tale to be told, In the language of symbols, a story unfolds. From the elegance of pi to the depths of prime, Mathematics unveils its grand design. Infinite series and geometric grace, A universe of patterns, in every trace.

Algebra's embrace, where variables dance, Solving equations with logic and chance. Geometry's angles, lines, and curves, Inscribed in the cosmos, each one preserves.

Calculus, the calculus of change,  
Capturing motion in a timeless range.  
Statistics, the oracle of data's song,  
Guiding decisions, where truths belong.

In the magazine's pages, let  
mathematics shine,  
A beacon of knowledge, in every line.  
For in its depths, we find beauty and  
art, A testament to the human heart.

## MATHEMATICIAN'S CONTRIBUTION

~ NANDNI GUPTA

In the annals of history, where  
brilliance thrives,  
Lies the legacy of mathematicians'  
lives. From ancient thinkers to modern  
minds, Their contributions echo  
through endless times.

Pythagoras, with his theorem  
profound, In right triangles, symmetry  
found. Euclid, the father of geometry's  
art, In his Elements, wisdom did  
impart.

Archimedes, with his mind so keen, In  
circles and spheres, he reigns  
supreme.

Newton, whose calculus changed the  
game,

In fluxions and integrals, he found  
fame.

Gauss, the prince of mathematics'  
realm, With his insights, he  
overwhelmed. Euler, with formulas  
vast and grand, In equations and  
series, he took command.

Ramanujan, with his mystical insight, In  
partitions and primes, his genius alight.  
Turing, in the realm of computation's  
lore, In algorithms and machines, he  
opened the door.

From Fibonacci to Fermat's tale, Each  
mathematician, beyond the pale. In  
their numbers and proofs, a legacy  
spun, In the eternal dance of the  
infinite one.

## CAN U SOLVE??

~ ANSHITA SINGH

### Can you Crack the Code?



9 2 8 5

One number is correct  
but wrong placed.

1 9 3 7

Two numbers are correct  
but wrong placed.

5 2 0 1

One number is right  
and well placed.

6 5 0 7

Nothing is correct.

8 5 2 4

Two numbers are correct  
but wrong placed.

# VOICE CLONING WITH AI

~ RIYA YADAV



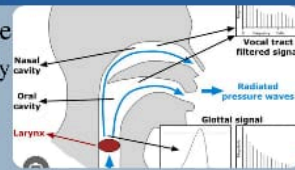
## VOICE CLONING WITH AI

Daulat Ram College, Delhi University

Presented by - Riya Yadav , B.Sc.(H) Mathematics, 3rd year

### INTRODUCTION

**Mathematical model of voice:-** Voice model is the process of capturing the characteristics of speaker voice in data structure ,by using graphs and geometric diagrams .There are two types of speech recognition one is text dependent and other is text independent as we will discuss about voice cloning so we will learn about GMM .



**GMM :-** (GMM) Gaussian Mixture Models is a text-independent method for the recognition of speech, which commonly used estimate of the probability density function .To built GMM we need to assume the number of Gaussian parameters and then large number of features is used to train these gaussian , this is called training . In GMM a non-singular multivariate normal distribution of a d-dimensional random variable x be defined as fig mentioned above.

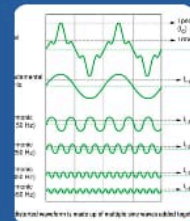
$$N(x; \mu, \Sigma) = \frac{1}{\sigma^2 \sqrt{2\pi}} \exp\left\{-\frac{1}{2\sigma^2} \sum_{i=1}^d (x_i - \mu)^2\right\}$$

Where  $\mu$ :- Mean  
 $\Sigma$ :- Covariance Matrix of the Gaussian  
 $n$ :- The number of features in our dataset  
 $m$ :- the number of datapoints

**TTS technology: -** Text-to-Speech is a another algorithm of AI which take place under matrix.

### WORKING:-

1. In AI software , we follow the steps to get voice clone :-  
1. Enter the samples of voice of person , we need to copy.
2. AI make the mathematical model of given data and use GMM
3. Then we enter the text we need to hear in clone voice by using TTS technology and then download the file.



### Uses:

1. Music production:-This technology has disruptive potential for the music industry. It allows the creation of songs with voices that sound identical to those of popular artists.
2. Content creation:-Many companies and media outlets can use voice cloning applications to create customized podcasts with the voice of their most famous contributors and employees to enhance their content and expand user acquisition channels.
3. Increased accessibility for patients with visual or speech impairment:-For people with speech disabilities, voice clone generators can help create a personalized voice that can be used with text-to-speech devices.



**Conclusion:-** AI - the future of ours has lot's of benefits and as always maths plays a big role in all these things, maths is a big ocean from where we always have a small dive to see the hidden beauty which neglected easily.

### Reference:-

[https://people.cs.uchicago.edu/~odonnell/Scholar/Work\\_in\\_progress/Digital\\_Sound\\_Modelling/lectnotes/node3.html](https://people.cs.uchicago.edu/~odonnell/Scholar/Work_in_progress/Digital_Sound_Modelling/lectnotes/node3.html)

# ACHIEVEMENTS

## • JAM Rank Holders 2024



**Chaya Tiwari**  
(3rd Year)  
AIR 234



**Sakshi Jaiswal**  
(3rd Year)  
AIR 377



**Kanchan Bharti**  
(3rd Year)  
AIR 949



**Anamika**  
(3rd Year)  
AIR 1097

## • Placement & Academics 2024



**Ayushi Shukla**  
(3rd Year)  
Planet Spark  
Business Development Executive



**Paramjeet Kour**  
(3rd Year)  
Secured highest marks in  
examination of Bsc. (H)  
Mathematics, 2nd year



**Anshika**  
(2nd Year)  
Secured highest marks in  
examination of Bsc. (H)  
Mathematics, 1st year

## • Inter college Event



**Shubhi Soni**  
(1st Year)  
1st Prize  
Table Tennis  
(Freshers Sports Meet DRC)



**Anshika Bansal**  
(2nd Year)  
2nd Position  
Mathewizzer : The Quiz  
3rd Position  
Azadi ka Amrit mahotsav  
Quiz on veer savarkar



**Honey Singh**  
(2nd Year)  
3rd Position  
Inter College Maths Quiz  
(Syam Prasad Mukherjee  
College, Du)



**Anshika**  
(2nd Year)  
1st Position  
Mathewizzer: The Quiz  
2nd Position  
Inter College Maths  
Quiz (SPM College)

# ACHIEVEMENTS



**Kavya Singh**  
(2nd Year)  
2nd Position  
Rasautsav 2.0  
(DRC)



**Aastha Yadav**  
(2nd Year)  
1st Position  
Treasure Hunt, LSR College  
2nd Position  
Smartini - The Marketing  
Society of Gargi College

## • Scholarships



**Anju**  
(3rd Year)  
INSPIRE Scholarship



**Gunjan Rohilla**  
(3rd Year)  
INSPIRE Scholarship



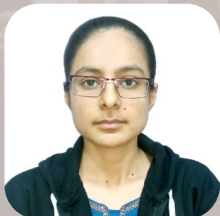
**Nancy Wanglembam**  
(3rd Year)  
INSPIRE Scholarship



**Khushi Chaudhary**  
(3rd Year)  
INSPIRE Scholarship



**Ruby Kotwal**  
(3rd Year)  
INSPIRE Scholarship



**Anita**  
(3rd Year)  
NSP Scholarship



**Kanchan Bharti**  
(3rd Year)  
NSP Scholarship



**Vandana Gautam**  
(3rd Year)  
NSP Scholarship



**Vanshika Jogani**  
(3rd Year)  
INSPIRE Scholarship

# TEACHER'S NOTE

Mathematics is the systematic application of matter. It is called so because this subject makes humans systematic or orderly. Mathematics makes our lives systematic and prevents chaos. Some of the qualities nurtured by mathematics are reasoning power, creativity, abstract or spatial thinking, critical thinking, problem-solving ability, and even effective communication skills. Mathematics is the cradle of all creations, without which the world cannot move even an inch. Be it a cook or a farmer, a carpenter or a mechanic, a shopkeeper or a doctor, an engineer or a scientist, a musician or a magician, everyone needs mathematics in their daily lives. Even insects use mathematics in their daily lives for their survival.

We can say a lot about how mathematics is involved in our daily lives. In conclusion, we can say that the universe revolves around mathematics. It encompasses everything and we cannot even imagine our lives without it.

Ms. Sapna Kumari Meena  
Assistant Professor  
Department of Mathematics  
Daulat Ram College  
University of Delhi



# TEACHER'S NOTE

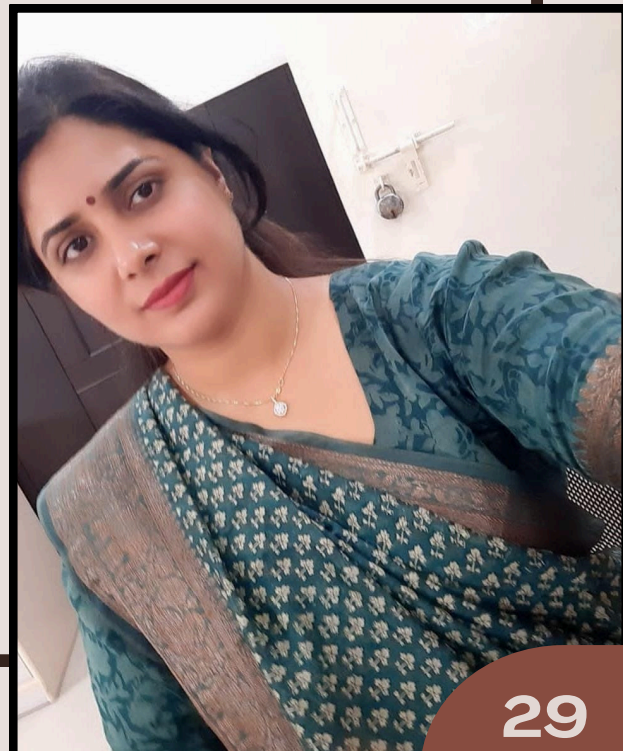
Mathematics is ultimately about concepts. The theories and concepts covered in college-level math classes are more intricate and advanced. Today, Mathematics is a vital tool in many domains, including natural science, engineering, medicine, and the social sciences, used all around the world. In addition, applications of Mathematics are everywhere and a strong background in Mathematics can help you in many different careers because it's fun and can prepare you for a variety of excellent careers! If you like solving puzzles and figuring things out, then a Mathematics major may interest you. If you continue taking math courses in college, you will come to know more Mathematics than most other people. I believe learning Mathematics and how to communicate mathematical ideas clearly can help you advance in your career.

As a math teacher, I know that it's also a field in which many people feel intimidated, like they're not capable of understanding it. That's why I love teaching math, it's an opportunity to help students overcome their fears and see the beauty in the subject. I think, Mathematics is a lesson which amuses you with imaginative ideas. Also, Mathematics does not mean to learn about formulas but to learn critical thinking and implying imagination in solving mathematical problems.

Why Learn Mathematics?

In the quest for knowledge, where secrets are vast  
Maths is the key to the future and past  
Number and equations, a language so clear  
Unlocking the cosmos, bringing mysteries near.

Dr Umesh Kumari  
Assistant Professor  
Department of Mathematics  
Daulat Ram College  
University of Delhi



# Unlocking Potential:

## The Role of Undergraduate Mathematics in Industry Applications

In today's rapidly evolving technological landscape, the demand for individuals with strong mathematical skills has never been higher. While Mathematics has traditionally been associated with academia, its applications in various industries are becoming increasingly prevalent. Undergraduate Mathematics programs provide students with a solid foundation in mathematical principles, equipping them with the tools to tackle complex problems across diverse fields such as finance, engineering, healthcare, and technology.

One of the primary areas where undergraduate Mathematics finds extensive application is in the realm of finance. Financial institutions rely heavily on mathematical models to make informed decisions regarding investments, risk management, and pricing of financial products. Students with a background in Mathematics possess the quantitative skills necessary to develop and analyze these models, contributing to the efficient functioning of financial markets.

In the realm of engineering, Mathematics plays a crucial role in the design, optimization, and simulation of systems and processes. Whether it's developing algorithms for autonomous vehicles, modeling fluid dynamics in aerospace engineering, or designing efficient communication networks, mathematical principles form the backbone of engineering solutions. Undergraduate Mathematics programs provide students with the analytical skills needed to address complex engineering challenges and drive innovation in various industries.

Moreover, the healthcare industry is increasingly leveraging mathematical techniques to improve patient care, optimize healthcare delivery, and advance medical research. From analyzing medical imaging data and modeling the spread of infectious diseases to developing algorithms for personalized medicine, mathematics plays a vital role in enhancing healthcare outcomes. Undergraduate Mathematics students equipped with statistical analysis and computational skills contribute to the development of innovative healthcare solutions that benefit society as a whole.

In the realm of technology, mathematical concepts underpin the development of cutting-edge software, algorithms, and artificial intelligence systems. Whether it's machine learning algorithms for predictive analytics, cryptography for cybersecurity, or optimization techniques for resources

allocation, Mathematics provides the theoretical framework for technological advancements. Undergraduate Mathematics graduates possess the mathematical literacy necessary to drive innovation in the rapidly evolving tech industry.

Furthermore, the burgeoning field of data science relies heavily on mathematical principles to extract insights from large volumes of data. Undergraduate Mathematics programs equip students with the statistical and computational skills needed to analyze data, build predictive models, and derive actionable insights. From market analysis and customer segmentation to predictive maintenance and fraud detection, mathematics forms the foundation of data-driven decision-making in various industries.

In addition to these industries, Mathematics finds applications in diverse fields such as environmental science, telecommunications, logistics, and beyond. The interdisciplinary nature of Mathematics allows graduates to apply their skills to tackle real-world problems across different domains, making them valuable assets in the workforce.

However, bridging the gap between undergraduate Mathematics education and industry applications requires a collaborative effort between academia and industry stakeholders. Universities can enhance their mathematics curricula by incorporating practical applications, case studies, and industry projects to provide students with hands-on experience. Internship programs, industry collaborations, and mentorship opportunities can further expose students to real-world challenges and foster the development of industry-relevant skills.

In conclusion, undergraduate mathematical education serves as a gateway to a wide range of career opportunities in various industries. By nurturing analytical thinking, problem-solving skills, and mathematical literacy, undergraduate Mathematics programs empower students to make meaningful contributions to society through their work in industry. As industries continue to evolve and embrace technological advancements, the demand for individuals with a strong mathematical background will only continue to grow, highlighting the invaluable role of undergraduate Mathematics in industry applications.



# Alumni Corner

From the heart of our seniors

Hii Affine family,

As I reminisce about the three years of college life it brings me great joy. My college, where I met so many people from various streams and had such great opportunities. The best part was being in Affine. All those waves of laughter and developments that I had during college still hold a great place in my heart.

Now it's your time to take that step forward, to take that leap and start a new phase. Being in Affine taught me many lessons. The most important one is "Believe in yourself". Have faith in yourself and your talents. If you never lose that ray of hope you can always succeed and overcome any situation. I want to add that always try to learn from your environment and conditions. You may not understand them today but someday it will all make sense.

A precious thing that we always tend to underestimate is "time". So I would advise all of you to do justice to your time. When it's time to enjoy college, do that to the fullest but when it's time to study give your 100% to that. At last, I would like to say that We all have magic within us. All we have to do is look within us and find that.

Good Luck!

Monika Singh (2019-2022)

Ex-Vice President,  
Affine



**MONIKA SINGH**  
**BATCH'22**

EMPLOYEE AT NATIONAL BOARD OF  
EXAMINATION, MINISTRY OF HEALTH



**KHUSHI SEN**  
**BATCH'23**

PURSUING MSC. FROM IITDELHI

As I reminisce about my time in DRC, I'm filled with gratitude for the opportunities and experiences that shaped my journey.

During my second year, I had the privilege of serving as the treasurer of our department. It was a role that not only challenged me but also provided invaluable lessons in leadership and financial management. It's a privilege to be part of such a dynamic and inspiring community. I extend my deepest gratitude to the entire mathematics department for its constant support and encouragement throughout my journey.



## **KAJAL CHHIKARA BATCH'23**

PURSUING MCA FROM IGDTUW

It's been almost a year since I graduated from DRC. Still feels like yesterday. I believe mathematics is the magic. The magic of perspective. The magic of imagination. And then, maybe, the power of proving.

In the serene courtyards of DRC, the morning sessions, discussions, theorems, proofs, disproves, and whatnot. Mathematics flourished. I believe, in the end, it's the ability to think, to carry forward, to fight, to make decisions in the real world, that we all get to carry away.

Dear Affinates

As I pen down these words, memories of my pivotal three years in DRC flood my mind. Every cherished memory, filled with joy, beauty, and love, is now vividly before my eyes. I'm reminded of the invaluable lessons in perseverance, patience, and diligence it imparted to me. And, I carry with me all the values and lessons instilled in me by Affine.

As you embark on your own journey, remember this: Life is a continuous odyssey of learning and unlearning, becoming and unbecoming. Embrace setbacks as opportunities to learn. Never cease to pursue your aspirations and endure all challenges that come in the way.

You're at the best place where you'll get unwavering support and great opportunities. Ensure you make the most of it!

- Shruti Tayal  
M.Sc. Mathematics  
Netaji Subhas University of Technology



## **SHRUTI TAYAL BATCH'22**

PURSUING MSC. MATHEMATICS FROM  
NSUT

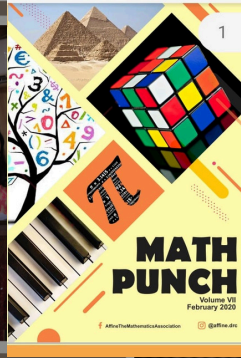
# BATCH'24



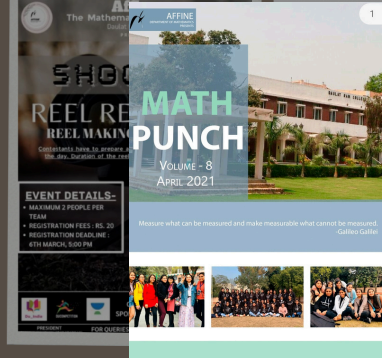
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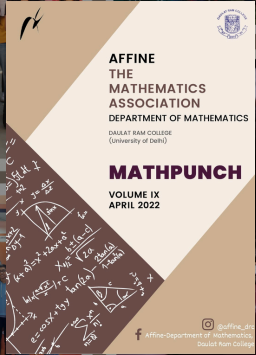
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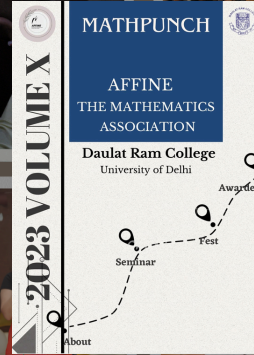
Year 2020



Year 2021



Year 2022



Year 2023

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