FEBRUARY 2024

VOL 1 | ISSUE NO 2

INFINITY INSIGHTS



"MATHEMATICS IS NOT ABOUT NUMBERS, EQUATIONS, COMPUTATIONS, OR ALGORITHMS: IT IS ABOUT UNDERSTANDING." ~ WILLIAM PAUL THURSTON

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Mentor: Dr. M. Vivek Prabu, Assistant Professor of Mathematics Kongunadu Arts and Science College, GN Mills(Po), Coimbatore - 641 029

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On 01-02-2024, II B.Sc., Mathematics students along with the staff members of Kongunadu Arts and Science College embarked on an exciting journey to the Mathematics Laboratory of Bannari Amman Institute of Technology, Sathyamangalam, Erode. This one-day trip was not just an ordinary excursion; it was a day filled with wonder, exploration, and hands-on learning.



Our Energetic Students at Bannari Amman Institute of Technology

"As we entered into the Mathematics Laboratory, the first thing that caught our attention was the impressive models. We were welcomed by friendly staff who shared a brief view of models inside. Unlike other labs, this encouraged us to touch, play, and experiment the models. The exhibits covered a wide range of Mathematical concepts, making learning a fun and engaging experience", said Ms. R. Sandhiya of II B.Sc., Mathematics

The **Triangle Catcher** helps to learn the properties of triangle and quadrilateral. By observing the below model we can make the different types of triangle and quadrilateral shapes.





Our enthusiastic students keenly observing the models



Faculty members of Bannari Amman Institute of Technology briefing the working mechanism and Mathematical concepts behind the models

"Our one-day trip to Mathematical Laboratory in Bannari Amman Institute of Technology was a memorable and enriching experience. It not only broadened our understanding of Mathematics but also inspired curiosity and a love for learning. As a college students, we left with a newfound appreciation for the wonders of the Mathematics world and the importance of exploration in education", said **Mr. Hari Prasad P of II B.Sc., Mathematics** out of excitement.

Of course, learning beyond the syllabus and gaining knowledge certainly makes students more active.

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A SEMINAR ON LARGE SCALE SAMPLE SURVEYS

organized by National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India



Six UG Students of our Department accompanied by Dr. V. Kokilavani, Associate Professor & Head, Department of Mathematics participated in the Seminar

National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India organized a Seminar on Large Scale Sample Surveys on 09.02.2024 at their office. The motive of the program is to create awareness among the students and educate them about the role of surveys in shaping a better society. Different types of surveys like Socio-Economic survey, Annual survey of Industries, etc.. were explained along with their requirements and benefits. As surveys more important for planning, research, formulation are and implementation of welfare policies, the public must respond to the surveys and provide appropriate data which would certainly help the policymakers. As most of the participants are from the Mathematics background, various Statistical tools involved in surveys were explained. To motivate the participants, a quiz competition was conducted in the afternoon session.

"Questions were asked from the concepts discussed in the forenoon session. Besides that few questions were based on the basic concepts of Statistics and Mathematics. This was a wonderful opportunity for us as we gained exposure and learned many new concepts related to surveys. We understood the motive behind a survey and how effectively a survey should be made. Certainly, this learning would help us when we engage in our academic projects or research.", said **Ms. S. Santhoshini of III B.Sc. Mathematics**.

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MENTOR-MENTEE MEETING

A Mentor-Mentee Meeting was held on **17.02.2024** at the Department of Mathematics, Kongunadu Arts and Science College, to discuss about the activities being done under DBT Star College Scheme. **Dr. R. Parvathi**, Associate Professor and Head, Department of Mathematics, Vellalar College for Women (Autonomous), Erode served as the Mentor and provided her valuable insights.



She highly appreciated the commitment of the faculty members in organizing various programmes under DBT Star College Scheme. She motivated the faculty members to train the UG students who are advanced learners and help them to publish research articles. She congratulated the students who had edited a Mathematics **Formulae Book** with the motive of helping poor and needy students.

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EDUCATIONAL TRIP

The UG and PG students of the Department of Mathematics went on an educational trip to Mysore, Coorg, and Chikmangalur between 21.02.2024 and 24.02.2024. A total of 42 students were accompanied by 3 Female and 2 Male Faculty members of the Department.



Golden Temple: This Magnificent Monastery is a popular tourist attraction in Coorg. Students observed the geometrical concept 'Symmetry' in this architecture and admired the way it had been constructed.



Chiklihole Reservoir: It is one of the popular places to visit in Coorg. It is built across the river Chiklihole flowing through the Cauvery basin of Karnataka.

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Baba Budan Giri represents a unique syncretic culture of Hindus and Muslims where both offer prayers in a cave-like structure.



Our team at the Infosys Campus, located at Mysuru



Mysore Palace, One of the Historical places that stands as the pride of Southern India.



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Meet Ms. R. Karthika, a visionary scholar whose academic journey transcends conventional boundaries. From the halls of Kongunadu Arts and Science College to lot of prestigious international conferences and beyond, her pursuit of knowledge has left an indelible mark on the academic landscape. With a string of accolades and accomplishments to her name, R. Karthika stands as a testament to the power of determination and the boundless potential of the human spirit.

MS. R. KARTHIKA (Research Scholar)



EDUCATIONAL DETAILS

SSLC: 499/500 : 100% : Bishop Francis Matriculation School, Coimbatore.

HSC: 1143/1200 : 95% : Vidyaa Vikas Matriculation Higher Secondary School, Karamadai.

B.Sc.: 9.445/10 CGPA : Kongunadu Arts and Science College, Coimbatore.

M.Sc.: 9.59/10 CGPA : Kongunadu Arts and Science College, Coimbatore.

PG Diploma in Computer Applications (PGDCA): Kongunadu Arts and Science College, Coimbatore.

PG Diploma in Data Analytics (PGDDA): Kongunadu Arts and Science College, Coimbatore.

Currently pursuing Ph.D in the Research Area "Graph Theory".

All about her!

KEY ACHIEVEMENTS

Recipient of numerous academic awards, including Best paper award for her paper presentation in International Conference on Theoretical and Computational Graph Theory (ICTCGT-2024) organized at Vellalar College for Women, Number of prizes for

organized at Vellalar College for Women, Number of prizes for Oratorical Competitions both in Tamil and English, Second place in National level English Oratorical Competition for 168th Jayanthi Celebration of Sri Saradha Devi by Ramakrishna Math, Venkala Award in State Level Tamil Poetry Writing Competition Organised by Netaji Subash Chandra Bose College, First Place in the Inter college Essay writing competition in Tamil for the National Science Week Festival held at the Regional Science Centre.

Attended more than 10 International conferences and many National conferences, workshops, webinars and seminars. **Presented 8 papers** in international conferences. **Published 5** of her research papers as of now. Has **8 citations and h-index : 1** since 2019 showcasing a depth of scholarly insight and innovation.

She showed us her Leadership quality within academic societies, fostering a culture of excellence and collaboration among peers. She has also been the **Master of Ceremony** for various conferences, guest lectures and seminars organized by the Department of Mathematics and Swami Vivekananda Study Circle, Kongunadu Arts and Science College. Successful completion of groundbreaking research project, contributing valuable insights to her respective field of study like **"Domination Colouring of Graphs and its Applications"** supervised by Dr. N. Mohanapriya, Assistant Professor, Department of Mathematics, **approved by** the **Tamil Nadu State Council for Science and Technology (TNSCST)** under the Student Project Scheme 2021-2022.

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Besides her academic laurels, she received the **Best Tamil Literary Award** during the academic year 2019-2020 instituted by the Department of Tamil, Kongunadu Arts and Science College. She is well versed in writing 'Venba' which is considered as one of the toughest formats in Tamil Poetry. The great guru and saint Perur Aadheenam Thavathiru Shanthalinga Maruthachala Adigalar highly appreciated her efforts in accomplishing the task of writing Venba. Being an adherent devotee of Lord Muruga, she has penned 108 Venbas on Lord Muruga which is about to be released as a book shortly.

She has co-authored two e-books namely 'A-Z Alliteration Quotes' and 'My Treasure'. She has completed a few online courses and she is good at several programming languages like C, C++, VB, SQL, Python, R, HTML and LaTeX.

To know more about her interests and achievements, we threw a few questions at her and got some amazing answers.

1. Talk us through your journey in Mathematics as it would certainly be the biggest source of motivation for our students.

I always wanted to apply Mathematics in real life and the opportunity provided by the Tamil Nadu State Council for Science and Technology made it possible. This recognition provided me the chance to collaborate, learn, and showcase my ideas in a larger platform.

2. How did you end up choosing Mathematics?

The widespread application of Mathematics across almost every field amazed me, inspiring my desire to explore it further. Learning and loving mathematics day by day is really a wonderful experience.

3. Like any ordinary kid, did you have any fear of Mathematics during your childhood days? If so, how did you eradicate that fear?

I never feared practicing math because I've always enjoyed exploring

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mathematical concepts practically from the very beginning So Mathematics was not at all a nightmare for me. In fact, if it is taught in a play-way method then it would be fascinating for any kid.

4. Tell us about your future goals

I'm working on understanding the basic logics and concepts behind the essential stuff in my domain, and I'm eager to offer compelling applications derived from this understanding.

5. Share with us about your Research interests

I'm currently studying Graph Theory, especially Graph Coloring. It's fascinating because almost anything in the world could be modelled as a graph. The exploration of the interesting properties of a graph could do wonders and help us make amazing discoveries.

6. Recollect your most cherishing moment in our Department

I would proudly say that the Department of Mathematics has played a crucial role in making me who I am today. Whether it's getting better at academics or just personality development, I owe a lot to the department staffs and friends. They've given me tons of chances to get better at everything, both in and out of class. Lots of lessons that'll stick with me for life.

7. An advice for us as a Wellwisher

"Always learn things out of curiosity, whether it's about life or mathematics!"

"I owe my sincere thanks and respect to the staff members of the Department of Mathematics and the Department of Tamil from our college for their constant guidance and encouragement to develop my academic and literary skills."

These words of hers at the end of the interview showed us how humble she is after all the achievements she had accomplished. We wholeheartedly wish her to achieve many more accolades in her journey and be a source of inspiration for many youngsters.

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Students'

To make Mathematics a favourite and friendly subject among the students, we conducted Inter – School Competitions and Inter - Departmental Competitions, which were briefed in our previous issue. The following are some of the sketches made by the students which would certainly be a visual treat.



3D Magic by THARAKA SREE (XI - B), Vidhya Vikasini Matriculation Higher Secondary School.

"In the realm of 3D pencil art, every stroke is a calculated measure, every angle a mathematical precision, crafting illusions of depth and dimension."

"The pursuit of beauty is in mathematics as in everything else, a true guide to the highest form of existence." - Srinivasa Ramanujan



Sketch by PRANITHA M (VI - A), Velammal Bodhi Campus.

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Math Tree by DEEPIKA K (VI - B), Ruby Matric Higher Secondary School.

"In the realm of geometry, patterns emerge like constellations in the night sky, guiding us through the labyrinth of mathematical beauty."



"Just as a tree's roots anchor it

firmly to the ground, the

foundational principles of

mathematics provide stability

and support for the growth of

complex ideas."

Pattern Art by ARTHI N (I BSc Mathematics), Kongunadu Arts and Science College.

"To confer the gift of drawing, we must create an eye that sees, a hand that obeys, a soul that feels; and in this task, the whole life must cooperate. In this sense, life itself is the only preparation for drawing. Once we have lived, the inner spark of vision does the rest." ~Maria Montessori

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Father of Mathematics ARCHTMEDES OF SYRACUSE

Archimedes was an ancient Greek mathematician, physicist, engineer, and inventor. He is famous for his discovering in principles of geometry, physics and astronomy including the lever and the principle of buoyancy.



Contributions

Archimedes made groundbreaking discoveries in **geometry**, particularly in the calculation of areas and volumes. He developed methods for calculating the **areas of shapes** such as circles, spheres, and parabolas.





He found the area of a circle by finding the area of smaller rectangles and adding them together. This is termed the "**method of exhaustion**" and which led to **Integral calculus**.

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Archimedes is famous for his approximation of the mathematical constant pi (π). He calculated the value of pi more accurately than any mathematician before him. He gave us the ability to calculate square roots accurately.

Archimedes said that he could create a number, greater than the grains of sand that would be required to fill the universe. He estimated that the number would be larger than 10^{63}



A spectacular landmark in the history of mathematics was the discovery by Archimedes stating that the volume of a solid sphere is two-thirds the volume of the smallest cylinder that surrounds it, and that the surface area of the sphere is also two-thirds the total surface area of the same cylinder.



This cone has radius r and height 2r. Its volume is $\frac{2}{3}\pi r^{3}$



This sphere has radius *r*. Its volume is $\frac{4}{3}\pi r^3$

This cylinder has radius a

This cylinder has radius r and height 2r. Its volume is $2\pi r^3$

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GEOMERTY In Design



Architects use geometry to study and divide space as well as draft detailed building plans. Builders and engineers rely on geometric principles to create structures safely. Designers apply geometry (along with color and scale) to make the aesthetically pleasing spaces inside. Applying geometry in design is unavoidable.



Connecting to nature in this way allows us to draw on geometric design patterns for inspiration. Avoiding right angles and straight lines for more organic movement within a space or using the Fibonacci series to create proportion are two examples of applied geometry in design.

Natural geometry:

Pattern can be found everywhere in nature: tree branches, snowflakes, zebra stripes, nautilus shells. We've been studying these natural patterns since ancient times, and only recently have we really been able to explain them with mathematics, physics, and chemistry. Perhaps it's this mystery and complexity that draws us to geometric patterns in the first place.



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The most commonly-found natural patterns are:

Symmetry – the near-repetition of a pattern element by reflection or rotation

Spirals – a continuous and gradually widening (or tightening) curve around a central point

Fractals – similar patterns recurring at progressively smaller scales Tessellations – patterns formed by repeating tiles on a flat surface



This bisected look at the inside of a nautilus shell show the spiral inside – a perfect example of the Golden Ratio.
Romanesco broccoli has a distinct spiraling fractal pattern.
Flowers have a natural symmetrical structure.
Bee honeycombs are a natural tessellation of small hexagons..

From large, **3 - Dimensional structures** that evoke honeycombs to cosmetic details that mimic vine growth, Biomorphic Forms & Patterns bring nature to life and reduce stress within our environment. And, it works at a large or small scale.

Humans instinctively gravitate to visually interesting spaces. By understanding the mathematics behind complex design and using nature as a guide, we can bring more of what's outside into our built environment.



PERFECT NUMBER : A Number is said to be a **Perfect Number**, if the sum of its divisors (excluding the given number) equals the number itself.

But in the case of a number having more than 3 digits, How will I check whether the number is Perfect or Not?



COMPLEX PROBLEM!! BUT THE SIMPLE SOLUTION IS PROGRAMMING

Let us try to find the solution through Python Programming!!

- Get a number from the user using input() function.
- Try to find the divisors using the MODULO operation
- For example: To find the divisors of 8, Starting from 1, Divide the given number till 7.
- Append the number in the list when the remainder is Zero.
- Append all the divisors in a List.
- Find the sum of all numbers in the list.
- If the sum equals the given number, then the number is a Perfect Number.

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Try this code to check whether the given number is perfect number or not

```
number = int(input("Enter a number:"))
divisors_list = [ ]
sum = 0
for i in range(1, number):
    if ( number % i == 0 ):
        divisors_list.append(i)
        sum += i
print(f "The Divisors of {number} are {divisors_list}")
print(f "The Sum of divisors is {sum}")
if sum == number: #Comparing sum and the number
    print(f "{number} is a Perfect Number")
else:
    print(f "{number} is not a Perfect Number")
```

Output

Enter a number: 496 The Divisors of 496 are [1, 2, 4, 8, 16, 31, 62, 124, 248] The Sum of divisors is 496 496 is a Perfect Number

Enter a number: 8128 The Divisors of 8128 are [1, 2, 4, 8, 16, 32, 64, 127, 254, 508, 1016, 2032, 4064] The Sum of divisors is 8128 8128 is a Perfect Number

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2520

2520 is the smallest number which can be divided by all the numbers from 1 to 10

ACTS

William Shanks is famed for his calculation of π to 707 places in 1873, which unfortunately was only correct for the first 527 places





Out of all the numbers between 1 and 10, 7 is the odd one out. You can't multiply or divide it to get another number within that range.

The sum of integers between 1 and 100 is 5050 (Fifty-Fifty ☺)

5050



The plus (+) and the minus (-) signs were used way back in 1489 AD itself.

The product of 111,111,111 x 111,111,111 is 12, 345, 678, 987, 654, 321. Did you notice that the sequence of the numbers is 1 to 9 and back to 1?



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- **1** Express 31 using only the digit 3 five times.
- 2 Tanya is older than Eric. Cliff is older than Tanya. Eric is older than Cliff. If the first two statements are true, then the third statement is true or false?
- **3** The sum of ages of 5 children born at the intervals of 3 years each is 50 years. What is the age of the youngest child?
- 4 If 3 cats can catch 3 bunnies in 3 minutes, how long it take for 100 cats to catch 100 bunnies?
- **5** Use the numbers 2, 3, 4, and 5 along with the symbol '+' to make a valid math equation.
- 6 Among any five consecutive odd integers, if the sum of first two integers is 52, then find the sum of the last two integers.



A) Find the missing number in the card?



Send your answers to <u>infinityinsights@kongunaducollege.ac.in.</u> Check out this section in our next issue for the correct answers. **B)** Find the missing number?



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MAUM'S OUTLINE SERIES

GENERAL

TOPOLOGY



Name of the Book : General Topology Name of the Author : Seymour Lipschutz Name of the Collection : Schaum's Outline Series Name of the Publisher : McGraw-Hill Book Company Year of Publication : 1965

General Topology by Seymour Lipschutz is a part of the famous Schaum's Outline Series initiated by McGraw-Hill Book Company to cover various topics in Mathematics with an aim of providing the readers the opportunity to enhance their foundation in Analysis and Algebra particularly.

This book consists of 15 chapters. Starting from Sets and Relations, it discusses various topics in Analysis that lay a foundation for the concepts in Topology. Rather than just recalling the preliminary definitions, this book clearly explains each concept with appropriate examples.

This book is mainly meant for students and is ideal for independent study. Besides classroom lectures, this book would remain handy for any student to understand the concepts much more easily with the help of the simple examples given in this book.

Neighborhood, Limit Point, Basis, Closure, Interior, Dense set, Border, Exterior, Frontier, Separation axioms, continuity, metric spaces, normed space, compactness, and connectedness are the underlying concepts in point-set topology, and this book discusses each of them in a simple language with adequate examples for better understanding.

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Easily results in the Real Analysis have been given in the Appendix section, which ensures that one need not refer to another book again for the prerequisites. At the end of the book, all the key terminologies have been alphabetically listed along with the respective page numbers on which they are discussed. This would certainly help anyone to easily look into the necessary definitions as and when required.

On the whole, this book would certainly help not only the students but also the young teachers who are in their early days of teaching career. Unlike a monotonic textbook with full of theorems and proofs, this textbook focuses more on problems that discuss the results of those theorems.

Solved Problems at the end of each section followed by a few supplementary problems for the readers to solve provides the students an opportunity to engage in problem-solving by applying the concepts they have studied and ensuring they recall the required terminologies.



Reviewed by Dr. M. Vivek Prabu Assistant Professor of Mathematics Kongunadu Arts and Science College (Autonomous) Coimbatore, Tamil Nadu, India

Send your Book Review to infinityinsights@kongunaducollege.ac.in

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Samurai Sudoku puzzles consist of five overlapping Sudoku grids. The standard Sudoku rules apply to each 9 x 9 grid. Place digits from 1 to 9 in each empty cell. Every row, every column, and every 3x3 square should contain all the integers between 1 and 9 exactly once. Try the Samurai Sudoku. Pat yourself if you can make it within 15 minutes.

6 P.				6				9				9				1				2
	7			1			2						8			7			3	
					4	5								5	9			1		
	1					7								9						i i
9	5						4	1				2	5						1	4
		1																6		
		5	7														8	1		
	8			2			1						2			5			7	
7				4				5		6		8				2		í –		5
_					_				2		8					_				_
										-		-	-							
								4				17								
								4	5		1	1								
4	_		m	8				4	5	3	1	9				6			_	8
4	2			8			4	6	5	3	1	9	7			6			5	8
4	2	1	7	89			4	6	5	3	1	9	7			6	4	3	5	8
4	2	1	7	89			4	6	5	3	1	9	7			6	4	3	5	8
4	2	1	7	89			4	4 6 8	5	3	1	799	7			6	4	3	5	8
4	2	1 3	7	89		1	4	4 6 8	5	3	1	7 9 7	7	4		6	4	3	5	8
4	2	1	7	89	5	1	4	4 6 8	5	3	1	7 9 7 7	7	4 9	4	6	4	3	5	8
4	2 4 6	1	7	8 9	5	1	4 7 9	8	5	3	1	7 9 7 7	7 1 3	4 9	4	6 1 7	4	3	5	9

Send your answers to <u>infinityinsights@kongunaducollege.ac.in.</u> Check out this section in our next issue for the correct answers.

UNVEILING THE MYSTERIOUS WORLD

There are many mysteries in mathematics which are all not even solved till now. These mysteries can range from unsolvable equations to paradoxes that seem to have no solution. We will see some of the mystery just like that and also one interesting theory in this article.



Collatz conjecture, also known as the **3n + 1 problem**: This conjecture states that if you take any **positive integer** and if it is **even**, divide it by 2 and if it is odd, multiply it by 3 and add 1. No matter what number you start with, you will eventually reach the number 1. While this concept seems simple, it has yet to be proven true for all numbers, leaving mathematicians scratching their heads.

Riemann Hypothesis: It deals with the distribution of **prime numbers**. The hypothesis states that the **non-trivial zeros** of the Riemann zeta function all have a **real part of 1/2**. This hypothesis has baffled mathematicians for centuries and remains one of the most important unsolved problems in mathematics.

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Tesla Numbers: A Theory more than a mystery. This theory is about the numbers 3, 6 and 9. This theory was stated by the greatest **Scientist of all times "Tesla"** and hence these three numbers alone are called as **Tesla numbers**.

• Tesla believed that these three numbers are in higher dimension compared to other six base numbers and the number 9 is in even higher dimension compared to the numbers 3 and 6. He proposed this theory based on an experiment. He took the 9 base numbers then he squared those numbers separately and added their respective answers. For eg., when 4 is squared $4^2=16$ will be the answer then again the answer that is calculated should be added as 1+6=7. He done this process to all the 9 base numbers and found that no numbers among them except 3, 6 and 9 gives the final value of 9. Hence he stated that "These three numbers 3, 6 and 9 lies in an higher dimension".

• But when he checked the addition of the same number as 1+1, 2+2....9+9, and he found that all the numbers except these three numbers gives the final value of all other 6 digits and he also found that the addition of 3+3 and 6+6 gives the final value of 6 and 3 respectively and only the sum of 9+9 gives the value of 9. After this only he stated that "The number 9 lies in an even higher dimension compared to the digits 3 and 6".

DID YOU KNOW?

Zero is the only number that cannot be represented by Roman numerals.





9 is also known as the magic number. This is because if you multiply a number by 9 and add all the digits of the new number together, the sum will always add up to 9.

Ramanujan's magic square:

- Sum of any column is 139
- Sum of any 2X2 grid is 139
- Sum of any row is 139
- Sum across the diagonal is 139

22	12	18	87
88	17	9	25
10	24	89	16
19	86	23	11

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The ' = ' sign was developed by Robert Recorde, a 16th century Welsh mathematician who was bored with writing 'is equal to' every time in his equations

Think of a number, double it and add six, divide it by half, then find the difference with the number you originally thought. The answer will be 3!



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Bulls and Cows is a famous **four-digit number guessing game**. The number in each digit has to be unique. A player has to guess the secret number in a minimal number of attempts. During each guess, the numbers in the guess and the numbers in the secret number will be verified. The number of digits that exactly match with the secret number will be indicated by the Bulls and the number of digits that are correct but placed in the wrong positions will be indicated by the Cows.

For Example, if the secret number is 7523 and the player's guess is 5823, then it will be referred to as 1 Cow and 2 Bulls. Since the number 5 is in the secret number but placed in a different position, it is indicated as 1 Cow, whereas the numbers 2 and 3 are in the secret number and placed in the exact position, they are indicated as 2 Bulls. By looking at 1 Cow and 2 Bulls, the player will understand that among the four digits he guessed, three are correct and particularly two of them are in exact position. He has to make his next guess wisely based on this information.

To make it simpler for beginners, instead of a four-digit number, we shall prefer a 3-digit number. The following are the guesses W made by a player. Using this information, try to figure out the actual 3-digit number in the next attempt.

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Attempt	Guess	Number of Bulls and Cows
01	248	**
02	128	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
03	142	to to
04	???	***

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Attempt	Guess	Number of Bulls and Cows
01	784	
02	601	
03	630	
04	261	
05	???	ななな

3

Attempt	Guess	Number of Bulls and Cows
01	295	*
02	287	
03	193	t t
04	396	
05	???	* * *

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Attempt	Guess	Number of Bulls and Cows
01	519	t t
02	901	the che
03	791	<u> </u>
04	105	
05	???	**

(5)

Attempt	Guess	Number of Bulls and Cows
01	518	
02	764	ち
03	294	**
04	904	E
05	792	
06	???	**

Send your answers to <u>infinityinsights@kongunaducollege.ac.in.</u> Check out this section in our next issue for the correct answers.

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- 65th International Mathematical Olympiad which is to be held between 11.07.2024 - 22.07.2024 https://www.imo2024.uk/
- IMOTC 2024 Venue: CHENNAI MATHEMATICAL INSTITUTE, CHENNAI (<u>https://www.cmi.ac.in/</u>) IMOTC 2024 Dates: MAY 7 – MAY 31, 2024 <u>https://olympiads.hbcse.tifr.res.in/mathematical-olympiad-</u> 2023-2024/
- The School of Mathematics of TIRF will host an Online Visiting Student Research Programme in 2024. The programme will run from 20 May to 21 June 2024, in Online mode <u>https://mathweb.tifr.res.in/vsrp</u>
- The Tata Institute of Fundamental Research (TIFR), Mumbai organizes a two-week summer school, the Vigyan Vidushi program in Mathematics for Indian women students in mathematics.
 <u>https://mathweb.tifr.res.in/vigyanvidushi</u>
- Details of Conferences organized by TIRF <u>https://mathweb.tifr.res.in/conferences.html</u>

"MATHEMATICS KNOWS NO RACES OR GEOGRAPHIC BOUNDARIES; FOR MATHEMATICS, THE CULTURAL WORLD IS ONE COUNTRY." - DAVID HILBERT







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"MATHEMATICS IS THE ABSTRACT KEY WHICH TURNS THE LOCK OF THE PHYSICAL UNIVERSE." - JOHN POLKINGHOME