MASA NEWS LETTER

Issue 2 January 2016

Principal's Message

Strive towards excellence in teaching and learning should be the distinguishing mark of every department. The activities such as publication of Newsletters make a department more vibrant and give more exposure to students. I appreciate the efforts taken by the students and faculty of Mathematics department in bringing out this newsletter.

Dr. Saban K.V.
PRINCIPAL

Message from HOD

A newsletter will help us in getting to know ourselves better. It will also help others to get a glimpse of the activities in our department. The students will benefit from the interesting articles and mathematical facts given in this publication. I request everyone's support to make this a regular activity in coming academic years.

Prof. Ancy Peter
HOD

Department bids farewell to Prof Ancy Peter

On 31st May, Prof. Ancy Peter says goodbye to the department which has been her second home for the last 21 years. Prof. Ancy Peter joined the Dept. of Mathematics, St. Aloysius College Edathua as a Lecturer in 1995. She has been the Head of the Department since 2010. She teaches Real Analysis, Matrices, Functional Analysis, Measure Theory and Operations Research to UG and PG students

The excitement and eagerness shown by the alumni to meet Prof. Ancy Peter itself is the evidence of their love and affection towards her. Her contributions have been exceptional in the progress and smooth functioning of the department. Her absence would be felt dearly among the students and faculty members of the department.

We the students and staff of the department wish a joyful retired life in pursuit of the dreams to our dear teacher.

Big Data Jobs and Opportunities for Mathematics Graduates

Big data is a term that describes massive volume of both structured and unstructured data which is so large that it is difficult to process using traditional database and software techniques. Big data insights help to minimize risk and fraud while maintaining regulatory compliance in banking sector. Patient records, treatment plans, prescription information, etc. form the big data in health care. When big data is managed effectively, health care providers can uncover hidden insights that improve patient care.Customer relationship building is critical to the retail industry, and the best way to control that is to manage big data.

Big data and analytics is one area of technology where the companies are now facing shortage in skilled people.The issue is data scientists are not an easy talent to get. They are a difficult combination of mathematicians, statisticians, analysts and technologists. Reports say that India requires a minimum of 100,000 data scientists in the next couple of years. Now most of these jobs which require an analytical mind is grabbed by engineering graduates. Although the mathematics and statistics graduates have a sharp analytical mind they are lagging behind in capturing the opportunities because of their deficient computer skills and lack of awareness.

Being mathematics students you need to be aware of the opportunities outside. You should also equip yourselves with the right set of skills so that the employers will find you suitable for the job profile they have.

From the Editor's Desk

We are glad to bring out the second issue of our departmental newsletter 'MASA'. Through the newsletter we aim to highlight the activities of the department and also intend to give relevant information in the field of Mathematics.I hope you all will appreciate this issue of our Newsletter.

Dr. Jubin Antony
Editor

Published by the Department of Mathematics, St. Aloysius College, Edathua

The Man Who Knew Infinity

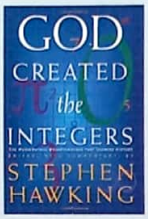
The Man Who Knew Infinity is a biographical drama film based on the 1991 book of the same name by Robert Kanigel. The film stars Dev Patel as the real-life Srinivasa Ramanujan. The role of Ramanujan's professor, G. H. Hardy is played by Jeremy Irons. The film is directed by Matthew Brown. Filming of this biopic began in August 2014 at Ramanujan's own alma mater Trinity College, Cambridge. The 46th International Film Festival of India was opened on Nov 20, 2015 with the Ramanujan biopic. Earlier in 2014 a Tamil biopic on the genius, Ramanujan, was directed by Gnana Rajasekaran.

Development of Mathematics in Early India

Flessy Sam (2nd BSc)

Indian mathematics as is known now is the mathematics emerged in the Indian subcontinent from 1200 BC until the end of 18th century. In the classical period of Indian mathematics (400 CE to 1600 CE) important contributions were made by scholars like, Aryabhata, Brahmagupta Mahavira, Bhaskara II, Madhava of Sangamagrama and NilakantaSomayaji. The decimal number system in use today was first recorded in Indian mathematics. India mathematics made early contributions to the study of the concept of zero as a number, negative numbers, arithmetic and algebra. These knowledge were transmitted to the Middle East, China and Europe and this led to further developments that now form the foundations of many areas of mathematics.

Book Review



In this book, bestselling author and physicist Stephen Hawking explores the "masterpieces" of mathematics and 25 landmarks spanning 2,500 years. It helps us in understanding the progression of mathematical thought, and the very foundations of our present-day technologies. Each chapter begins with a biography of the featured mathematician, clearly explaining the significance of the result, followed by the full proof of the work, reproduced from the original publication.

This book covers a wide range of mathematical topics which have been developed throughout history, in an accessible but rigorous way. It is admittedly more challenging than the average popular math title, but if you already have some mathematical basics mastered and are willing to work through it, you'll gain a lot of insight about the nature of mathematics and the discoveries made by the giants of math from this excellent book.

ABACUS

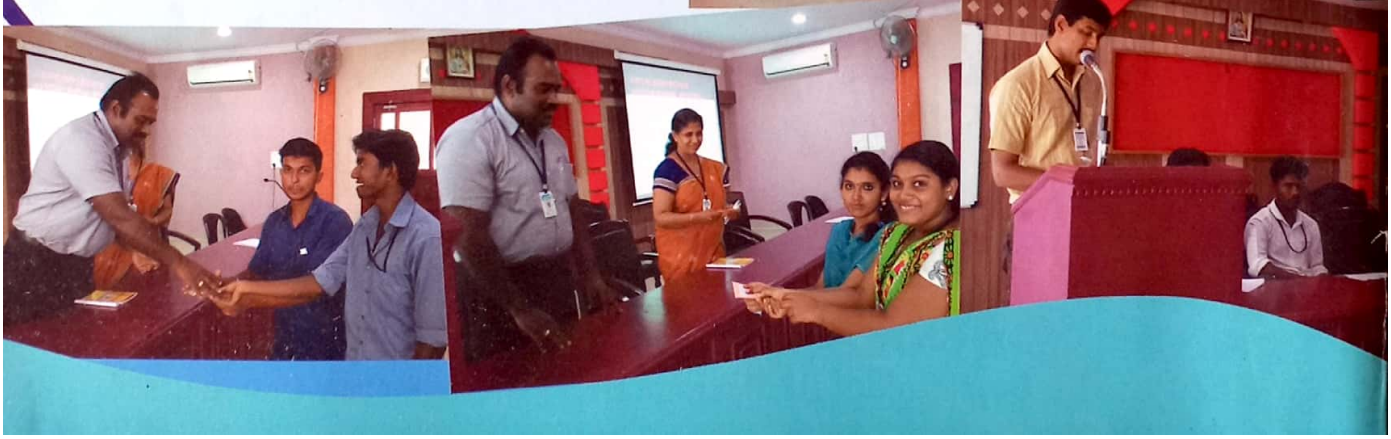
Abacus, is an ancient calculating device that provides children with valuable mental stimulation and proficiency in mathematics. Scientific analyses indicate abacus training can improve a child's ability to concentrate, visualize, memorize, observe, and process information.

But how can it accomplish all that, and much more? Our brain has two hemispheres, the left and the right brain. About 95% of our children use only the left brain, which provides the ability to analyze information concerning languages and sound. But the right side of the brain, which is focused on thinking, creativity and integration of information, needs to be used and stimulated as well. Learning to use the abacus can help develop this right brain/left brain integration.

Using the abacus, a child can do all arithmetic calculations up to 10 digits without relying on an electronic calculator. ABACUS which became a popular trend in countries like Japan and China, is fast catching up in India as well.

QUIZ COMPETITION

Mathematics Association conducted an inter-class quiz competition for UG students. Mr. Arjun H. and Mr. Abhijit S. of 3rd BSc secured first place. Ms. Christy Varghese and Ms. Anju Arjun of 3rd BSc and Mr. Jobin Varghese and Mr. Sai Krishna R. of 2nd BSc secured 2nd and 3rd places respectively.



Ms. Irene Mary Mathew Memorial Elocution Competition for +2 Students

This year too Mathematics Association and Debating Club jointly organized Ms. Irene Mary Mathew memorial elocution competition for higher secondary students of the nearby schools. Students from 11 schools participated in the event. Prof George Thomas, Head of the Department of Physics inaugurated the meeting. Master Naveen K. Jaisappan of Georgian Public School, Edathua bagged the first prize. Ms. Swetha Sara Babu of St. Aloysius HSS Edathua and Ms. Jencymol Joseph of St. Joseph's HSS, Pulincunnu received 2nd and 3rd prizes respectively. Principal Dr. Saban K.V. presented the cash award and certificates to the winners. The award is instituted by the parents of Ms. Irene Mary Mathew in memory of their daughter.

1947

Nithya S. (2nd BSc)

The importance of 1947 is not just that India got independence in that year. If abcd is a four digit number then the least 4 digit number which satisfy the rule ab + ac + ad+ bc + bd + cd = a^2+ b^2 + c^2 + d^2 is 1947

i.e., 1x9 + 1x4 + 1x7 + 9x4 + 9x7 + 4x7 = 1^2 + 9^2 + 4^2 + 7^2

Fascinating Number Relationships

Andia Noronha (1st BSc)

12,345,679 x 09 = 111,111,111
12,345,679 x 18 = 222,222,222
12,345,679 x 27 = 333,333,333
12,345,679 x 36 = 444,444,444
12,345,679 x 45 = 555,555,555
12,345,679 x 54 = 666,666,666
12,345,679 x 63 = 777,777,777
12,345,679 x 72 = 888,888,888
12,345,679 x 81 = 999,999,999

Narcissistic Number

Manupriya M. Pillai (1st BSc)

An n-digit number that is the sum of the n^{th}powers of its digits is called an n-narcissistic number. There are only 4 such 3 digit numbers. They are;

153 = 1^3 + 5^3 + 3^3
370 = 3^3 + 7^3 + 0^3
371 = 3^3 + 7^3 + 1^3
407 = 4^3 + 0^3 + 7^3

The outgoing undergraduate students were taken on a pleasure trip to Mysuru and Ooty in January 2016. 24 students participated in the tour programme. Prof. Deena C. Scaria and Prof. Jijo Joy accompanied the students.

2013-15 MSc students presenting a memento to Prof. Ancy Peter, head of the department

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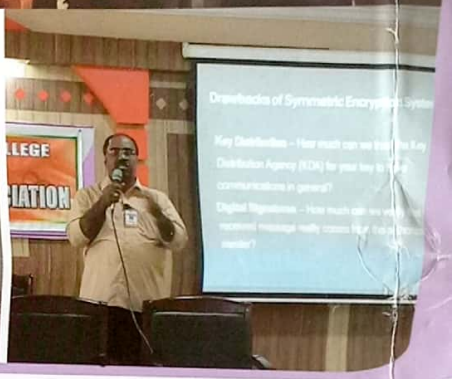
Mathematics Association Inauguration

Activities of the Mathematics Association for the year 2015-16 was inaugurated by Dr. Suresh Kumar, Asst. Professor of Mathematics, NSS Hindu College Changanacherry. Dr. Jubin Antony, the association president welcomed the guests. The meeting was presided over by Prof. Kochu Thresiamma Joseph. Miss Anju Arjun proposed the vote of thanks.

The inauguration was followed by his lecture on "Number Theory".



THE FIELDS MEDAL

Prof. KochuThressiamma Joseph

The Fields Medal is a prize awarded to two, three, or four mathematicians under 40 years of age at the International Congress of the International Mathematical Union (IMU), a meeting that takes place in every four years. The Fields Medal is viewed as the highest honor a mathematician can receive. The Fields Medal and the Abel Prize have often been described as the "Mathematician's Nobel Prize".

The prize comes with a monetary award of C$15,000 (in Canadian dollars). The colloquial name is in honour of the Canadian mathematician John Charles Fields. Fields was instrumental in establishing the award, designing the medal, and funding the prize money.

The medal was first awarded in 1936 to Finnish mathematician Lars Ahlfors and American mathematician Jesse Douglas. Its purpose is to give recognition and support to younger mathematical researchers who have made major contributions. Prof. Manjul Bhargava is the only Indian origin mathematician who received this prestigious award.

Ms. Anumol Thomas of 2012-15 BSc batch secured A+ in all papers. She is one among the 36 students who have secured A+ in all papers from all science streams in Mahatma Gandhi University. Although now University does not officially announce ranks, her's is the one among top 5 ranks in Mathematics in MG University.

Teachers Day Celebration

BEYOND THE CLASSROOM

Our boys have bagged first prize and girls got second place in the interdepartmental cricket tournament. Congratulations to the winners!