MATHEMATICAL OLYMPIAD
&
OTHER SCHOLARSHIP, RESEARCH PROGRAMMES

INFORMATION BROCHURE

2011-2012

ॐ पूर्णमदः पूर्णमिदम
पूर्णात् पूर्णमुदच्यते
पूर्णस्य पूर्णमादाय
पूर्णमेवावशिष्यते ।
ॐ शान्तिः शान्तिः शान्तिः ।

(ईशावास्योपनिषद)

यथा शिखा मयूराणां नागानां मणयो यथा ।
तद्वद्वेदाङ्गशास्त्राणां गणितं मूर्धनि स्थितम् ॥

Like the crest of a peacock and the head-jewel of the cobra, so does Mathematics stand at the top of the Vedic Sciences.

-Vedanga Jyotisha of Lagadha (ca 1400 BC)

Don't take a course of action that is dangerous and don't make the same mistake twice. Don't be too sure of yourself even when the way looks easy. Always watch where you are going. Whatever you do be careful..

-Holy Bible 32:20 (SIRACH)

DEPARTMENT OF MATHEMATICS
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
COCHIN - 682 022

The erstwhile University of Cochin founded in 1971 was reorganised and converted into a full fledged University of Science and Technology in 1986 for the promotion of Graduate and Post Graduate studies and advanced research in Applied Sciences, Technology, Commerce, Management and Social Sciences.

The combined Department of Mathematics and Statistics came into existence in 1976, which was bifurcated to form the Department of Mathematics in 1996. Apart from offering M.Sc, and M. Phil. degree courses in Mathematics it has active research programmes in Operations Research, Stochastic Control Theory, Graph Theory, Wavelet Analysis and Operator Theory.

The Department has been coordinating the Mathematical olympiad - a talent search programme for high school students since 1990. It also organizes Mathematics Enrichment Programmes for students and teachers to promote the cause of Mathematics and attract young minds to choose a career in Mathematics.

The Department also organized the International Conference on Recent Trends in Graph Theory and Combinatorics as a Satellite Conference of the International Congress of Mathematicians (ICM) during August 2010.

"Tejasvinavadhithamastu"

May learning illumine us both,
The teacher and the taught.

PREFACE

This brochure contains information on various talent search and research programmes in basic sciences in general and mathematics in particular and is meant for the students of X^{th} standard and above. It will give an exposure to the very many avenues available to those who enjoy the beauty of science and have the real potential to be an academic and a researcher. The Government of India through the Departments of Science and Technology, Human Resource Development, Atomic Energy and many other non govermental organizations also have launched several innovative programmes such as science olympiads, KVPY etc. to spot and nurture scientific talents in the country. We have compiled some of these information and it is hoped that it will be a source of inspiration for the students to choose a career in science and mathematics-the mother of all knowledge and the queen of all sciences.

A. VIJAYAKUMAR

"When, however, with much effort I reached the thirteenth proposition of Euclid, the utter simplicity of the subject was suddenly revealed to me. A subject which only required a pure and simple use of one's reasoning powers could not be difficult. Ever since that time, Geometry has been both easy and interesting for me".

Extracted from - The Story of My Experiments with Truth - Mahatma Gandhi

MATHEMATICAL OLYMPIAD
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OTHER SCHOLARSHIP, RESEARCH PROGRAMMES

Letter by Ramanujan

Madras

5th Aug. 1913.

From S. Ramanujan, Scholarshipholder in Mathematics.

To The Board of Studies in Mathematics.

Through The Registrar, University of Madras.

Gentlemen,

With reference to para. 2 of the University Registrar's letter no. 1631 dated the 9th April, 1913, I beg to submit herewith my quarterly Progress Report for the quarter ended the 31st July, 1913.

The Progress Report is merely the exposition of a new theorem I have discovered in Integral Calculus. At present there are many definite integrals the values of which we know to be finite but still not possible of evaluation by the present known methods. This theorem will be an instrument by which at least some of the definite integrals whose values are at present not known can be evaluated. For instance, The integral treated in Ex.(v) note Art. 5 in the paper, Mr. G. H. Hardy, M.A., F.R.S., of Trinity College, Cambridge, considers to be "new and interesting" Similarly the integral connected with the Bessel's

[22A]

Function of the n^{th} order which at present requires many complicated manipulations to evaluate can be readily inferred from the theorem given in the paper. I have also utilised this theorem in definite integrals for the expansion of functions which can now be ordinarily done by Lagrange's, Bürmann's, or Abel's theorems. For instance, the expansions marked as examples nos. (3) and (4) Art. 6, in the second part of the paper.

The investigations I have made on the basis of this theorem are not all contained in the attached paper. There is ample scope for new and interesting results out of this theorem. This paper may be considered the first instalment of the results I have got out of the theorem. Other new results based on the theorem I shall communicate in my later reports.

I beg to submit this, my maiden attempt, and I humbly request that the Members of the Board will make allowance for any defect which they may notice to my want of usual training which is now undergone by College Students and view sympathetically my humble effort in the attached paper.

I beg to remain,
Gentlemen,
Your obedient servant,
S. Ramanujan.

"If your heart acquires strength, you will be able to remove blemishes from others without thinking evil of them."

-Mahatma Gandhi

- **Science explores the greatest unknown**, and what we know is always less than what remains to be discovered. This communal exploration is driven by intellectual curiosity but it has immense potential to benefit mankind. **We depend on the youth of today to carry forward the torch and illuminate the future.**

  Sir Michael Atiyah, Abel Laureate, 2004 in **One hundred Reasons to be a Scientist, ICTP, 2005**.

- A paradox of our times is that, while our societies have come to depend on technological advances as never before, **the interest in basic sciences is diminishing at all levels**. Particularly distressing is the lukewarm interest shown towards sciences by the brightest students at the high school level.

  K R Sreenivasan, Director, Abdus Salam ICTP, Trieste, Italy in '**One hundred Reasons to be a Scientist', ICTP, 2005**.

- We are witnessing a growing tendency among talented students to pursue studies in areas other than mathematics and basic sciences. To realize our vision of India as a knowledge society, it is essential to build a strong foundation to basic sciences by attracting a large number of talented students to this stream.

- Sam Pitroda, Chairman, NKC
  In 'Attracting talented students to Maths and Science '- NKC Report, May 2008.

  If you don't focus on basic science, there will be nothing to apply – Aaron Ciechanover, Israeli Nobel Laureate.on the occasion of ISC annual conference 2007.

NATIONAL BOARD FOR HIGHER MATHEMATICS (NBHM)

This is a unit of the Department of Atomic Energy, Govt. of India which funds various academic programmes related to Mathematics.

Scholarships for post graduate studies in Mathematics :

NBHM awards scholarships for pursuing studies for MSc degree in Mathematics. Final year BSc students and those who have joined for MSc degree course are eligible to apply. Selection is based on a written test usually held in September at several centres in India including **Cochin**, followed by an interview. The present scholarship amount is Rs. 4000/- per month.

Research awards for PhD in Mathematics:

These awards are meant for motivated students with a MSc degree in Mathematics. Selection is made on the basis of a written test usually held in May followed by interviews. The scholarship amount is Rs. 8000/ per month.

It also provides financial assistance for organising seminars, workshops and for the development of libraries.

The present Chairman of NBHM is **Prof. R. Balasubramanian, Director, The Institute of Mathematical Science, Chennai-600113**

Contact:

Member Secretary
NBHM
Department of Atomic Energy
Anusakthi Bhavan, CSM Marg, Mumbai-400 039
E-mail: nbhm@math.tifr.res.in / msnbhm@dae.gov.in, Ph: 022-22022533 (O)
Website: www.nbhm.dae.gov.in

1. MATHEMATICAL OLYMPIAD:

'Mathematical Olympiad' is a talent search programme of international significance for students who have not entered a university. In India this is organised by the **National Board for Higher Mathematics (NBHM),** since 1988. This is conducted in three stages, the **Regional Mathematical Olympiad (RMO)** usually held during October-December in 18 regions, the **Indian National Mathematical Olympiad (INMO)** held in February and then an **International Mathematical Olympiad (IMO)** Training Camp in May-June, from where a six-member team is selected to represent India in the IMO, held in July in different countries. Academic coordination is mainly done by the MO Cell in the Department of Mathematics, IISc, Bangalore.

IMO started in 1959 in Romania with the participation from just 7 countries. Even though the IMO is of comparatively recent origin, National Mathematical Olympiads have a long history. It was Hungary, which in the year 1894 started what is known as Eotvos Mathematical Competition. Though during the first few years the IMO was confined to the countries like Poland, Russia and Bulgaria, other western countries also started to participate during sixties. At present this mega event of the mind has a truly international character and has a participation from more than 80 countries. The questions asked in the olympiads are really challenging and it measures the student's capacity for original and critical thinking.

The performance of Indian team in IMO

Year	Host Country	No. of Medals	Rank (Unofficial)	No. of Countries
1989	Germany	4 Bronze	25	50
1990	China	1 Gold, 1 Silver, 2 Bronze	17	54
1991	Sweden	3 Silver, 3 Bronze	10	56
1992	U.S.S.R.	1 Silver, 4 Bronze	22	60
1993	Turkey	4 Silver, 1 Bronze	15	73
1994	Hong Kong	3 Silver, 3 Bronze	16	69
1995	Canada	3 Silver, 3 Bronze	14	73
1996	India	1 Gold, 3 Silver, 1 Bronze	14	75
1997	Argentina	3 Silver, 3 Bronze	15	82
1998	Taiwan	3 Gold, 3 Silver	10	79
1999	Romania	3 Silver, 3 Bronze	17	79
2000	South Korea	5 Silver, 1 Bronze	14	82
2001	United States	2 Gold, 2 Silver, 2 Bronze	7	83
2002	United Kingdom	1 Gold, 3 Silver, 2 Bronze	9	84
2003	Japan	4 Silver, 1 Bronze	15	82
2004	Greece	4 Silver, 2 Bronze	14	85
2005	Mexico	1 Silver, 1 Bronze	32	92
2006	Slovenia	5 Bronze	35	90
2007	Vietnam	3 Silver	25	94
2008	Spain	5 Bronze	31	97
2009	Germany	3 Silver, 2 Bronze	28	108
2010	Kazakhstan	2 Silver, 1 Bronze	36	96
2011	Holland	1 Gold, 1 Silver, 2 Bronze		
2012	Argentina			

The present **National Coordinator** is,

Prof. S. S. Sane
Dept. of Mathematics
Indian Institute of Technology
Powai, Mumbai-400 076
(022) 2652 6490 (R)
E-mail: sharadsane@gmail.com

REGIONAL MATHEMATICAL OLYMPIAD (R.M.O.): RMO-2011 will be held on **Sunday, 4th December**, between 1 p.m. and 4 p.m. at **Trivandrum, Quilon, Kottayam, Kottarakkara, Alleppey, Ernakulam, Trichur, Irinjalakkuda, Palghat, Calicut, Malappuram, Cannanore and Kasaragod. Proposals for new centres will be considered.**

In Kerala, this event is being coordinated since 1990. **Students of class XI / XII and few exceptionally talented students of class X are eligible to appear. There is no prescribed syllabus.** But questions are usually from Algebra, Geometry, Number Theory and Combinatorics and will be of exceptionally high level in difficulty and sophistication. **For old question papers contact the Joint coordinator / Regional coordinator or down load from www.hbcse.tifr.res.in/olympiads.**

INDIAN NATIONAL MATHEMATICAL OLYMPIAD (I.N.M.O.) : About 20 students (maximum of 6 from class XII) will be selected for INMO, to be held in January 2012 at Cochin University Campus.

INTERNATIONAL MATHEMATICAL OLYMPIAD (I.M.O.) : About 30 toppers of INMO-INMO Awardees - will be invited for a training camp to be held in May 2012 to select an Indian team for IMO-2012.

PRIZES, SCHOLARSHIPS AND FOLLOWUP PROGRAMMES:

- **Five toppers of RMO** will be awarded a cash prize of Rs. 2000/- each, sponsored by the **Kerala State Council for Science, Technology and Enviornment (KSCSTE),** Government of Kerala.
- **Five toppers** of RMO will be awarded **Professor C.S. Venkataraman Memorial Prizes and many other attractive prizes.**
- All students selected for INMO will be given merit certificates.
- INMO awardees are eligible for NBHM scholarships for higher studies.

HOW TO APPLY: There is no prescribed application form. Principals of Government recognised schools shall forward the list of participants indicating their names, class, residential address, and the centre along with a registration fee of Rs. 30/- each by Cash / M.O. or D.D. (drawn in favour of Regional Co-ordinator, INMO) payable at SBT CUSAT Campus Branch only.

Applications endorsed by the authorities should be sent to the Joint Coordinator

LAST DATE: 25th October 2011.

This programme is funded by the **NBHM, CUSAT** and **KSCSTE.**

2. HOMI BHABHA CENTRE FOR SCIENCE EDUCATION (HBCSE)

Homi Bhabha Centre for Science Education (HBCSE) is a National Centre of the Tata Institute of Fundamental Research, Mumbai. The broad goals of the Centre are to promote equity and excellence in science and mathematics education from primary school to undergraduate college level, and encourage the growth of scientific literacy in the country. To these ends it carries out a wide spectrum of inter-related activities, which may be viewed under three broad categories: (a) Research and Development, (b) Teacher Orientation and Science Popularisation, and (c) Olympiads and other Students' Nurture Programmes. **It is India's nodal centre for Olympiad programmes in Mathematics, Physics, Chemistry, Biology and Astronomy.**

Contact:

The Director
HBCSE
V. N. Purav Marg, Mumbai-400088
Website : www.hbcse.tifr.res.in

For National Science Olympiad

Contact : Prof. M.L. Ogalapurkar
IAPT Office, IIE Campus, 128/2
J.P. Naik Marg, Kothrud, Pune-411038
(Tel: 020-25420163) E-mail: iapt@vsnl.net

The Indian National Olympiad in Informatics (INOI) is a nationwide competition organized annually by Indian Association for Research in Computer Science in coordination with CBSE. The goal of the competition is to identify school students with outstanding skills in algorithms and computer programming.

Website: www.iarcs.org.in/inoi

The **Astronomy Olympiad** is coordinated in Kerala by Nehru Science Centre, Calicut.
Website: www.rscpcalicut.8m.com

3. KISHORE VAIGYANIK PROTSAHAN YOJANA (KVPY)

KVPY is a programme initiated by the Department of Science and Technology (DST), Government of India to encourage highly motivated students of Basic Sciences (Mathematics, Physics, Chemistry and Biology), Engineering and Medicine to take up careers in research in these areas. This programme hopes not only to assist the students to realise their potential, but also ensure that the best scientific talent is tapped for research and development in the country. Scholarship ranging from Rs. 4000 - Rs. 7000 per month will be provided (up to the Pre - Ph.D level) to the selected students. In addition to fellowships, KVPY fellows will have access to facilities in research Institutions and attend summer camps.

Entry points for Basic Sciences are, students completing X standard, students joining / completing I year B.Sc degree course in any subject. Detailed advertisement

inviting applications for these scholarship will appear in all important dailies on the National Science Day (28th February) and the National Technology day (11th May) every year. Usually aptitude tests are held at various centres all over India including **Cochin**, in November.

Contact:

Convener
KVPY, Indian Institute of Science
Bangalore - 560 012. **Website : iisc.ernet.in / kvpy**

4. MATHEMATICS TRAINING AND TALENT SEARCH (MT & TS)

The aim of this programme is to expose bright students to the excitements of doing mathematics and to promote independent mathematical thinking. This is organised at three levels.

Level O	:	Second year undergraduate (B.Sc./B.Stat./B.Tech etc) students with Mathematics as one of their subjects.
Level I	:	Final Year undergraduate students with Mathematics as one of their subjects.
Level II	:	First year postgraduate students with Mathematics main.

This programme is conducted at different centres in India during May-June, since 1993 and is funded by the NBHM.

Contact:
Prof. S. Kumaresan
Programme Director, MTTS
Dept. of Mathematics and Statistics
University of Hyderabad
Gachibowli, Central University P.O.
Hyderabad - 500 046, India.
Email: kumaresa@gmail.com
Home page: http://mathstat.uohyd.ernet.in/faculty/kumaresan/

5. THE NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING (NCERT)

NATIONAL TALENT SEARCH SCHEME

The National Council of Educational Research and Training (NCERT) was established by the Government of India in the year 1961 with a view to bringing about qualitative improvement in school education in the country. National Talent Search Scheme (NTSS) is open to the students of Classes X, XI and XII. There will be two objective type written tests, the Mental Ability Test (MAT) and the Scholastic Aptitude Test (SAT). All students studying in Class X in any type of recognized school including Kendriya Vidyalaya, Navodaya Vidyalaya, Sainik School etc. will be eligible to appear at the State Level Examination conducted by SCERT. The second level test is conducted by NCERT.

SCERT is concerned with the academic aspects of school education including formulation of curriculum, preparation of textbooks, teachers' handbooks and teacher training. It advises the Government on policy matters relating to school education . SCERT (Kerala) functions as an R&D institute at the state level by providing guidance, support and assistance to the State Education Department in its endeavor to improve the quality of elementary, secondary and teacher education.

Contact :

Director
State Council of Educational Research & Training (SCERT)
(Vidyabhavan), Poojappura PO
Thiruvananthapuram, PIN: 695 012
Phone: 0471-2341883 / 2340323
e mail : scertkerala@asianetindia.com

6. Kerala State Council for Science, Technology and Environment (KSCSTE)

The Kerala State Council for Science, Technology and Environment (KSCSTE) was constituted as an autonomous body under the Science, Technology and Environment Department, Government of Kerala in November 2002. With the formation of the KSCSTE,all the functions and responsibilities of the erstwhile State Committee on Science, Technology and Environment are being undertaken by the new Council.

KSCSTE will outline supplementary programmes and policies with special reference to the natural endowments, geographic features and unique socio-economic situations of the State. Also responsible for the promotion of administrative autonomy for the State owned Research Laboratories and Research Institutions, with a view to making research efforts free from administrative procedures and ensure that they are directed only by those who understand their importance and significance.

The key strategy of the Council is to identify programmes in focussed areas and target groups to ensure the maximum benefits to the Society. Some of the main programmes currently available are

- KSCSTE Research Fellowship
- Sastraposhini
- Science Research Scheme
- Student Projects and Young Scientist Awards.

Contact:

Director
KSCSTE
Sastra Bhavan
Pattom, Thiruvananthapuram-695004 **Website: www.kscste.org**

7. Homi Bhabha National Institute **Website: www.hbni.ac.in/**

The Homi Bhabha National Institute (Hbni) established in 2005 is a presitigious Indian deemed university, which unifies ten Constituent Institution (CIs) : 4 premier centers and 6 premier autonomous institutes, each with a well established history of excellence, under a single research-driven framework. It is name after the late Indian physicist Homi J. Bhabha.

R & D Centres

Bhabha Atomic Research Centre, Mumbai
Indira Gandhi Centre for Atomic Research, Kalpakkam, Chennai
Raja Ramanna Centre for Advanced Technology, Indore
Variable Energy Cyclotron Centre, Kolkata

Institutes

Saha Institute of Nuclear Physics, Kolkata
Institute for Plasma Research, Gandhinagar
Harishchandra Research Institute, Allahabad
Tata Memorial Centre, Mumbai
Institute of Mathematical Sciences, Chennai
Institute of Physics, Bhubaneshwar

8. <u>INDIA MATH EDUCATION NETWORK</u>

This is a major network aimed to connect mathematicians, mathematics educators, teachers (all levels), students and all math enthusiastics, to exchange views on mathematics teaching, announce mathematical activities, initiate group discussions etc.

Contact: **Website : http://india-men.ning.com**

Prof. I. K. Rana
Department of Mathematics
I.I.T., Powai, Mumbai-400076
E-mail: ikrana@iitb.ac.in
Ph: 022 25767462

9. <u>ASSOCIATION OF MATHEMATICS TEACHERS OF INDIA (AMTI)</u>

This association was started in 1965 for promotion of efforts to improve Mathematics education at all levels. Its major aims are to assist school teachers to improve their expert and professional skills, spot and foster mathematical talents, organise orientation courses, summer courses and workshops for teachers and talented students. A national conference is held annually in different parts of the country for teachers to meet and deliberate on important issues of mathematics education. It also holds “Inter State Mathematical Talent Search Competition” annually.

"The Mathematics Teacher" is the official journal of the AMTI. For details and membership of the association.

Contact:

Secretary
AMTI, B 19, Vijay Avenue
37, V.R. Pillai Street
Triplicane. Chennai - 600 005 **e-mail: amti@vsnl.com**
sarodev@vsnl.com

10. KERALA MATHEMATICS TEACHERS ASSOCIATION (KMTA)

KMTA was formed in 2001 for the benefit of school students and teachers. It is a forum, for discussing all aspects of Mathematics Education, to help and foster mathematics clubs for students and offer guidance to choose a career in mathematics. It will also organise workshops, orientation programmes and seminars on all aspects of mathematics in different parts of the state. For membership and other details-

R Ramanujan (Mob: 9447237113)

11. SOME RESEARCH INSTITUTES IN MATHEMATICS:

a) **Tata Institute of Fundamental Research (TIFR)**

TIFR, the National Centre of the Government of India for Nuclear Science & Mathematics was founded in 1945. It has now three major schools: The School of Mathematics, The School of Natural Sciences and The School of Technology and Computer Science. Research in frontier areas of these disciplines are carried out by these schools. TIFR has three national centres: National Centre for Radio Astrophysics, Pune; Homi Bhabha Centre for Science Education, Mumbai; National Centre for Biological Sciences, Bangalore. The School of Mathematics has a research Centre at the Indian Institute of Science, Bangalore. The institute has acquired the status of a Deemed University in 2002.

Contact:

Chairman
School of Mathematics
T.I.F.R., Homi Bhabha Road
Mumbai - 400 005 **Website: http://www.tifr.res.in**

b) **The Institute of Mathematical Sciences (IMSc)**

IMSc is a National Institute of higher learning, devoted to fundamental research in the frontier areas of mathematical sciences. The three major groups of research areas are Mathematics, Theoretical Physics and Theoretical Computer Science. The institute which is an autonomous body is funded by the Department of Atomic Energy and the Govt. of Tamil Nadu.

Contact:

Director
IMSc
CIT Campus, Taramani, Chennai - 600 113 **Website: http://www.imsc.ernet.in**

c) **Indian Statistical Institute (ISI)**

ISI is a unique institution devoted to research, teaching and application of statistics, natural sciences and social sciences. Founded by Prof. P.C. Mahalanobis in Calcultta in 1931, the institute gained the status of an Institution of National Importance in 1959. The Institute has a 3 year B-Stat (Hons), M.Stat, M.Math. and M.Tech Courses.

Contact:

Director
ISI, 203, B.T. Road
Calcutta - 700 108 **Website: http://www.isical.ac.in**

ISI Bangalore Centre has started a 3 year B.Math (Hons.) Programme from the year 2000. The selection is through a written test at various centres all over India followed by an interview. The B.Math programme includes some courses on Computer Science, Physics etc. which will enable the students to take up these fields later if they so desire. It also offers a Master of Statistics (M.Stat) course and also an M. Math Course since 2003. This centre has active research groups in many areas of mathematics and statistics.

Contact:

Head
ISI, Bangalore Centre
8th Mile, Mysore Road,
R.V. College P.O.
Bangalore - 560 059 **Website: http://www.isibang.ac.in**

ISI, Delhi centre has an M.Stat Programme and active research groups in Mathematics, Operations Research and Theoretical Statistics.

Contact:

Head
ISI
7, S.J.S. Sansanwal Marg
New Delhi - 110 016 **Website: http://www.isid.ac.in**

d) **Harish Chandra Research Institute (HRI)**

The Harish-Chandra Research Institute (HRI) is an institution dedicated to research in mathematics, and in theoretical physics. It is located in Allahabad, India, and is funded by the Department of Atomic Energy, Government of India.

HRI conducts a regular PhD. as well an integrated M.Sc.PhD. program in mathematics, in collaboration with Homi Bhaba National Institute (HBNI) and the University of Allahabad. The regular PhD. program is open to students with an M.Sc. degree in mathematics, while the integrated program is open to candidates with a bachelor's degree in science or engineering. The regular program consists of course work and projects for the first four semesters, followed by research work leading to a PhD. degree.

Contact:

Director
Harish - Chandra Research Institute
Chattnag Road, Jhunsi
Allahabad - 211 019, India
Phone : +91 (532) 2569 509, 2569 578, 2569 318
Fax : +91 (532) 2567 748, 2567 444

e) **Indian Institute of Science (IISc.)**

IISc is a premier institution founded in 1909 for research and advanced instruction in almost all frontier areas of Science and Technology and has a very high international standing in the academic world.

It has integrated Ph.D Programmes in all areas of Basic Sciences.

The Department of Mathematics has research groups in many areas of pure and applied Mathematics.

Contact:

Chairman
Dept. of Mathematics
I.I.Sc., Bangalore - 560 012 **Website: http://www.iisc.ernet.in**

(f) Chennai Mathematical Institute (CMI)

Chennai Mathematical Institute is a centre of excellence for teaching and research in the mathematical sciences. Founded in 1989 as part of the SPIC Science Foundation, it has been an autonomous institute since 1996.

The research groups in Mathematics and Computer Science at CMI are among the best known in the country. The Institute has nurtured an impressive collection of PhD students.

In 1998, CMI took the initiative to bridge the gap between teaching and research in India by starting BSc and MSc programmes in Mathematics and allied subjects. Students who have graduated from CMI have gone on to join leading institutions throughout the world.

CMI occupies a unique position in Indian academia, attracting substantial funding from both corporate and government sources. In 2006, CMI was recognized by the Government of India as a University under Section 3 of the UGC Act, 1956.

Contact:

The Director, Chennai Mathematical Institute
Plot H1, SIPCOT IT Park
Padur P.O., Siruseri - 603103
Website: www.cmi.ac.in (Phone : 044-32983441)

g) The Kerala School of Mathematics (KSM) Calicut

The Kerala School of Mathematics (KSM) is a new R&D institution established as a joint venture of KSCSTE and Department of Atomic Energy (DAE) at Kunnamangalam, Kozhikode, with the objective of promoting quality education and research in mathematical sciences in the country and in particular in Kerala. The School aims at adapting the best practices followed in prestigious international institutions in the field of Mathematics. The School will also initiate and organise academic and research activities based on the models of International centres for Theoretical Physics and Mathematics.

Contact:

The Director
Kerala School of Mathematics
Kunnamangalam P.O., Calicut-673571

12. INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH (IISER)

An exciting opportunity in science for inquisitive young minds.

Scientific and technological innovations are the key drivers for growth and economic prosperity of a nation. In the 21st century, as basic and applied sciences converge, there is an immediate need to train competent researchers. Towards this, the Ministry of Human Resource Development (MHRD), Government of India has set up 5 Indian Institutes of Science Education and Research (IISER) at **Bhopal, Kolkata, Mohali, Pune and Thiruvananthapuram.**

IISER will be devoted to teaching of 5-year integrated Masters and post-bachelors and post-Masters Ph.D. programmes in integrative sciences in an intellectually vibrant atmosphere of research. One of the objectives of IISER is to make education and career in basic sciences more attractive by providing opportunities in integrated learning of sciences and break the barriers of traditional disciplines. Therefore, IISER will promote a flexible and borderless curriculum in all disciplines of basic sciences. Consequently, all students of the integrated Master's programme will be required to take courses in Mathematics, Physics, Chemistry and Biology for the first two years of the curriculum.

13. NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH (NISER)

The National Institute of Science Education and Research (NISER) is envisioned to be a unique institution of its kind in India. **It is the first institution of its kind set up by the Department of Atomic Energy.** It will strive to be recognized as a centre of excellence in science education and research in four basic sciences viz. Biology, Chemistry, Mathematics and Physics. At a later stage activities will expand to include Earth and Planetary sciences, Engineering sciences and Computer science.

With a flexible borderless curriculum, NISER aims to impart high quality science education with a vibrant academic ambience. Exemplary teaching and research attributes of its faculty is expected to inspire strongly motivated bright young students to dedicate their lives for scientific research. Every student will be introduced to the excitements in the frontier of knowledge in other branches of fundamental science.

NISER is affiliated to the **Homi Bhabha National Institute** (HBNI), a Deemed University within the DAE umbrella.

Contact :

Director

National Institute of Science Education & Research
Institute of Physics
Sachivalaya Marg
Bhubaneswar - 751 005, Orissa.

Tel:0674-2301058

14. SOME WEB RESOURCES IN MATHEMATICS

1. http://www.math.duke.edu/education/ccp/index.html
2. http://mathforum.org/
3. http://wise.cgu.edu.
4. http://archives.math.utk.edu/visual.calculus/
5. http://www.history.mcs.st-andrews.ac.uk/history/mathematics
6. http://www.ams.org/employment/highschool **(Attention High School Students and Teachers)**
7. http://www.mathworld.wolfram.com
8. www.mathcounts.org
9. www.artofproblemsolving.com
10. Joyofpi.com
11 www.sitesforteachers.com
12. lii.org
13. www.cut-the-knot.org
14. www.paperfolding.com
15. www.mathlinks.robtw

15. LIST OF BOOKS FOR MATH. OLYMPIADS:

1.	Klamkin, M.S.	U.S.A. Maths Olympiad, 1972 - 1986
2.	Yaglom, I.M.	The USSR Olympiad Problem Book (Dover)
3.	Sierpenski W.	250 Problems in Elementary Number Theory (Elsevier)
4.	Niven & Zukerman	An Introduction to the theory of Numbers (Wiley)
5.	Coxeter, H.S.M.	Geometry Revisited (MAA)
6.	Larson, L.C.	Problem Solving through Problems (Springer)
7.	Bottema. O.	Geometric Inequalities (MAA)

8.	V. Krishnamoorthy etal.	Challenges and thrill of Precollege Mathematics (New Age Publ.)
9.	Pranesachar C.R.	Mathematical challenges from Olympiads. (Interline Publ)
10.	Lozansky E., Rousseau, C	Winning Solutions (Springer)
11.	M.K. Singal, A.R. Singal	Olympiad Mathematics (Pitambar Publ.)
12.	S.A. Katre	An excursion in Mathematics
13.	V. Seshan	Mastering Olympiad Mathematics (Frank Brothers)
14.	Engel A.	Problem Solving Strategies (Springer)
15.	Shirali S. A	First steps in Number Theory (Universities Press)
16.	Shirali S.A.	Adventures in Problem Solving '' ''
17.	Steven G. Krantz	Techniques of Problem Solving '' ''
18.	Titu Andreescu & Razvan Gelca;	Mathematical Olympiad Challenges (Universities Press)
19.	Burton	Elementary Number Theory (UBS)
20.	Venkatachala B. J.	Functional Equations. A problem solving approach
21.	Durrell C. V.	Geometry
22.	Bonnie Averback and Oria Chein	Problem solving through recreational Mathematics (Dover)
23.	Alfred Posamentiar and Charles T. Salkind	Challenging Problems in Geometry (Dover)
24.	Beiler A.H.	Recreations in the theory of numbers (Dover)
25.	A Gardiner	The Mathematical Olympiad Hand book OUP (2000)
26.	T. Andreesan R. Gelca	Mathematical Olympiad Challenges Birkhauser (2000)
27.	S. Muralidharan G.R. Vijayakumar	Gems from the Mathematics Teacher, AMTI (1997)
28.	V.K. Krishnan (Ed.)	Non-routine problems in Mathematics, AMTI (2000)
29.	R. Roy Choudhary	501 Difficult problems in Mathematics, BM Pub (2000)
30.	T. Andreescu	Mathematical Olympiad Treasures, Birkhauser (2004)
31.	Bernard and Child	Higher Algebra (Mc Millan)
32.	Stein haus	One Hundred Problems in Elementary Mathematics (Dover)
33.	Eves H.	College Geometry (Narosa) (1995)
34.	Williams K.S.; Hardy, K	The red book of mathematical problems (Dover)
35.	I. Reiman	International Mathematics Olympiad Vol. I-III (Anthem Press)
36.	Tao T.	Solving Mathematical Problems, OUP (2008)

All these books are with the Regional Co-ordinator for reference and are also available in leading bookstalls.

16. International Congress of Mathematicians-Fields Medal, Nevanlinna Prize, Gauss Prize and Chern Medal

The **International Congress of Mathematicians** (ICM) is the largest congress in the mathematics community. It is held once every four years under the auspices of the International Mathematical Union (IMU). **ICM-2010 was held at Hyderabad, India during 19-27, August 2010. (www.icm 2010.in)**

During the congress, the **Fields Medal**, the **Nevanlinna prize and Gauss Prize**, are awarded. The Fields Medal recognizes outstanding mathematical achievement and is popularly known as the Nobel Prize in Mathematics. The Rolf Nevanlinna Prize honors distinguished achievements in mathematical aspects of information science. The Carl Friedrich Gauss Prize is awarded for outstanding mathematical contributions that have found significant applications outside of mathematics. The Fields Medal was first awarded in 1936, the Rolf Nevanlinna Prize in 1982. The Gauss Prize was awarded for the first time to Kiyoshi Itô of Kyoto University, Japan in 2006. A new international mathematics medal named after Prof. S.S. Chern was awarded in ICM 2010 to L. Nirenberg of Courant Institute.

At the 1900 congress in Paris, David Hilbert announced his famous list of 23 open problems in mathematics, now called Hilbert's problems. At the 1912 congress in Cambridge, Edmund Landau listed four basic problems about primes, now called Landau's problems. The 1924 congress at Toronto was organized by John Charles Fields.

17. International Commission on Mathematical Instruction

(a) The International Commission on Mathematical Instruction, ICMI, was first established at the International Congress of Mathematicians held in Rome in 1908, on the suggestion of the American mathematician and historian of mathematics David Eugene Smith. The International Commission on Mathematical Instruction (ICMI) has decided in 2000 to create two prizes recognizing *outstanding achievement in mathematics education research*:

- the **Felix Klein Award**, named for the first president of ICMI (1908-1920), honours a lifetime achievement.
- the **Hans Freudenthal Award**, named for the eighth president of ICMI (1967-1970), recognizes a major cumulative program of research.

The Kenneth O. May Prize instituted by The International Commission on the History of Mathematics (ICHM) was awarded to Prof. R. C. Gupta during ICM-2010

(b) **International Congress on Mathematics Education (ICME)-2012**

To discuss the current status and trends in mathematics education research and in the practice of mathematics teaching at all levels, the International Commission on Mathematical Instruction (ICMI), a constituent of the International Mathematical Union (IMU) has been organizing the International Congress on Mathematics Education (ICME), every four years. The Congress will gather a broad spectrum of participants such as researchers in mathematics education, teacher educators, practicing teachers, mathematicians and others interested in mathematics education.

One of the important academic activities of ICME is National Presentation; during which the representatives of a particular country will make a presentation on the current status and trends in mathematics education in that country**. India will make one of the National Presentations in the ICME -12 scheduled to be held at Seoul , South Korea during 8 – 15, July 2012.**

For details see **: www.icme12.org** or contact :

K. Subramaniam
Homi Bhabha Centre for Science Education
Tata Institute of Fundamental Research
Mumbai, India
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R. Ramanujan
IMSc
Taramani
Chennai - 600113

A National Initiative on Mathematics Education (NIME-2011) – Southern Regional Conference is scheduled to be held at Cochin from 11-13 November 2011. Teachers, math educators and all math lovers are encouraged to participate in this conference.

For details contact : K . Suresh (kuttath.suresh@ yahoo.com ; 09447767496)

18. List of Fields Medalists and venue of ICM

Year	Venue	Medalists
2014	**Seoul, S. Korea**	
2010	Hyderabad, India	E. Lindenstrauss (Jerusalem), Ngo Bau Chau (Vietnam), S. Smirnov (Russia), Cedric Villani (France)
2006	Madrid, Spain	Andrei Okounkov (Russia), Grigori Perelman (Russia) (declined), Terence Tao (Australia), Wendelin Werner (France)
2002	Beijing, China	Laurent Lafforgue (France) Vladimir Voevodsky (Russia/US)
1998	Berlin, Germany	Richard Ewen Borcherds (GB) William Timothy Gowers (GB) Maxim Kontsevich (Russia) Curtis T. Mcmullen (US)
1994	Zurich, Switzerland	Efim Isakovich Zelmanov (Russia) Pierre-Louis Lions (France) Jean Bourgain (Belgium) Jean-Christophe Yaccoz (France)
1990	Kyoto, Japan	Vladimir Drinfeld (USSR) Vaughan Frederick Randal Jones (New Zealand) Shigefumi Mori (Japan), Edward Witten (US)
1986	Berkeley, California United States	Simon Donaldson (GB) Gerd Faltings (West Germany) Michael Freedman (US)
1982 (Held in 1983)	Warszawa, Poland	Alian Connes (France), Willam Thurston (US) Shing-Tung Yau (US)
1978	Helsinki, Finland	Pierre Deligne (Belgium), Charles Fefferman (US) Grigory Margulis (USSR), Daniel Quillen (US)
1974	Vancouver, Canada	Enrico Bombieri (Italy), David Mumford (US)
1970	Nice, France	Alan Baker (GB), Heisuke Hironaka (Japan) Sergei Petrovich Novikov (USSR) John Griggs Thompson (GB)
1966	Moscow, Soviet Union	Michal Atiyah (GB), Paul Joseph Cohen (US) Alexander Grothendieck (France) Stephen Smale (US)

1962	Stockholm, Sweden	Lars Hormander (Sweden), John Milnor (US)
1958	Edinburgh,	Klaus Roth (GB)
	United Kingdom	Rene Thom (France)
1954	Amsterdam, Netherlands	Kunihiko Kodaira (Japan)
		Jean-Pierre Serre (France)
1950	Cambridge, Massachusetts,	laurent Schwartz (France)
	United States	Atle Selberg (Norway)
1936	Oslo, Norway	Lars Ahlfors (Finland), Jesse Douglas (US)
1932	Zurich, Switzerland	
1928	Bologna, Italy	
1924	Toronto, Canada	
1920	Strasbourg, France	
1912	Cambridge, United Kingdom	
1908	Rome, Italy - Felix Klein was a Chairman	
1904	Heidelberg, Germany	
1900	Paris, France	
1897	Zurich, Switzerland	

19. Some other prizes :

a) Abel Prize

The Abel prize is a mathematics prize of the Norwegian Academy of Science and Letters, dedicated to the memory of N. H. Abel. It is modeled after the Nobel Prize, and developed from a proposal by the mathematics department at the University of Oslo in fulfillment of a request formulated by the Norwegian mathematician Sophus Lie towards the end of the 19th century. This prize was awarded from the year 2003, the first recipient being Jean-Pierre Serre(who was also a Field's medalist !). Michael Atiyah and Isadore M. Singer (2004) Peter Lax (2005) Lennart Carleson (2006) **S.R.S. Varadhan (2007) - an American - Indian,** J.G. Thompson (USA), Jacques Tits (France)-2008 M.L. Gromov (2009) John Tate (2010), John Milner (2011) are the other winners.

b) *Ramanujan Prize*

Ramanujan Prize, *instituted by The Abdus Salam International Centre for Theoretical Physics (ICTP) is for young mathematicians from developing countries and funded by the Abel Memorial Fund. Maredo Viana (IMPA, Brazil) won the first Ramanujan prize in 2005 and* ***R. Sujatha (TIFR, Mumbai)****- 2006 , J. Laurent (Argentina)-2007, E.R. Pujals (Brazil)-2008, E-Lupercio (Mexico-2009), Yuguang Shi (2010)*

c) The first Lilavati Prize was presented to Dr. Simon Singh for his outstanding contributions to popularisation of mathematics during ICM-2010.

Millenium Prize Problems

In order to celebrate mathematics in the new millennium, The Clay Mathematics Institute

of Cambridge, Massachusetts (CMI)- an institute dedicated to increasing and disseminating mathematical knowledge, has named Seven Prize Problems. The Scientific Advisory Board of CMI selected these problems, focusing on important classic questions that have resisted solution over the years. The Board of Directors of CMI designated a $7 million prize fund for the solution to these problems, with $1 million allocated to each. Grigoriy Perelman of St. Peterburg, Russia is the recipient of the prize for resolution of the Poincare conjecture.

Many other prizes are awarded for outstanding contributions in Mathematics such as **Wolf Prize, Cole Prize** etc.

Websites :www.mathunion.org ; www.mathworld.wolfram.com;

20. SCHOOL MATHEMATICS PROJECTS AND OTHER EDUCATIONAL TOYS

1. The Manager, Mathematical Sciences Trust Society, C-766, New Friends Colony, New Delhi - 110065.
2. Mr. L. Sudhakaran, 36, AGRA, Bhavani, Nalanchira, Trivandrum-695 015. (Tel: 0471-2530812, 2530601)
3. Dynam Educational Materials, No. 2, Venkataswamy Layout, Bangalore-560 084
4. Ace Enterprises, Plot No. 27, Electronic Co-opstate Ltd., Pune-411009.
5. Centre for Realistic Education E-mail: abhayecoart@yahoo.co.in
6. Navanirmiti, Priyadarsini Apts, (Opp) IIT Market Gate, Powai, Mumbai - 400016 Ph : 022-25773215
7. Jodogyan Educational Services E/12-13, Shakurpus, Delhi-110034, E-mail: jodogyandel@yahoo.com

21. JOURNALS / EDUCATIONAL CDs

1. **Mathematics Teacher**, Junior mathematician, Published by AMTI
2. **Resonance,** published by Indian Academy of Sciences (for copies write to Indian Academy of Sciences, C.V. Raman Avenue, PB No. 8005, Bangalore - 560080).
3. **Science India,** Sasthra Bhavan, B-4, 4th Floor, Mather Square, Town Railway Station Road, Cochin-682018 (Ph: 0484-2393242, www.scienceindia.net)
4. **TATVA** - Internet software collection in Mathematics and **Charithra** - a collection of biographies of mathematicians (Contact: P. Vinodkumar, Department of Mathematics, Payyanur College, Edat P.O., Kannur-670 327, e-mail: pvinodkumar@gmail.com)
5. **Mathematics Software** - Resonance Internet Software collection in Mathematics (www.ias.ac.in)

Notable achievements in IMOs

China and Russia are the only nations that have achieved an all-members-gold IMO multiple times (China: 10 times in total, including years 1992, 1993, 1997, 2000, 2001, 2002, 2004, 2006, 2009, 2010; Russia: 2 times in 2002 and 2008). Bulgaria is the nation with the smallest population to have won IMO and it is one of four countries (with USA, China, Russia) to have won IMO by having all of its team members finish with gold medals (in 2003). The only countries to have their entire teams score perfectly on the IMO were the United States, which won IMO 1994 when it accomplished this, coached by Paul Zeitz, and Luxembourg, whose 1-member team got a perfect score in IMO

1981. This accomplishment has only been achieved twice, and the USA's success earned a mention in *TIME Magazine*. Hungary won IMO 1975 in an unorthodox way when none of the eight team members received a gold medal (five silver, three bronze). Second place team East Germany also did not have a single gold medal winner (four silver, four bronze).

Several individuals have consistently scored highly and/or earned medals on the IMO: Reid Barton (USA) was the first participant to win a gold medal four times (1998, 1999, 2000, 2001). Barton is also one of only seven four-time Putnam Fellow (2001, 2002, 2003, 2004). In addition, he is the only person to have won both the IMO and the International Olympiad in Informatics (IOI). Christian Reiher (Germany) is the only other participant to have won four gold medals (2000, 2001, 2002, 2003); Reiher also received a bronze medal (1999). Wolfgang Burmeister (East Germany), Martin Härterich (West Germany) and Iurie Boreico (Moldova) are the only other participants besides Reiher to win five Medals with at least three of them gold. Ciprian Manolescu (Romania) managed to write a perfect paper (42 points) for gold medal more times than anybody else in history of competition, doing it all three times he participated in IMO (1995, 1996, 1997). Manolescu is also a three-time Putnam Fellow (1997, 1998, 2000). Eugenia Malinnikova (USSR) is the highest-scoring female contestant in IMO history. She has 3 gold medals in IMO 1989 (41 points), IMO 1990 (42) and IMO 1991 (42), missing only 1 point in 1989 to precede Manolescu's achievement. Oleg Golberg (Russia/USA) is the only participant in IMO history to win gold medals for different countries: he won two for Russia in 2002 and 2003, then one for USA in 2004.

Terence Tao (Australia), a Fields Medalist (2006) participated in IMO 1986, 1987 and 1988, winning bronze, silver and gold medals respectively. **He won a gold medal at the age of thirteen in IMO 1988, becoming the youngest person to receive a gold medal. Tao also holds the distinction of being the youngest medalist with his 1986 bronze medal, alongside 2009 bronze medalist Raúl Chávez Sarmiento (Peru), both at the age of 11**. Representing the Soviet Union, Vladimir Drinfel'd won a gold medal with a perfect paper at the age of 15 in 1969. Note that both Drinfel'd and Tao could have participated in the IMO multiple times following their success, but entered university and therefore became ineligible.

Abraham Lincoln's letter to his son's teacher:

To Sir with love

Teach him to close his ears to a howling mob
and to stand and fight if he thinks he's right.
Treat him gently, but do not cuddle him,
because only the test of fire makes fine steel.
Let him have the courage to be impatient…
let him have the patience to be brave.
Teach him always to have sublime faith in himself,
because then he will have sublime faith in mankind.
This is a big order, but see what you can do…
He is such a fine fellow, my son!

22. MADHAVA MATHEMATICS COMPETITION

Organized by:

Department of Mathematics, S. P. College, Pune &

Homi Bhabha Centre for Science Education (TIFR), Mumbai

Under the aegis of: **National Board for Higher Mathematics**

This competition is named after **Mâdhava of Sañgamâgrama** (c. 1350 – c. 1425) , a prominent Kerala mathematician-astronomer from the town of Iriñjâlakkuda near Cochin, Kerala, India. He is considered the founder of the Kerala School of Astronomy and Mathematics. He was the first to have developed infinite series approximations for a range of trigonometric functions, which has been called the "decisive step onward from the finite procedures of ancient mathematics to treat their limit-passage to infinity". His discoveries opened the doors to what has today come to be known as Mathematical Analysis. One of the greatest mathematician-astronomers of the Middle Ages, Mâdhavan made pioneering contributions to the study of infinite series, calculus, trigonometry, geometry and algebra.

Students of B.Sc. Mathematics are eligible to apply for this competition, to be held on 8th January 2011 .

Chief Coordinator : Prof. V. M. Sholapurkar

S. P. College, Pune, Email : vmshola@gmail.com

Coordinator for Kerala :

Dr. Aparna S. Lakshmanan, Department of Mathematics

St. Xavier's College, Aluva - 683 101

Email: aparna_ren@yahoo.com **Website : http:www.spcollegepune.ac.in**

23. ADVANCED TRAINING IN MATHEMATICS SCHOOL

ATM School and ATML are organised for the benefit of research Scholars, University and College teachers with the main objective of offering integrated training programme in inter-related areas of algebra, analysis, discrete mathematics, geometry etc.

For details Contact

Prof. Jugal K. Verma
Department of Mathematics, IIT, Mumbai-400 076
E-mail: vermajugal@gmail.com

Note : The year 2011-2012 is the 125th birth anniversary of Srinivas Ramanujan and 200th birth anniversary of Evariste Galois (October 25, 1811-May 31, 1832)

Evariste Galois
(1811-1832)

Compiled by:

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21. List of other Regional Coordinators

Sl. No.	Name & Address of Regional Coordinators for RMO & INMO	Name of the Region
1.	Prof. David Kumar Commissionerate of Collegiate Education Govt. of Andhra Pradesh Opp. to Latha Complex, Namapally (Station) Hyderabad-500 001 Ph.: (040) 24617469 Fax: (040) 2460 2285 / 2461 7469 Mob: (0) 9989334981 e-mail: rdavidkumar1729@yahoo.com rdavidkumar1729@gmail.com	Coastal A.P. & Rayalaseema
2.	Prof. R. Kedareshwar Rao Dept. of Mathematics Acharya Aryabhata University Vignan Vidyalayam, Nizampet Opp. to JNTU, Kikatpally, Hyderabad - 500 072 Ph.: (040) 23011853 (O) Mob: (0)9440778045 e-mail: kedar_rudra@yahoo.co.in	Telengana
3.	Prof. R. K. Das Ramniwas, Lal Bagh, Tilakamanjhi, Police Line Road Bhagalpur-812 001, Bihar Ph.: (0641) 2611236 Mob: (0)9431875389 e-mail: rkdas_hod@yahoo.com	South Bihar
4.	Prof. Azhar Hussain Department of Mathematics Veer Kunwar Singh University, Ara (Bihar) Mob: (0)9430891391 (0) 9430559244 e-mail: alazharhussian@yahoo.co.in azharthu@gmail.com	North Bihar
5.	Dr. K. C. Prasad Dean faculty of science Ranchi University, Dept. of Mathematics Morabadi campus, Ranchi - 834 008. Ph.: (0651) 2280994 (R) (0651) 2233877 / 2233127 (O) Fax: (0651) 2233877 e-mail: kcprasad1@rediffmail.com	Jharkhand
6.	Prof. Amitabha Tripathi Dept. of Mathematics IIT, Hauz Khas, New Delhi-110016 Ph.: (011) 26896831 (R) Mob: (0)9968280833 e-mail: at1089@gmail.com	Delhi

7.	Dr. Udayan Prajapati Abijat Vidya Vihar Viswabharati Shikshan Sankool Vir Savarkar Chowk, Gurukul Road Memnagar, Ahamedbad-380 052 Ph.: (079) 26741701 (R) Mob: (0) 91 9426383343 e-mail: ganit_spardha@yahoo.co.in	Rajasthan
8.	Prof. B.V. Rajaram Bhat (RMO) Stat-Math Unit, Indian Statistical Institute 8th Mile Mysore Road, Bangalore - 560059 Ph.: (080) 28483002 /06 e-mail: bhat@isibang.ac.in bvrajaramabhat@gmail.com	Karnataka
9.	Dr. B. Sury (INMO) Stat Math Unit, Indian Statistical Institute 8th Mile Mysore Road, RV College Post Bangalore-560 059 Ph.: (080) 28483002/06 Extn. 445 (O) (080) 23313917 (R) Fax: (080) 8484265 Mob: (0) 9845195728 e-mail: sury@isibang.ac.in	Karnataka
10.	Dr. Aditi Phadke C/o Bhaskaracharya Pratishthan 56/14 Erandawane, Damle Path Off Law College Road, Pune - 411 004 Ph.: (020) 25676606 / 25675359 (O) e-mail: Phadkeaditi@gmail.com	Maharashtra & Goa
11.	Prof. J. Ramadas Centre Director Homi Bhabha Centre for Science Education Near Anushaktinanger Bus Depot V. N. Purav Merg, Mankhurd Mumbai-400 088 Ph.: (022) 25575622 e-mail: director@hbcse.tifr.res.in	Mumbai
12.	Sh. Anantram R. Pathak Director, State Institute of Science & Education (SIES) P.S.M. Campus, Jabalpur, Madhya Pradesh - 482 001 Ph.: (0761) 2625776 (O) (0761) 2677117 (R) Mob: (0) 9425324494 / (0) 9425324499 e-mail: sijb@sancharnet.in	Madhya Pradesh

13.	Dr. V. K. Pathak Assistant Professor (Mathematics) Govt. P. G. College, Dhamtari, Chattisgarh - 493773 Ph.: (0772) 2237933 (O) (0772) 2232062 (R) Fax: (0772) 2237933 mob: 09425516295 e-mail: vkpath21162@yahoo.co.in	Chattisgarh
14.	Prof. M. B. Rege North-Eastern Hill University (NEHU) Department of Mathematics, Permanent Campus, Mawlai, Shillong - 793 022 (Meghalaya) Ph.: (0364) 2550083 Mob: (0) 9436104071 e-mail: mb29rege@yahoo.co.in	North East
15.	Dr. Badibandhu Pattanayak Associate Professor and Head of the Department of Mathematics SB Women's College, Cuttak-753 001, Orissa Ph: (0671) 24142020 (O) (0674) 2431959 (R) e-mail: h.pattnayak@gmail.com	Orissa
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19.	Prof. D. P. Shukla Dept. of Maths & Astronomy Lucknow University, Lucknow - 226 007 Ph.: (0522) 2740019 (O) (0522) 2732823 (R) Mob: (0) 9450366085 e-mail: dpshukla3@gmail.com	Uttar Pradesh

20.	Prof. M. C. Joshi Dept. of Maths, Stats. & Computer Science Govind Ballabh Pant Agri. & Tech. University Pantnagar - 263 145, Uttarakhand Ph.: 094124 38601 e-mail: mcjoshi69@gmail.com	Uttarakhand
21.	Dr. Pradipta Bandyopadhyay Indian Statistical Institute Barrackpore Trunk Road Kolkata - 700 108 Ph.: (033) 25753435 e-mail: pradipta@isical.ac.in pradiptabandyo@yahoo.co.uk	West Bengal
22.	Prof. Anjan Mukkarjee Tripura Mathematical Society Dept. of Mathematics Tripura University Suryamaninagar Tripura - 799 130 e-mail: information.tms@gmail.com	Tripura
23.	Prof. Bashir A. Zargar Department of Mathematics University of Kashmir Srinagar-190006 Ph.: (0952) 257347 Mob: (0) 9419092186 e-mail: zargarba3@yahoo.co.in	J & K
24.	Mr. G. S. Lawania Coordinator, KVS Mathematics Olympiad Kendriya Vidyalaya NTPC Badarpur, New Delhi - 110 044 Mob: (0) 9891426013 e-mail: gslawania@rediffmail.com	KVS
25.	Dr. D.T.S. Rao Joint Secretary Central Board of Secondary Education 17, Rouse Avenue, Commercial Centre, New Delhi - 110 002 Ph.: (011) 23211200 (O) 9013692661	CBSE
26.	Dr. T.C.S. Naidu Jt. Commissioner Academic Navodalaya Vidyalaya of Navodaya Vidyalaya Samiti A-28, Kailash Colony, New Delhi - 110 048. Ph.: (011) 29239678 (O) Mob: 09968663710 E-mail: tcsnaidu2007@gmail.com	NVS

I had a feeling once about Mathematics - that I saw it all. Depth beyond depth was revealed to me - the Byss and Abyss. I saw - as one might see the transit of Venus or even the Lord Mayor's Show - a quantity passing through infinity and changing its sign from plus to minus. I saw exactly why it happened and why the tergiversation was inevitable but it was after dinner and I let it go.

- Sir Winston Spencer Churchill

In science one tries to tell people, in such a way as to be understood by everyone, something that no one ever knew before. But in poetry, it's the exact opposite.

- P A M Dirac

There are three kinds of lies: lies, damned lies, and statistics. *- Mark Twain*

Imagination is more important than knowledge. *Albert Einstein*

It is not knowledge, but the act of learning, not possession but the act of getting there, which grants the greatest enjoyment. When I have clarified and exhausted a subject, then I turn away from it, in order to go into darkness again; the never-satisfied man is so strange if he has completed a structure, then it is not in order to dwell in it peacefully, but in order to begin another. I imagine the world conqueror must feel thus, who, after one kingdom is scarcely conquered, stretches out his arms for others. *Karl Friedrich Gauss*

I am interested in mathematics only as a creative art. *G.H. Hardy*

The real danger is not that computers will begin to think like men, but that men will begin to think like computers. *Sydney J. Harris*

It is India that gave us the ingenious method of expressing all numbers by means of ten symbols, each symbol receiving a value of position as well as an absolute value; a profound and important idea which appears so simple to us now that we ignore its true merit. But its very simplicity and the great ease which it has lent to computations put our arithmetic in the first rank of useful inventions; and we shall appreciate the grandeur of the achievement the more when we remember that it escaped the genius of Archimedes and Apollonius, two of the greatest men produced by antiquity.

Pierre-Simon de Laplace

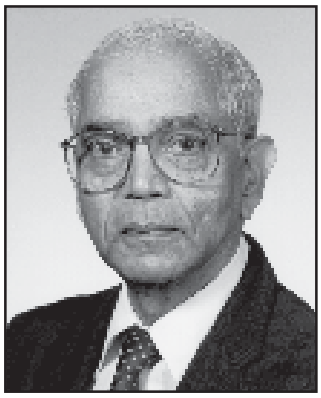
No human investigation can be called real science if it cannot be demonstrated mathematically. *Leonardo da Vinci*

Education is for improving the lives of others and for leaving your community and world better than you found it. *Marian Wright Edelman*

To repeat what others have said, requires education, to challenge it, requires brains.

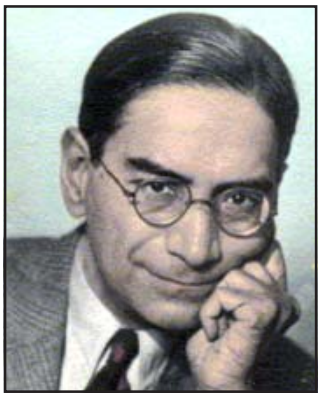
Mary Pettibone Poole

WE ARE PROUD OF.....



C. R. RAO
(1920)

SARVADAMAN CHAWLA
(1907-1995)



PRASANTA CHANDRA MAHALANOBIS
(1893-1972)

C.T. RAJAGOPAL
(1903-1978)

HARISH CHANDRA
(1923-1983)

R. C. BOSE
(1901-1987)

S.S. PILLAI
(1901-1950)

VAIDYANATHASWAMY
(1864-1960)

S.R.S. VARADHAN
(1940)

SRINIVASA RAMANUJAN
(1887-1920)

TEACHING IS A LIFE TIME MISSION

To enable development of youth first and foremost, the teacher's love for teaching is essential, with teaching as the soul of the teacher. The teacher must realize that they are responsible for shaping not just students but ignited youth who are the most powerful resource under the earth, on the earth and above the earth. With their full commitment to the great mission of teaching, the teacher transforms himself or herself as a great teacher only when he or she is capable of elevating the average student to high performance. The teacher conducting himself or herself in a noble way itself is a lifetime message for students. They should encourage the students and children to ask questions and develop the spirit of enquiry, so that they blossom into creative enlightened citizens. They should treat all the students equally and should not support any differentiation on account of religion, community or language and continuously upgrade the capacities in teaching so that they can impart quality education to the students. They should realize by being a teacher, they are making an important contribution to the efforts of national development. The teachers must constantly endeavour to fill their mind, with great thoughts and spread the nobility in thinking and action among the students. Teacher should celebrate the success of the students.

Dr. A.P.J. Abdul Kalam
Former President of India