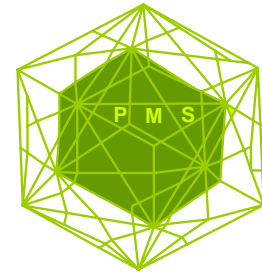


Pakistan Mathematical Society

Newsletter



ISSN 1816-2215

Pak. Math. Soc. Newsl.
Issue No. 1, Vol No. 7, 2008

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EDITORIAL

Mathematics in Pakistan is grossly misunderstood. This misunderstanding does not only exist at the laymen's level, but at the academic level of those who are educated in mathematics. Unfortunately, mathematics is regarded as an auxiliary subject during school and university in order to move on to careers in sciences or engineering. This thinking exists even at the government level in the minds of the policy makers of science and education. Mathematics, in Pakistan especially, has always been considered as an art, language of science, and service to science and technology. This view of mathematics is a major cause of its decline in Pakistan.

There is a general misconception that mathematics is about calculations and symbols. It is due to the fact that the technical trappings of the subject, its symbolism and baffling terminology, tends to obscure its real nature. Mathematics is wrongly construed in Pakistan as a quantitative science. Generally, it is misunderstood as a branch of science, which is about symbols and calculations. In fact these are just tools of the trade. Mathematics, since antiquity, is the result of sophisticated intellectual endeavors. Mathematics in fact is about ideas. In particular it is about the way that different ideas relate to each other. The objective of mathematics is to understand a phenomenon by stripping away the inessentials and penetrating to the core of the phenomena.

It is a matter of historical record that this "utilitarian approach" towards mathematics has ruined a genuine scientific culture which is an important part of the infrastructure for the development of a country. Mathematics is not about how a few equations or numbers can be manipulated for everyday use. Hence a common view prevails in that, by mastering the skills of mathematical manipulations, one can solve everyday problems. The public gets this wrong impression of mathematics that by the use of an equation or a formula one can solve all the social, economic and environmental problems of a country.

For instance, the requirements demanded by the grant donors for projects ignore the very nature of mathematics. Their utilitarian approach towards mathematics imposes such conditions for grants, which by and large cannot be met. Questions such as: What national interest is to be protected by this research project? What economic or trade benefits are to be achieved by this project? are frequently asked.

It is pertinent that academia first of all realizes the importance of understanding the true nature of mathematics and then propagates the true nature of mathematics. Unless we do this mathematics will not find its due place in the society.

THE ABEL PRIZE FOR 2008

The 2008 Abel Prize is awarded to John Thompson and Jacques Tits for their profound achievements in algebra and in particular for shaping modern group theory.

Modern algebra grew out of two ancient traditions in mathematics, the art of solving equations, and the use of symmetry as for example in the patterns of the tiles of the Alhamra. The two came together in the late eighteenth century, when it was first conceived that the key to understanding even the simplest equations lies in the symmetries of their solutions. This vision was brilliantly realized by two young mathematicians, Niels Henrik Abel and Evariste Galois, in the early nineteenth century. Eventually it led to the notion of a group, the most powerful way to capture the idea of symmetry. In the twentieth century, the group theoretical approach was a crucial ingredient in the development of modern physics, from the understanding of crystalline symmetries to the formulation of models for fundamental particles and forces.

In mathematics, the idea of a group proved enormously fertile. Groups have striking properties that unite many phenomena in different areas. The most important groups are finite groups, arising for example in the study of permutations, and linear groups, which are made up of symmetries that preserve an underlying geometry. The work of the two laureates has been complementary: John Thompson concentrated on finite groups, while Jacques Tits worked predominantly with linear groups.

Thompson revolutionized the theory of finite groups by proving extraordinarily deep theorems that laid the foundation for the complete classification of finite simple groups, one of the greatest achievements of twentieth century mathematics. Simple groups are atoms from which all finite groups are built. In a major breakthrough, Feit and Thompson proved that every non-elementary simple group has an even number of elements. Later Thompson extended this result to establish a classification of an important kind of finite simple group called an N-group. At this point, the classification project came within reach and was carried to completion by others. Its almost incredible conclusion is that all finite simple groups belong to certain standard families, except for 26 sporadic groups. Thompson and his students played a major role in understanding the fascinating properties of these sporadic groups, including the largest, the so-called Monster.

Tits created a new and highly influential vision of groups as geometric objects. He introduced what is now known as a Tits building, which encodes in geometric terms the algebraic structure of linear groups. The theory of buildings is a central unifying principle with an amazing range of applications, for example, to the classification of algebraic and Lie groups as well as finite simple groups, to Kac-Moody groups – used by theoretical physicists, to combinatorial geometry – used in computer science, and to the study of rigidity phenomena in negatively curved spaces. Tits's geometric approach was essential in the study and realization of the sporadic groups, including the Monster. He also established the celebrated "Tits alternative", which says that every finitely generated linear group is either virtually solvable or contains a copy of the free group on two generators. This result has inspired numerous variations and applications.

The achievements of John Thompson and of Jacques Tits are of extraordinary depth and influence. They complement each other and together form the backbone of modern group theory.

REPORT – ICMTD 07

Dr Muhammad Ashiq

The Egyptian Mathematical Society on the occasion of its 15th anniversary organized the Second International Conference on Mathematics: Trends and Developments (ICMTD07) in Ain Shams University, Abbasia Guest House, Cairo, Egypt, from 27th to 30th December 2007. The purpose of the conference was to gather mathematicians from universities and research institutes from different countries to discuss current trends, developments, and perspectives in the fields covered by the conference. The scientific programme consisted of invited general lectures and contributed presentations.

There were approximately 160 speakers from all categories of mathematics. Dr Muhammad Ashiq and Dr Tariq Maqsood from the National University of Sciences and Technology, Rawalpindi and Dr Farhan Saif from the Electronics Department of Quaid-i-Azam University, Islamabad attended the conference and presented their papers.

CELEBRATIONS OF WORLD SCIENCE DAY FOR PEACE & DEVELOPMENT

The Convention of Scientists was held on 22nd November 2007. It was organized by the Pakistan Science Foundation with the support of UNESCO Islamabad, and the Pakistan Mathematical Society. The convention was held as part of the celebrations of world science day for peace & development. The Pakistan Science Foundation organized many other programmes like Poster Competition on the theme Mathematics/Geometry in Nature, Science Caravan, Film and Planetarium Shows, Teaching Aids Exhibitions, etc., at this occasion.

Renowned scientist and ex-chairman of the Pakistan Atomic Energy Commission, Dr Ashfaq Ahmad, who is currently the President of the Pakistan Academy of Sciences, and Advisor to the Prime Minister, Islamic Republic of Pakistan, presided over the function. Dr. N.M.Butt, Chairman, Pakistan Science Foundation, hosted the function. Mr. Ichiro Miyazawa, Programme Specialist (Education), UNESCO, Islamabad also participated in the function as a representative of UNESCO in Pakistan.

Professor Qaiser Mushtaq spoke on what mathematics is about. He emphasized that in Pakistan, mathematics is wrongly understood and projected as a branch of science which deals with calculations only. He said that the utilitarian approach towards mathematics and having only a myopic view of mathematics that it is “servant of science” is having adverse effects on the development of mathematics. He recommended that the point of view of engineers and physical scientists has to be modified for a healthy multidimensional view of mathematics in the country.

Ms Nabeela Shahid, Beaconhouse School System, spoke on how mathematics should be taught at the school level. She said that teachers have to use modern methodology of teaching mathematics at primary and secondary levels.

NATIONAL SEMINAR ON MATHEMATICS

The National Seminar on Mathematics was held on 17th December 2007. It was the 13th national seminar on mathematics organized by the Pakistan Mathematical Society. The Pakistan Academy of Letters provided its auditorium and hospitality for the seminar. A prominent scientist of Pakistan, Dr Anwar Nasim, Advisor to OIC's Standing Committee on Science & Technological Cooperation (COMSTECH), was the speaker. He spoke on Day to Day Life: Science and Technology.

Dr Anwar Nasim said that science and technology was now a part of our lives. We cannot think of anything in our surroundings, he said, which does not involve science and technology.

PakMS ESTABLISHES RELATIONS WITH AUSTRALIAN MATHEMATICAL SOCIETY

The Pakistan Mathematical Society and the Australian Mathematical Society signed a bilateral agreement by virtue of which the members of both societies will enjoy privileges of becoming members of other societies on reduced rates. Members of Pakistan Mathematical Society, on the basis of reciprocity agreement with the Australian Mathematical Society, can become members of the London Mathematical Society and/or of the American Mathematical Society on considerably reduced rates.

The reciprocity agreement is a result of the personal efforts of the current President of the Society, Professor Qaiser Mushtaq. He has been continually in touch with his counterpart officials in the Australian Mathematical Society. Pakistan Mathematical Society's service to mathematics in Pakistan and its active role in spreading mathematical culture in Pakistan have been appreciated by the officials of the Australian Mathematical Society.

PAKISTAN MATHEMATICAL SOCIETY WINS LINKAGE WITH IMU

The Pakistan Mathematical Society has been trying hard to get the society linked with the International Mathematical Union (IMU). Professor Qaiser Mushtaq, President, PakMS, was of the point of view that since PakMS is the only most active NGO which represents majority of mathematicians of Pakistan, it should have been linked with IMU as the Coordinating Organization between Pakistan and IMU.

The then President of IMU, Professor Ball, was invited to Pakistan by HEC and his visit was kept secret from PakMS. Only a few selected mathematicians met Professor Ball. The Chairman of HEC, who was then President of the Pakistan Academy of Sciences, promised to pay the annual membership fee to the IMU for Pakistan through the

Academy. As a result, Professor Asghar Qadir, who was appointed chairman of the Adhering Committee, appointed Professor Saleem Asghar, Professor Ismat Beg, and Professor Allah Ditta Choudhary as the other three members of the Committee. Later, Professor Saleem Asghar was selected at a conference as the President of the All Pakistan Mathematical Association which has been dormant for over 25 years.

President PakMS's point of view was that since PakMS is the only legal mathematical society in Pakistan and is the most active and largest in the country should have been asked to act as an Adhering Committee instead of the Pakistan Academy of Sciences which is not a representative of Pakistan mathematicians as it has only four mathematicians, namely, Professors Q.K.Ghori, A.Qadir, Saleem Asghar, and Tasawar Hayat its fellows. (Incidentally, all of them are applied mathematicians.) Nevertheless, PakMS was ignored, and Professor Qadir was made Chairman of the Adhering Committee under the auspices of PAS. Who, later, left no stone unturned in his efforts not to let IMU recognize PakMS as the sole genuine and legal mathematical society of Pakistan? We reproduce in the following one of the many letters of Professor Qadir which he wrote to the IMU.

'I must apologize for the enormous delay in getting back to you on this issue. Trying to get a decision from the Committee has been time-consuming (to say the least). However, we have finally arrived at the following decision. The All Pakistan Mathematical Association will be representing Pakistan and should be mentioned as the official website for Pakistan. Its web address is: <http://www.apma.org.pk> and its postal address is: "c/o the Pakistan Academy of Sciences" (which is also the Adhering Institution for the IMU and whose address you already have). However, as you so kindly offered, we would be grateful if you could provide a link to the Pakistan Mathematical Society as well. Its web-address is: <http://www.pakms.org.pk> and its postal address is "c/o the Department of Mathematics, Quaid-i-Azam University, Islamabad, Pakistan". We are, indeed fragmented. I am trying to get a single representative forum but cannot claim great success in the attempt. I might mention that the Pakistan Mathematical Society runs the Pure Mathematics Conference and so may be taken to be limited to "Pure Mathematics", whatever that may mean. Best regards, Asghar Qadir'

MATHEMATICAL QUIZ COMPETITION AT THE F.G. COLLEEE FOR WOMEN G-10/4, ISLAMABAD

The Pakistan Mathematical Society organized the investiture ceremony for mathematical quiz competition held at the F.G. College for Women 10/4, Islamabad. Major General (Retd) Syed Mukhtar Shah, Director General, National Institute of Technical and Scientific Education, was the chief guest.

The competition was held on 30th Nov. 2007 by the F.G. College for Women G-10/4, Islamabad in collaboration with the Pakistan Mathematical Society. The staff members and students of the Mathematics Department of the college participated wholeheartedly in the quiz. Four teams, namely Omar Khayyam, Abul Al Hassan Ibn Ali Alzasdi, Muhammad Bin Musa Al Khowarzmi, and Yaqub Ibn Ishaq Al Kindi, participated.

After a tough competition “Omar Khayyam” team won the competition. The individual inners from MSc, BSc and FSc groups were respectively Miss Tahira Bano, Miss Rabia Azeem, and Hafiza Maryam.

Dr. Farhat Babar, Principal of the college, while welcoming the Chief Guest, introduced the college. She highlighted achievements of the only postgraduate federal college for women in the capital. She herself being a doctorate in mathematics pointed out the importance of the mathematical quiz competition.

Director General Syed Mukhtar Shah gave prizes to the winners of the competition. He emphasized the importance of mathematics in the curriculum. He said that mathematics education needed to be properly projected through such competitions so that talent can be encouraged for promotion of mathematics in the country.

Professor Dr Qaiser Mushtaq, President of the Pakistan Mathematical Society, explained the true nature of mathematics. He said that unless we understand the true nature of mathematics it would not be possible to develop mathematics in the right direction. He said that mathematics is not a quantitative science as is wrongly understood in Pakistan. He emphasized that mathematics is about ideas and not calculations.

MATHEMATICS IS NOT ABOUT CALCULATIONS

The University of Gujrat, Pakistan, has started a series of lectures on various topics with the aim to generate academic culture at the newly established university. On 28th March 2008, it organized a seminar on mathematics, Professor Dr Qaiser Mushtaq, President, Pakistan Mathematical Society, was the invited speaker.

The title of the seminar was “Mathematics is not about calculations”. It was arranged by Faculty of Science, University of Gujarat. Director, Faculty of Sciences, Dr. I. R. Durrani, presided over the seminar.



Mathematics is not about calculations. It is about patterns, structures and abstraction. It is a very interesting subject which deals with shapes, numbers, arrangements, choices and movements. Pure and applied mathematics have applications encompassing different departments of life. These were the views of the Professor Dr. Qaiser Mushtaq, while delivering a lecture conducted by the University of Gujrat.

Afterwards, a question-answer session took place. Director Academics, Dr. Azhar

Mehmood, Head of Zoology Department, Dr. Javeed Iqbal, professors and lecturers of the Faculty of Science, and a large number of students attended the seminar.



POSTER COMPETITION BY PSF

The Pakistan Science Foundation (PSF) organized a convention of scientists in connection with development of Science. The convention was organized in collaboration with the Ministry of Science and Technology and the United Nations Educational, Scientific and Cultural Organization.

World Science Day for Peace and Development provides an opportunity for scientific organizations, scientists, governments and civil society to join together in reaffirming in the words of the UN Charter contribution of science to the promotion of social progress and better standards of life. Addressing the convention as a chief guest, Special Advisor to the Prime Minister, Dr Ishfaq Ahmad, said that various disciplines, especially mathematics, correlates all segments of science but most of the students fear about it due to lack of understanding and comprehension of the subject.

Dr. Ishfaq said that the main reason for studying mathematics to an advanced level was that it was interesting and enjoyable and students like its challenges, clarity, and the fact that you know when you are right.

PSF Chairman, Dr. N M Butt, said that the Foundation had been making efforts for the promotion of science and technology in the educational institutions across the country.

Dr. Qaiser Mnshtaq, Ms. Nabela Shahid and Miss Ayesha Ameer also addressed on the occasion. PSF also arranged a Science Caravan Exhibition on the occasion in which handmade posters were displayed in the gallery. A large number of students, teachers and people from different walks of life visited the gallery and appreciated the work of students.

Later, certificates and shields were distributed among students who secured top positions in a poster competition held on November 10 related to the day on the topic of 'Mathematics/Geometry in Nature'.

Shayyan Qaiser of Beaconhouse School secured first position out of 58 students who participated in the competition. Maliha Khalid Kayani of Beaconhouse School got second position while Monifa Ahmad of MCG, F- 7/4, stood third in the competition.

9th INTERNATIONAL PURE MATHEMATICS CONFERENCE 2008
24 – 26 August 2008
Islamabad, Pakistan

Description:

The 9th International Pure Mathematical Conference 2008 (9th IPMC 2008) is the 9th international conference in the series of Pure Mathematics Conferences that take place in Islamabad every year in August. It will be a thematic conference on Algebra, Geometry, and Analysis held under the auspices of the Pakistan Mathematical Society (www.pakms.org.pk). The entire conference will be organized under one roof at a hotel in the modern, peaceful and beautiful federal capital of Pakistan located at the footsteps of the scenic Margalla Hills. There will be free housing for foreign participants. Some travel grants will be available for foreign speakers. Several recreational trips will be organized in and around Islamabad introducing the unique local and multi-ethnic culture.

Information for registration:

Please fill in the on-line registration form at www.pmc.org.pk and find more information therein. The conference is convened by Professor Dr Qaiser Mushtaq (Department of Mathematics, Quaid-i-Azam University, Islamabad, Pakistan) in collaboration with Mathematics Division, Institute of Basic Research (Florida, USA), Higher Education Commission, Pakistan Science Foundation, Preston University, Pakistan Mathematical Society and Quaid-i-Azam University, Islamabad.