

National Mathematics Day

by Gonit Sora - Monday, December 22, 2014

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Exactly three years ago, on 22nd of December 2011 the then PM of India, Dr. Manmohan Singh announced in a major event at the University of Madras that 22nd of December would be celebrated as National Mathematics Day in India and 2012 as National Mathematics Year. This announcement came on the 125th birth year of one of India's greatest mathematician, Srinivasa Ramanujan Aiyengar. 22nd of December, 1887 marks his date of birth, and it is perhaps the most appropriate day to celebrate National Mathematics Day in India. Ramanujan's story is quite well known to most Indians. He was born amidst extreme poverty in Erode, a small town in Tamil Nadu. His father worked in a cloth merchant's shop and his mother was a housewife.

The circumstances of his life in Kumbakonam, where he grew up are now well recorded in the marvelous biography 'The Man Who Knew Infinity' by [Robert Kanigal](#). In fact, a biographical movie based on this book is going to release next year in Hollywood in which actor Dev Patel plays the role of Ramanujan. The town high school in Kumbakonam where Ramanujan studied didn't give much flight to the prowess of his genius. However, he was able to borrow some books in higher mathematics from a college library with the help of his friends. In this, Ramanujan found a new life and his genius continuously scaled one height after another in a short span of time. By the time, he entered college with a scholarship; Ramanujan was fully engrossed in mathematics and had no time for anything else. His neglect for the other subjects resulted in him failing the exams in the pre-university stage. Unfettered Ramanujan however continued to work in mathematics.

The work of Ramanujan was so advanced that the fellow Indian mathematicians very often didn't have any clue about what he was doing. Based on suggestions from some mathematicians in India, Ramanujan wrote to a few famous British mathematicians about his work. Most of them ignored him or gave discouraging response; however one of them wrote back and encouraged him to come to Cambridge to work further on his mathematics. This was the great British mathematician G. H. Hardy, who at once recognized the genius in Ramanujan. Motivated by Hardy, and with little coaxing Ramanujan finally decided to go to Cambridge, and thus began a collaboration in mathematics which has seen no parallel. In collaboration with Hardy and also single-handedly, Ramanujan was able to prove many results in mathematics during his few years of stay at Cambridge.

Unfortunately, Ramanujan got very ill while in England and had to return home. But finally the genius of Ramanujan was understood and appreciated by the world mathematical community. At Cambridge, Ramanujan was elected a fellow of the Royal Society, becoming the second Indian at that time to be awarded this coveted fellowship. Even today only a handful of Indians are fellows of the Royal Society. Ramanujan was also the first Indian to be given the prestigious fellowship of Trinity College in Cambridge. His results in number theory proved during his stay in England are among the most elegant results in the subject. Even today after over a hundred years, people are studying his theories and trying to prove statements that he made in his famous notebooks.

After his return to India, Ramanujan was never the same and he passed away on 26th of April, 1920. He was survived by his wife, Janaki. Even on his death bed, Ramanujan continued to work and regularly wrote to Hardy with new and exciting results. This mathematics that Ramanujan wrote a few months before his death has recently been properly studied and understood. This is just one of the many instances that prove how much Ramanujan was ahead of his times. Numerous mathematicians all over the world are still studying the work of Ramanujan and trying to decipher his results. In fact, such is the influence of Ramanujan in mathematics today that a separate journal devoted to fields related to Ramanujan's mathematics called 'The Ramanujan Journal' was founded in 1997. This journal is one of the most widely respected ones around the world, and is perhaps the only journal which has been named after a mathematician.

Much can be learnt from the life of Ramanujan. His was a journey of passion and devotion. In spite of extreme poverty, Ramanujan tackled all odds in his relentless pursuit of mathematics. Being under colonial British rule at that time meant some curtailment of freedom, but this did not in any way hinder Ramanujan's progress in life. His is an exemplary example of what an individual can achieve with hard work and talent. Thus, it is only apt that India must celebrate this great son of hers. By commemorating the National Mathematics Day, we are coming one step closer to celebrating the life and journey of one of the greatest mathematicians of all time.

Mathematics is seen by many as rather a dull and boring subject, one which apparently is not at all related to the day to day activities. But this is far from truth. Mathematics has a unique beauty and is the purest form of truth. If studied the proper way it can be quite beneficial to everyone. Not only does it increase ones analytical skills but it also has immense applications in almost all the activities that we do in daily life. For instance, a branch of mathematics called cryptography is widely used in handling all online communications. Transferring money online or withdrawing from an ATM, involves sophisticated mathematics. By devoting a day to mathematics, we can go a long way in bridging this gap of understanding and applying mathematics.

The rich tradition of mathematics in India can be seen across the ages. Be it Aryabhatta or Brahmagupta, Madhava or Ramanujan; India has always been a superpower in mathematics. But the present scenario is not as promising as that of the yesteryears. To become a developed nation India needs mathematicians of the highest caliber, who can break the shackles of the many problems that cripple society today. An applied mathematician is needed not only in industry but also in economic planning of a country. Let us all celebrate mathematics and pay homage to Srinivasa Ramanujan on this National Mathematics Day.

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