Contribution Srinivasa Ramanujan In Indian Mathematics

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bstract

A mathematician named George Shoobridge Carr wrote a book titled "A Synopsis of Elementary Results in Pure and Applied Mathematics," and Ramanujan received a copy of it as a gift. While reading it, Ramanujan was motivated to continue his mathematical studies. Five thousand of Carr's original theories and concepts are presented in this extraordinary book. It is widely believed that this book was responsible for reawakening Ramanujan's dormant mathematical aptitude. Upon receiving the K. Ranganatha Rao prize from his school's principal in 1904, he was awarded a full tuition scholarship to study at the Government Arts College in Kumbakonam. While he was there, he lost his scholarship because he was too preoccupied with mathematics to pay attention in any of his other subjects. In his later life, Ramanujan studied at a number of different schools, including the now-famous Pachaiyappa's College in the city of Chennai. Again underperforming in subjects other than mathematics prevented him from fulfilling the prerequisites for his Fellow of Arts degree. In the following year, he repeated his attempts at the examinations, but to no avail. He stopped going to university so he could work independently since he didn't have a degree. Because of his lack of credentials, he was forced to concentrate only on his ideas as he struggled to make ends meet amid extreme poverty and often faced starvation.

Keywords: Mathematician, Srinivasa Ramanujan, Contribution, Divine Mathematics, Death and Recognition

Introduction

That Srinivasa Ramanujan, born on December 22, 1887, would grow up to be one of the greatest mathematicians in history was a given even before he was born. Throughout his career, he created hundreds of unique formulations, many of which are still in general use today. His calculations help us learn more about how black holes work. Many of his ideas originated from his time spent at Cambridge, England, when he interacted with some of the brightest minds of his day and discussed his mathematical problems. Though his time in India

sparked a few original concepts, he continued to develop others after he returned home to the States. Ramanujan began his productive partnership with Cambridge professor Godfrey Harold Hardy during his time in England. Ramanujan used Professor Hardy's evaluation as inspiration and developed some mathematical equations that are now standard. What makes him really outstanding is the level of thinking and understanding needed by his unique formulations. Almost all of his far-reaching predictions came true, and his work motivated other mathematicians to create equations that are still used today. Srinivasa Ramanujan was born in the city of Erode, located in what is now the state of Tamil Nadu in India. Both Komalatammal and K. Srinivasa Iyengar worked in the service industry; Komalatammal was a housewife who performed devotional songs at the local Hindu temple, while K. Srinivasa Iyengar was a sari store employee. Ramanujan was only two years old when he had smallpox, yet he was able to overcome the illness and live a full and productive life thereafter. He hated going to school so much as a kid that his parents had to hire a constable to drag him there against his will. Oddly enough, his time spent learning at Kangayan Primary School coincided with his finest academic performance. Over the course of his schooling, he maintained a high level of intellectual achievement. Ramanujan graduated from primary school in November 1897, at the age of nine, with the best scores in his area. Consequently, he enrolled in the top high school available. This sparked his early interest in maths. Ramanujan's insatiable curiosity for mathematics prompted him to seek out more and more information. His knowledge of trigonometry (the study of the connections between the lengths and angles of triangles) was so sophisticated that by the time he was thirteen, he had memorised the whole textbook written by Professor Sidney Luxton Loney. After just a few years of study, he was able to independently solve challenging mathematical problems, generate unique concepts, and finish examinations in under half the time allotted.

Srinivasa Ramanujan Adulthood

Ramanujan married Srimathi Janaki, or Janakiammal, in 1909. Her age at the time was just 22. Marriages between partners of very different ages were commonplace at the time. That includes his marriage to Srimathi Janaki, who was just ten years old at the time. Ramanujan moved to Chennai quickly and was lodging with a friend while looking for job. To supplement his income, he taught at India's oldest government arts college, Presidency

College, which was created by the British. Ramanujan met V. Ramaswamy Aiyer, founder of the Indian Mathematical Society, while searching for work in India. After speaking with Ramanujan, Aiyer extended an offer for him to visit Chennai. It was while in India that Raghunatha Ramachandra Rao, a government worker, mathematician, and social and political activist, introduced him to Aiyer and other mathematicians. The British Raj honoured Rao for his contributions by making him secretary of the Indian Mathematical Society and bestowing upon him the honorific "Diwan Bahadur." To honour those who have made significant contributions to the country's well-being, the honorific "Diwan Bahadur" has been bestowed upon them. When Rao first met Ramanujan, he was sceptical of his mathematical calculations and suspected that he was a scam artist. At first, he doubted Ramanujan's brilliance, but after hearing the young man explain his numerous groundbreaking mathematical ideas, he came around. Ramanujan asked Rao for money so he could go to college, and Rao generously agreed to help. After some time, Ramanujan's contributions were published in the Journal of the Indian Mathematical Society. Ramanujan attempted to get a temporary position with the Madras Accountant General in 1912. While he had only been on the job for a short time, he was guaranteed a monthly salary of twenty Indian rupees. He eventually got around to sending his resume to the Madras Port Trust's Chief Accountant. Edgar William Middlemast, a math professor at Presidency College, wrote a letter of reference for him. Ramanujan started work as a Class III, Grade IV accounting clerk on March 1, 1912, earning 30 rupees a month. Since Ramanujan was so competent, he was able to complete his tasks quickly, freeing him up to focus on his studies. Both Ramanujan's boss Sir Francis Spring and one of his coworkers, S. Narayana Iyer, urged him to pursue scientific study. Diwan Bahadur Rao, Professor Middlemast, and S. Narayana Iyer all made presentations to British mathematicians in 1913 to try to clarify Ramanujan's theories. Ramanujan was called an idiot and a fraud, and his work was ridiculed. Following this, Ramanujan sent a letter to the preeminent mathematicians at Cambridge University in Britain. Godfrey Harold Hardy was polite and helpful, but two instructors entirely disregarded him. In spite of his initial scepticism, he eventually found parts of Ramanujan's book to be rather enjoyable. A few of Ramanujan's ideas were even attributed to Professor Hardy. After receiving a letter from Ramanujan, who demanded further evidence in support of his views, Professor Hardy contacted the Indian Office. As secretary of the Advisory Committee for Indian Studies, Arthur Davies asked the

mathematician Ramanujan to visit England, but the mathematician graciously declined, citing his rigorous Brahmin (priestly-caste) upbringing. One well-known case exists in which Ramanujan duplicated the work of another mathematician. While enrolled in Madras Christian College, Ramanujan recognised Edward Ross, a lecturer from his time at Trinity College in Hartford, Connecticut. He was worried about Ramanujan and questioned his Polish class whether he understood the language. In a letter he sent that day, Ramanujan boasted that he had come up with ideas that anticipated the work of a Polish mathematician. Prof. Hardy was disheartened when Ramanujan declined his invitation to visit Cambridge, but he persevered and enlisted the help of Prof. E. H. Neville. Ramanujan first denied that he was concerned about leaving, but as Neville persisted, he eventually conceded as much. Leaving behind his parents and wife in India, Ramanujan raced out to England. Ramanujan was glad to have met a friend in spite of this. Professor Hardy used his professional ties to get Ramanujan a two-year, 75-rupee-a-month research grant at the University of Madras. The Journal of the Indian Mathematical Society received several pieces he had written presenting his thoughts.

Traveling to England and Life in Cambridge

Ramanujan spent more than a month on his journey from India to England. He left Madras on March 17, 1914, and arrived in London on April 14 on a ship. Upon his return to Cambridge after a short visit to London, Ramanujan was snatched away. Ramanujan and Professor Hardy shared a Cambridge dorm. Shortly after his arrival, he began working with Professors Hardy and Littlewood. After reviewing his notes, they came up with a variety of potential explanations. Others were established from earlier mathematical studies, some were declared inaccurate, while others were seen as major improvements. They marvelled at his brilliance, and some even saw similarities between him and Leonhard Euler and Carl Gustav Jacobi, two of history's most renowned mathematicians. Ramanujan's whole time in England was spent with Professor Hardy having him tutored in areas where he was struggling. His five years at Cambridge were not without their share of difficulties. A sharp contrast in culture occurred between Ramanujan, who was brought up in a more traditional Indian setting, and the two Cambridge professors. They didn't only work together in dissimilar ways; their core ideals were also divergent. Professor Hardy was an atheist who put all his faith in mathematics and

the empirical world, whereas Ramanujan was a religious Hindu who trusted his instincts. For his mathematical work, part of which was published as an academic paper in the journal Proceedings of the London Mathematical Society, Ramanujan was awarded a Doctor of Philosophy (then termed a Bachelor of Science) degree in March 1916. People finally began to take Ramanujan and his work seriously after this. After joining the London Mathematical Society in 1917, he was elected a Fellow of the Royal Society in 1918. The Royal Society is the world's first and oldest scientific academy. At the time of his election as a Fellow, at the age of 31, he was one of the youngest members of the Royal Society, which was established in 1660. This award recognises those who have made "outstanding contributions to the furtherance of natural knowledge," which may be in any number of disciplines from math and engineering to the health sciences. Many other remarkable minds, such as Sir Isaac Newton, Charles Darwin, Michael Faraday, Albert Einstein, and Alan Turing, have been recognised as Fellows of the Royal Society. However, Ramanuja did not become the first Indian Fellow at Trinity College, Cambridge until 1918.

Divine Mathematics

Ramanujan was brought up in a very religious Hindu family. As his father was gone for much of the day, he became quite attached to his mother. Everything he knows about Hinduism and the Brahmin (priestly) caste, he learned from her. After first declining Professor Hardy's invitation to visit England, Ramanujan eventually accepted. Ramanujan had a highly conventional Hindu lifestyle and was forbidden by his religion to leave India. His parents also turned down the offer since it didn't align with their Brahmin values. An Hindu god known as Namagiri. Silks and jewellery are laid onto her statue as an offering. Namagiri is a Hindu deity or goddess. Putting silks and jewels around her statue is a form of worship. Although at first she was against it, his mother eventually came around after having a dream in which the family god, Namagiri, told her not to stand in her son's path. After receiving her approval, he embarked on a career that would make him a household name and establish him as one of the world's foremost mathematicians.

Personality and spiritual life

It is believed that Ramanujan was a gentleman who carried himself with dignity at all times and had excellent manners. In addition to this, he had a demeanour that might be described as shy and quiet. While he was at Cambridge, he had a life that was rather straightforward. The early Indian biographers who write about Ramanujan paint a picture of him as a highly pious and conventional Hindu in their accounts of his life. He credited the Namagiri Thayar, also known as the Goddess Mahalakshmi of Namakkal, who was revered in his family with providing him with his astuteness. He added that he dreamed of blood drops that symbolised her husband, Narasimha, and that he got inspiration from her in his art. He also mentioned that the blood droplets appeared in his dream. In order to draw creativity for his job, he resorted to her. After a period of time had passed, he started seeing visions of scrolls that contained complicated mathematical knowledge unrolling in front of his own eyes. In a number of interviews, it was reported that he had said things like, "An equation for me has no importance unless it expresses a concept of God." Hardy relates a comment that was made by Ramanujan, who said that he saw the same level of truth in all of the world's religions. In addition, Hardy maintained that Westerners had exaggerated the significance of Ramanujan's religious conviction, while Indian biographers had exaggerated the significance of Ramanujan's religious belief but not his practise. Hardy was of the opinion that Indian biographers had exaggerated the significance of Ramanujan's religious belief but not his practise. In the course of the same discussion, he offered his thoughts on Ramanujan's commitment to a vegetarian lifestyle. In a statement along the same lines, Berndt said to Frontline in an interview that, "It is a common misunderstanding that the mathematical thinking of Ramanujan has some sort of ethereal power. That is not the situation at all. In each and every one of his three notebooks, he has recorded each and every result in painstaking detail "Further conjecture implies that Ramanujan worked out intermediate answers on slate because he could not afford the paper that would have been required to record them more permanently.

Death and Recognition

Ramanujan was a man who was never in very good health and fought with a range of diseases and health issues throughout his life. Throughout his life, he battled a number of

illnesses and health difficulties. This issue grew even more challenging for him when he was in England since he was not used to the traditions and weather of that country. After receiving a diagnosis of tuberculosis as well as a significant deficiency in vitamins, he was hospitalised in a sanatorium, which is also known as a hospital for long-term illness, with the purpose of receiving treatment for an extended period of time. After this, he travelled all the way back to India in 1919, but tragically, he passed away in 1920, which was just a year after he returned from his trip back home. He had reached the age of 32 when he died away, thus he was rather mature for his time. Ramanujan's sole living relative was his wife, Srimathi Janaki, who was also the only person to outlive him. After looking into his medical history, a lot of qualified people have come to the conclusion that the original diagnosis of tuberculosis that was given to him was incorrect. They claim that he did in fact suffer from hepatic amoebiasis, a disease that, at the time, might have been treated and even cured if it had been discovered in a timely manner. Because of the legacy that he left behind as a brilliant mathematician, both his life and his work have been honoured in a variety of different ways. His formulae continue to serve as the basis for a large number of complex equations and theories. Consequently, his life and his work have been recognised in a variety of different ways. In 1962, which was the year that commemorated the 75th anniversary of his birth, the Government of India released a commemorative postage stamp in honour of his life and the achievements that he made to the world. This was done in acknowledgment of both his life and the accomplishments that he made. In 2011, a fresh design for the stamp was introduced, and it was made available for purchase at that time.

Conclusion

Both the Government Arts College in Kumbakonam and the IIT Madras in Chennai have made it a habit to celebrate Ramanujan's birthday on December 22 as Ramanujan Day ever since the centennial year of his birth. Ramanujan earned his education at the Government Arts College in Kumbakonam. The International Center for Theoretical Physics (ICTP) has established a prize in the name of Ramanujan to be awarded to young mathematicians who are residents of developing countries. This endeavour was carried out in collaboration with the International Mathematical Union, which is in charge of the nomination of members of the prize committee. Ramanujan's legacy will live on through this prize. The SASTRA

Ramanujan Prize is a yearly award of $10,000 that will be given to a mathematician who is under the age of 32 and has made outstanding contributions to a field of mathematics that was inspired by Ramanujan. The award will be presented by the Society for the Advancement of Symbolic and Algebraic Research in India (SASTRA). The SASTRA Institution is a private educational establishment that can be found in Tamil Nadu. In the context of SASTRA University, the Srinivasa Ramanujan Centre, which was founded by SASTRA, has been categorised as an off-campus centre under the university's purview. This decision was made in line with the recommendations of a committee that was constituted by the University Grants Commission (UGC), which is a component of the Government of India. This decision was made in accordance with the recommendations of the committee. In addition, the House of Ramanujan Mathematics, a museum that celebrates both the life and the work of Ramanujan, may be found on this location. The property in Kumabakonam that Ramanujan had resided before to its purchase by SASTRA and subsequent renovation is now undergoing refurbishment.

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