



National Mathematics Day

Prelims: Srinivasa Ramanujan, Critical Thinking, UNESCO, Ramanujan number.

Mains: Contributions of Srinivasa Ramanujan, Achievements of Indians in Science & Technology

Why in News?

National Mathematics Day (NMD) has been celebrated every year on **22nd December** to mark the birth anniversary of [Srinivasa Ramanujan](#).

- On the 125th birth anniversary of Ramanujan, NMD was announced by the **then-Indian Prime Minister Manmohan Singh** in 2012.
- The day is celebrated annually with the aim to **make people aware of the importance of mathematics** and advancements and developments made in the field.

Who was Srinivasa Ramanujan?

- **About:**
 - Born on **22nd December, 1887** in Erode, Tamil Nadu.
 - **In 1903**, he secured a scholarship to the **University of Madras** but lost it the following year because he neglected all other subjects in pursuit of mathematics.
 - In 1911, Ramanujan published the first of his papers in the **Journal of the Indian Mathematical Society**.
 - **In 1913**, he began a correspondence with the **British mathematician Godfrey H. Hardy** which led to a special scholarship from the University of Madras and a grant from Trinity College, Cambridge.
 - **In 1918**, he was elected to the Royal Society of London.
 - Ramanujan was one of the youngest members of Britain's Royal Society and the **first Indian to be elected a Fellow of Trinity College, Cambridge University**.

- **Contributions to Mathematics:**
 - **Formulas and Equations:**
 - Ramanujan compiled around **3,900 results consisting of equations and identities**. One of his most treasured findings was his infinite series for Pi.
 - He gave several formulas to calculate the digits of Pi in many unconventional ways.
 - **Game Theory:**
 - He discovered a **long list of new ideas to solve many challenging mathematical problems**, which gave a significant impetus to the development of game theory.
 - His contribution to **game theory is purely based on intuition and natural talent** and remains unrivalled to this day.
 - **Ramanujan's Book:**
 - One of Ramanujan's notebooks was **discovered by George Andrews in 1976** in the library at Trinity College. Later the contents of this notebook were published as a book.
 - **Ramanujan number:**
 - 1729 is known as the Ramanujan number.
 - It is the **smallest number which can be expressed as the sum of two different cubes** in two different ways.
 - 1729 is the sum of the cubes of 10 and 9 - cube of 10 is 1000 and cube of 9 is 729 adding the two numbers results in 1729.
 - 1729 is also the sum of the cubes of 12 and 1, cube of 12 is 1728 and cube of 1 is 1 adding the two results in 1729.
 - **Other Contributions:**
 - Ramanujan's **other notable contributions include hypergeometric series**, the Riemann series, the elliptic integrals, mock theta function, the theory of divergent series, and the **functional equations of the zeta function**.
 - **Death:** He died on April 26th, 1920, at the age of 32, just after returning to India after a long illness.

UPSC Civil Services Examination Previous Year Question (PYQ)

Q. A recent movie titled The Man Who Knew Infinity is based on the biography of (2016)

- (a) S. Ramanujan
- (b) S. Chandrasekhar
- (c) S.N. Bose
- (d) C.V. Raman

Ans: (a)

Exp:

- 'The Man Who Knew Infinity' is a movie based on the biography of S. Ramanujan (1887-1920), an Indian mathematician, known for his immense contribution in mathematical analysis. He was a fellow of the Royal Society.
- Therefore, option (a) is the correct answer.

Source: ET

