



## Ramanujan Machine

Researchers from Technion – Israel Institute of Technology have developed a concept, which is described as a '**Ramanujan machine**'.

- It is named after renowned Indian Mathematician Srinivasa Ramanujan.
- The Ramanujan machine is **more of a concept than an actual machine**. It exists as a **network of computers** running algorithms dedicated to finding **conjectures** about fundamental constants in the form of continued fractions.
- The purpose of the machine is to come up with conjectures that humans can analyze and hopefully prove to be true mathematically.
  - Typically, people provide the input and the algorithm finds the solution. The Ramanujan machine **reverses the process**. So if a constant such as  $\pi$  is fed into the machine, it will generate a series whose value would lead towards  $\pi$ .
- **Conjectures:** These are mathematical statements that are, as yet, unproven. New conjectures in mathematics, however, have been scarce and sporadic.
  - The machine is created in the hope that their idea will inspire future generations of mathematicians.

## Srinivasa Ramanujan

- Ramanujan was born on 22<sup>nd</sup> December 1887 in a village some Erode (400 km from Chennai, then known as Madras). He was passionate about mathematics from a very young age.
- In India, December 22<sup>nd</sup> is celebrated as National Mathematics Day in the memory of Srinivasa Ramanujan.
- The famous British mathematician Godfrey Harold Hardy recognised his talent in 1913. It was a turning point in his life. Ramanujan went to Cambridge, on Godfrey Harold Hardy's invitation.
- Ramanujan made substantial contributions to the analytical theory of numbers and worked on elliptic functions. He also worked on the partition of the whole number, hypo geometric series and Euler's constant.
- His papers were published in English and European journals, and in 1918 he was elected to the Royal Society of London.
- He died on April 26<sup>th</sup>, 1920, at the age of 32, just after returning to India after a long illness.