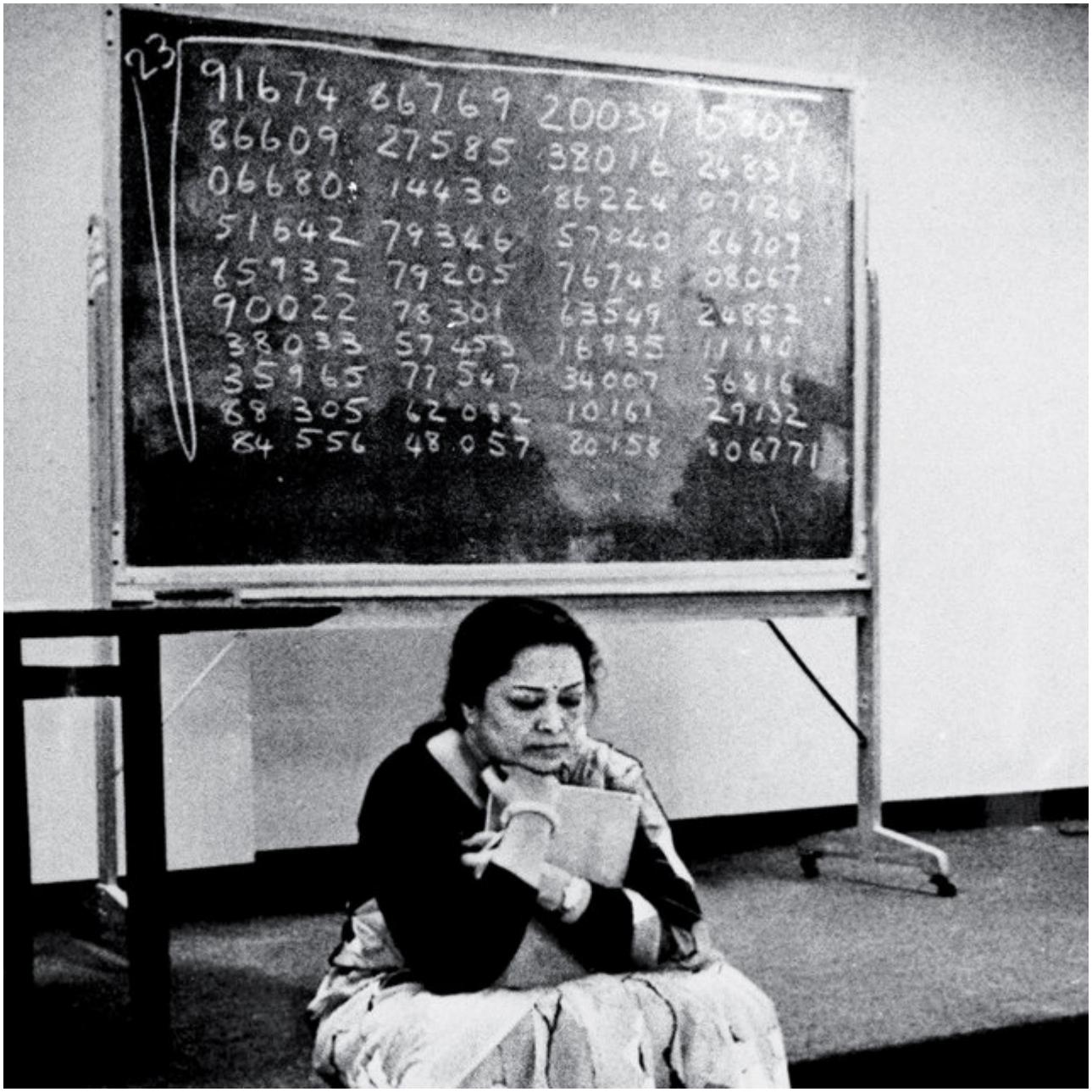
Twitter Thread by India Wants To Know - Panel Quiz Show

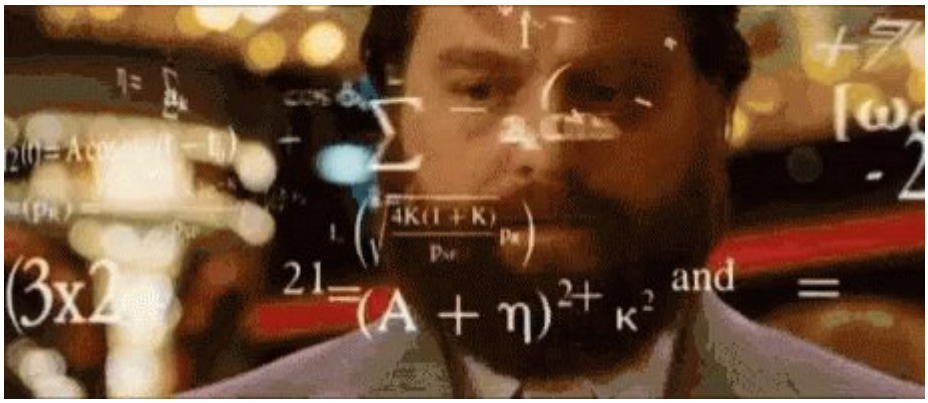


India Wants To Know - Panel Quiz Show
@IWTKQuiz

Shakuntala Devi is often described as "India's most famous woman mathematician". Her biopic led discussion like what does a mathematician do? Is mathematics all about performing massive computations? Or is there more to it? A ■on Indian women mathematicians by @kaneenikasinha



Recall one of the greatest mathematicians of the 20th century: Srinivasa Ramanujan. The image that he evokes is that of someone sitting quietly, writing complicated but beautiful equations involving many symbols in his notebooks.

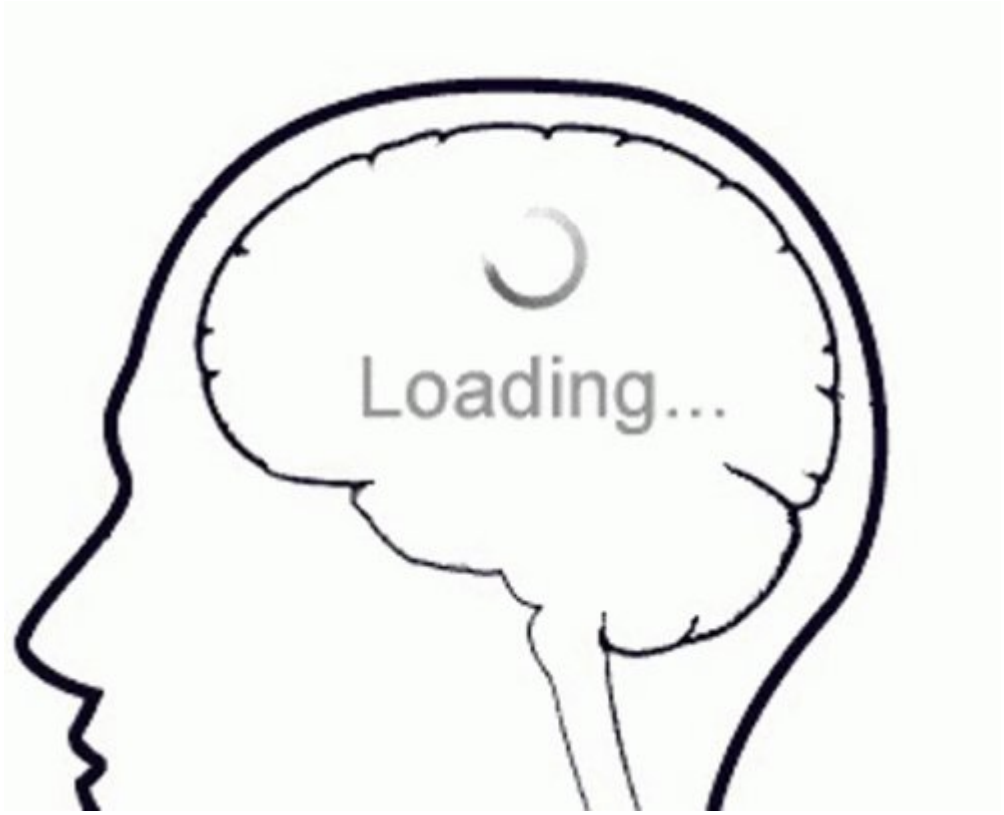


But, this thread attempts to explore the different things that a mathematician does. Along the way, we highlight some exceptional Indian women mathematicians as examples. #GWOM #womeninmath @GWOMaths @AWMmath

In an abstract sense, a mathematician observes beautiful and meaningful patterns in the universe. Their attempt is to also develop a precise and transparent language in which to explain these patterns.



Discovering and explaining these patterns often amounts to what most of us perceive as mathematics: solving challenging problems. Some problems take several decades and even centuries to solve: in the quest to solve them, mathematicians develop a new language/ techniques. #GWOM



Prof. Neena Gupta is an associate professor of mathematics at the Indian Statistical Institute, Kolkata. A few years, ago, she solved a very difficult, 70 year old problem in algebra: the "Zariski Cancellation Problem".



Prof. Gupta has won several accolades for her work, including the very prestigious Shanti Swarup Bhatnagar Award (awarded to Indian scientists of the highest caliber). Read more about her journey and accomplishments here:

https://t.co/Rsb2aLv4v1

Professor @ParimalaRaman, a senior and very highly honoured mathematician, has made many notable contributions to the study of quadratic forms (at the interface of number theory, algebra and algebraic geometry).



She spent several years @TIFRScience in Mumbai. The first woman to win the Bhatnagar award in math, she was also a plenary speaker at the International Congress of Mathematicians 2010 (one of the highest international honours in mathematics).

Incidentally, the second woman to win the Bhatnagar award in Mathematics, Prof. Sujatha Ramdorai, is a former doctoral student of Prof. Parimala! Prof. Ramdorai has made exceptional contributions to algebraic number theory and arithmetic geometry.



After spending several years @TIFRScience, she currently holds a Canada Research Chair @UBC.
Prof. Ramdorai has also worked with the Indian government in several capacities for mathematics education in India. She was a member of the PM's Scientific Advisory Council from 2009-14.

Producing good research is an important component of mathematics as it leads to new directions which are pursued by the larger research community. But, this is a good time to pause and reflect upon the different ways in which a mathematician can contribute to the nation.

A country like ours has a large number of students who are hungry for knowledge. They seek every possible opportunity to learn and grow: sadly, our educational infrastructure has not been adequate to meet the needs of the future of our nation.

In this context, a mathematician has a huge role in nation building over and beyond their research contributions: by teaching students at all levels, instilling passion for the subject, inspiring/enabling them to pursue their dreams, and by building institutions.

A name that almost immediately comes to mind in this regard is that of Professor Shobha Madan. Professor Madan is a mathematician in the area of harmonic analysis. She has spent several fruitful years as a professor @IITKanpur and is known to be an exceptional teacher.



Today, almost any research/educational institute in India is likely to have a faculty member who studied mathematics @IITKanpur. Many of these IITK students, who became mathematicians in the last few decades, attribute their love for the subject to Professor Madan!

Through her passion for studying and teaching mathematics, Professor Madan has contributed in building several mathematics departments in India. As a distinguished visiting professor @IITGoaofficial , she is now helping to build the mathematics group at this young institution.



We now remember a mathematician, great educationist and institution builder, who essentially started her career with India's independence! Professor Vanaja Iyengar was the founder vice-chancellor of Sri Padmavati Mahila Visvavidyalayam, a university for women in Tirupati.

For her life long contributions to mathematics education in India, Professor Iyengar received the Padma Shri in 1987.

The above were a few examples of some notable Indian women mathematicians. These examples are by no means exhaustive. These are simply a few among several motivated, ambitious and dedicated research mathematicians in India.

These amazing women set the "stage" on fire, not with their computational prowess, but by communicating their mathematical discoveries, knowledge and insights to a large community of students, professional mathematicians and amateurs.



But, they are more likely to be found at their desks, working quietly, with focus and determination, changing the world "one theorem at a time".

Disclaimer: in this thread, we have focused on the practice of mathematics in academia. This, in no way, implies that being a professor or a scientist at a research university is the only way to practice mathematics.

Mathematics has widespread applications in the "real" world; for example, cryptography, data sciences, space science. But, to paraphrase how a mathematician typically concludes a research article, "we relegate this theme to a future work." :-)