



Contribution of Female Mathematician

Smt. S.R.Joshi

Head, dept of Mathematics, S.P.H. Mahila Mahavidyala
Malegaon Camp

Introduction:

Knowledge of Mathematics is essential for all members of our society. To participate fully in our democratic process and to be unrestricted in career choice and advancement, people must be able to understand and apply mathematical ideas. Unfortunately, certain groups are under presented in mathematics courses and do not achieve upto their potential. Mathematics is a male domain, where does this leave women who do mathematics? For a long time, woman have struggled to gain complete acceptance in mathematics field. There have been several women throughout history who have made significant contributions to and impacts in the field of mathematics. Begining in the 6th century BC with Pythagoreans, the ancient Greeks began a systematic study of maths as a subject in its own right with Greek mathematics. Archimedes is father of Maths and Aryabhata is father of Indian maths. The decimal numbers system in worldwide use today was first recorded in Indian mathematics.

The purpose of this paper is to explore the impact and experiences of female mathematicians. Hypatia is recognized as the first woman to have significant impact in field of mathematics and some have referred to her as mother of mathematics Hypatia was the first women known to have taught mathematics. Her father Theon was a famous mathematician in Alexandria who wrote commentaries on Euclid's elements. He taught her daughter maths and astronomy and sent her to Athens to study the teachings of Plato and Aristotle. But she wrote commentaries on astronomy and philosophy in the period C.335-415. Sophie Germain (1776-1831) was only 13 when she developed an interest in mathematics Germain's family tried to discourage her academic leanings. Since woman's educational opportunities were limited, Germain studied secretly at the Ecole polytechnic using the name of a previously enrolled male student. She was one of the pioneers of elasticity theory and won the grand prize from the Paris Academy of sciences for her essay on the subject. Today this prize is known as Sophie Germain prize.

Sofia kovalevskaya (1850-1891) was the first major Russian female mathematician. She is responsible for important contribution to analysis, partial differential equation and mechanics. She was the first women appointed to a full professorship in Northern Europe as well



is one of the first female editors to work for scientific journal.

A German Jewish mathematician, Noether is known for her landmark contribution to abstract algebra and theoretical physics she developed the theories of rings, fields and algebras. Hayes (1890-1980) was the very first African-American woman to gain Ph.D in mathematics. She created and chaired the Division of Mathematics and Business Education. Mary Cartwright (1900-1998) a British mathematician, the first woman to obtain first class degree. She returned to Oxford in 1928 for her Ph.D where she wrote her thesis on zeroes of entire function. She became the first female mathematician to be elected Fellow of Royal Society.

An American physicist, space scientist and mathematician, Katherine Johnson contributed to America's aeronautics and space programs with the early application of digital electronic computers at NASA. She is known for accuracy in computerized celestial navigation and she calculated the trajectory for Project Mercury and 1969 Apollo 11 flight to the moon. In 1938 Katherine became the first African American woman to desegregate the graduate school at West Virginia University, on Nov 24, 2015 President Barack Obama presented Johnson with the Presidential Medal of Freedom for her pioneering example of African American woman in STEM.

Shakuntala Devi (4 Nov 1929-21 April 2013) was the first Indian mathematician. She known as Human calculator or human computer she demonstrating the multiplication of two 13 digit number. She wrote numbers of books including novels as well as text books of math, puzzles, astrology. She travelled the world demonstrating her arithmetic talents including a tour of Europe in 1950. In 1980 she contested in Lok Sabha election as an independent. Sujata Ramdorai is an algebraic number theorist known for her work on Laxman's theory. She is professor of maths and Canada Research Chair at University of British Columbia. Raman Parimala is an Indian mathematician known for her contribution to algebra. She was an invited speaker at the international congress of maths in Zurich in 1994 and gave talk study of quadratic forms-some connection with Geometry. Vanaja Iyengar was an Indian mathematician, educationist and founder vice-chancellor of Sri Padmavati Mahila Visvavidyalayam Tirupati. In 1987 Government of India awarded Iyengar Civilian Honour of Padma Shri.

Conclusion:

All these great female mathematicians made revolutionary contributions. We have notable woman to thank for modern computation, revelations.

- References:
- 1) Grinstein Louise and Paul J Campbell woman of Mathematics.
 - 2) Morrow, Charlene and Teri Perl Notable Women in Mathematics
 - 3) Murray, Margaret A.M. Women Becoming Mathematicians.