Mathigon

Women of Mathematics

1815 – 1852
UK

Ada Lovelace

wrote one of the first computer programs in history: an algorithm to calculate *Bernoulli numbers*. She also worked with *Charles Babbage* on the Analytical Engine.

1882 – 1935
Germany

Emmy Noether

discovered the that the symmetries of space-time are related to *conservation laws* in physics, and can be used to derive the most fundamental laws of nature.

1902 – 1997
USA

Mina Rees

was the first female president of the American Association for the Advancement of Science. She also received 18 honorary doctorates!

1917 – 1996
UK

Joan Clarke

was one of the cryptanalyst working at Bletchley Park during the Second World War, to decrypt the German Enigma code. She received an MBE for this work.

1923 – 2017
Canada

Cathleen Morawetz

studied the partial differential equations that describe the motion of fluids. She was the first female applied mathematician in the National Academy of Sciences.

born 1954
Belgium

Ingrid Daubechies

studied different types of wavelets, which are now an essential part of image compression formats like JPEG. She was the first female president of the IMU.

1776 – 1831
France

Sophie Germain

won the grand prize from the Paris Academy for her work about elastic surfaces. She also made considerable progress in trying to solve *Fermat's Last Theorem*.

1850 – 1891
Russia

Sofia Kovalevskaya

worked on analysis, partial differential equations, and mechanics. She was the first female editor of a scientific journal, and the first woman with a doctorate in maths.

1900 – 1998
UK

Mary Cartwright

studied differential equations and pioneered a field that would later be known as *Chaos theory*. She discovered the first examples of the "butterfly effect".

1912 – 2014
UK

Kathleen Ollerenshaw

was both a mathematician and a politician. She studied *"most-perfect pandiagonal magic squares"*, president of the IMA, and an amateur astronomer.

1919 – 1985
USA

Julia Robinson

worked on computability theory and decision problems. She helped solve Hilbert's 10th problem about *Diophantine equations*, and was president of the AMS.

1932 – 1995
USA

Vivienne Malone-Mayes

studied functional analysis, non-linear operators and differential equations. She also developed new methods for teaching mathematics.

born 1942
USA

Karen Uhlenbeck

is one of the world's leading experts on *partial differential equations*, and recipient of the Abel prize. Her work had a pivotal impact on topics like mathematical physics.

1977 – 2017
Iran

Maryam Mirzakhani

is the first and only woman to receive a Fields medal. She worked on *dynamical systems* and geometry, and was fascinated by the beauty of mathematics.

1718 – 1799
Italy

Maria Agnesi

was the first female maths professor at a university, and wrote a popular textbook about *calculus*. One of the functions she studied is now called the "Witch of Agnesi".

1780 – 1872
Scotland

Mary Sommerville

was called the "Queen of Science" in her obituary. She first suggested the existence of Neptune and was an excellent writer and communicator of science.

1860 – 1940
Irish

Alicia Boole Stott

had an impressive grasp of four-dimensional geometry from a young age, and coined the term "polytrope" for a multi-dimensional convex solid.

1901 – 1961
Russia

Nina Bari

was the first female mathematician accepted at the Moscow State University. She studied trigonometric series and primitive functions.

1914 – 1979
USA

Marjorie Lee Browne

was the third African- American women to receive a PhD in mathematics. She studied Groups and Topology, and promoted further education for secondary teachers.

1922 – 2004
Russia

Olga Ladyzhenskaya

studied partial differential equations, fluid dynamics, and the Navier-Stokes equations. Thoughrout her life, she published more than 200 scientific works.

born 1935
Romania

Alexandra Bellow

studied ergodic theory, probability, number theory and analysis – especially "lifting theory". She is an Emerius Professor at Northwestern University.

born 1949
Taiwan

Fan Chung

studies graph theory, discrete geometry, combinatorics and networks. She worked at Bell Labs and the University of Pennsylvania and has an Erdős number of 1.

c. 360 – 415
Roman Empire

Hypatia

taught at the library of Alexandria, and wrote commentaries on many scientific books. She also constructed astrolabes and hydrometers.

1768 – 1797
China

Wang Zhenyi

studied many scientific subjects, despite laws preventing women from receiving higher education. She wrote about topics in astronomy and trigonometry.

1820 – 1910
UK

Florence Nightingale

used statistics to evaluate different medical treatments. She created some of the first "infographics" and helped promote new careers for women.

1890 – 1980
USA

Euphemia Haynes

was the first African-American woman to earn a PhD in mathematics. She chaired the Washington DC board of education and helped train many other teachers.

1906 – 1992
USA

Grace Hopper

was a pioneer of computer science – as well as a US Navy admiral. She invented programming languages like COBOL which are still being used today.

1918 – 2020
USA

Katherine Johnson

worked at NASA, where she helped calculate the orbital trajectories and launch windows for the Mercury, Apollo and Space Shuttle missions.

1933 – 2011
USA

Annie Easley

was a computer scientist and rocket scientist at NASA. She wrote software for the Centaur rocket stage and studied batteries and renewable energy sources.

born 1945
Ivory Coast

Joséphine Guidy Wandja

is the first African woman with a PhD in mathematics. She is the president of the International Committee on Mathematics in Developing Countries.

born 1984
Ukraine

Maryna Viazovska

solved the sphere-packing problem in 8 and 24 dimensions. She has received numerous awards, including the New Horizons Prize and the Clay Research Award.

1700 1800 1900 1950