

SOPHIE GERMAIN (1776-1831)

PIONEERING FRENCH MATHEMATICIAN &
TRAILBLAZER FOR WOMEN IN SCIENCE

EARLY LIFE & UPBRINGING

BORN: APRIL 1, 1776, IN PARIS, FRANCE

FAMILY: DAUGHTER OF A PROSPEROUS MERCHANT; EDUCATED AT HOME

INSPIRATION: AT AGE 13, SHE DISCOVERED MATHEMATICS WHILE READING ABOUT ARCHIMEDES, ESPECIALLY THE STORY OF HIS DEATH DURING THE ROMAN INVASION. THIS SPARKED HER LIFELONG FASCINATION WITH MATH.

DRAWBACKS: WOMEN WERE NOT ALLOWED TO ATTEND UNIVERSITIES OR JOIN SCIENTIFIC INSTITUTIONS. STUDIED SECRETLY USING BOOKS FROM HER FATHER'S LIBRARY.

PERSISTENCE: SHE OBTAINED LECTURE NOTES FROM THE NEWLY FOUNDED ÉCOLE POLYTECHNIQUE BY USING A MALE PSEUDONYM, "M. LEBLANC".

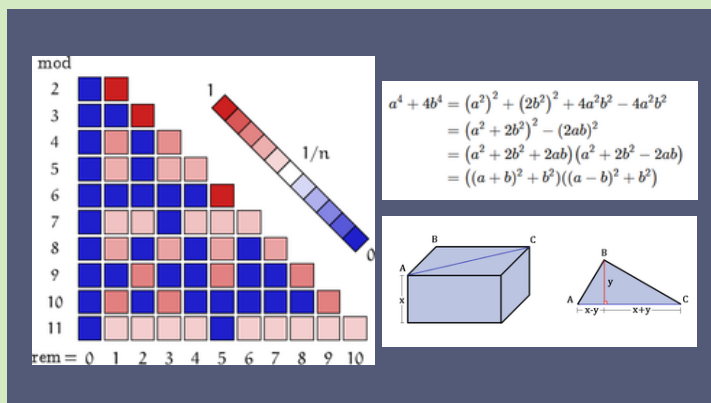


MAJOR CONTRIBUTIONS TO MATHEMATICS: NUMBER THEORY

- DEVELOPED PIONEERING WORK RELATED TO FERMAT'S LAST THEOREM.
- INTRODUCED WHAT ARE NOW CALLED SOPHIE GERMAIN PRIMES, PRIME NUMBERS p WHERE $2p + 1$ IS ALSO PRIME.
- HER IDEAS LAID GROUNDWORK AND WERE LATER USED BY MATHEMATICIANS LIKE LEGENDRE AND KUMMER.

ELASTICITY & PHYSICS

- ENTERED A COMPETITION AT THE PARIS ACADEMY OF SCIENCES TO EXPLAIN THE MATHEMATICS OF VIBRATIONAL PATTERNS ON ELASTIC SURFACES.
- WON THE PRIZE AFTER SEVERAL ATTEMPTS; BECOMING THE FIRST WOMAN TO WIN A PRIZE FROM THE ACADEMY.
- HER WORK BECAME THE FOUNDATION OF THE THEORY OF ELASTICITY AND INFLUENCED MODERN ENGINEERING.

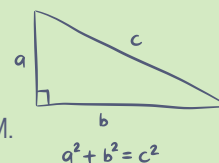


LEGACY

- RECOGNIZED TODAY AS ONE OF THE MOST IMPORTANT WOMEN IN THE HISTORY OF MATHEMATICS.
- THE SOPHIE GERMAIN PRIZE AND INSTITUTIONS BEARING HER NAME HONOR HER CONTRIBUTIONS.
- HER PERSEVERANCE CONTINUES TO INSPIRE MATHEMATICIANS AND STUDENTS WORLDWIDE.

ADVOCACY & INFLUENCE

- MAINTAINED CORRESPONDENCE WITH MAJOR MATHEMATICIANS INCLUDING CARL FRIEDRICH GAUSS, WHO PRAISED HER FOR EXCEPTIONAL ORIGINALITY.
- SERVED AS AN EARLY MODEL OF INTELLECTUAL INDEPENDENCE FOR WOMEN IN STEM.



CITE FOR IMAGE:

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