

"A condition of [Winifred Edgerton's] admission was to dust the astronomical [instruments] and so comport herself as not to disturb the men students."

# How Many Women Mathematicians Can You Name?

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Until my last semester as an undergraduate student in 1964, my answer to the question of the title would have been "One: Emmy Noether, the German algebraist." That semester a woman mathematician, Yvonne Choquet-Bruhat, was a visiting professor at my undergraduate institution, Cornell, so my list increased to two! If you restrict your answer to those women who were active by the middle of the twentieth century, you are unlikely to be able to name more than seven: Hypatia (c. 370–415); Gabrielle-Émilie Le Tonnelier de Breteuil, Marquise du Châtelet (1706–1749); Maria Gaetana Agnesi (1718–1799); Sophie Germain (1776–1831); Mary Somerville (1780–1872); Sofia Kovalevskaja (1850–1891), and Emmy Noether (1882–1935).

By the time I got my PhD in 1972, my list of women mathematicians active by mid-century had increased by one, Dorothy Maharam Stone, whom I met when she was visiting Yale. However, there were a number of women on the mathematics faculty of my doctoral institution, the University of Maryland, so I could name a number of women who had become mathematicians in the 1950s and 1960s, including my dissertation advisor, Carol Karp. In the late 1970s I became interested in the history

of women in mathematics and I have been working in that field ever since, collaborating with Jeanne LaDuke of DePaul University. What we learned is that women have been mathematicians for longer, and in greater numbers, than most people, even most mathematicians, realize. The second half of this paper summarizes and updates a paper Jeanne LaDuke and I wrote in 1987, "Women in the American mathematical community: The pre-1940 PhDs." (*Mathematical Intelligencer* 9 no 1: 11–23); it also relies on another of our papers, "Contributors to American mathematics: An overview and selection" (in G. Kass-Simon and Patricia Farnes (eds.), *Women of Science: Righting the Record*, Bloomington: Indiana University Press, 1990).

Rather than repeat the often-told tales of the seven famous women mathematicians, I will start in the late nineteenth century when English-speaking women had already had access to training in mathematics beyond arithmetic for about half a century and some were beginning to receive real training as mathematicians. While it was still unusual for women to receive higher education of any sort, it was not a secret that when they did, they studied mathematics. In fact, in 1894 George Bernard

Shaw wrote about it in his play, *Mrs. Warren's Profession*. In the first act, the following dialogue takes place between a middle-aged gentleman, Mr. Praed, and Mrs. Warren's twenty-two-year-old daughter, Vivie. Vivie has just taken the mathematical tripos, the honors examination in mathematics at Cambridge, and has achieved the same score as the third wrangler, that is the male candidate with the third highest score. Mr. Praed is quite impressed with Vivie's accomplishment but Vivie tells him that she "wouldn't do it again for the same money," explaining that

Mrs. Latham, my tutor at Newnham, told my mother that I could distinguish myself in the mathematical tripos if I went in for it in earnest. The papers were full just then of Philippa Summers beating the senior wrangler... and nothing would please my mother but that I should do the same thing. I said flatly it was not worth my while to face the grind since I was not going in for teaching; but I offered to try for fourth wrangler or thereabouts for £50. She closed with me at that, after a little grumbling; and I was better than my bargain. But I wouldn't do it again for that. £200 would have been nearer the mark.

