ROSENBAUM, Louise (Johnson). January 21, 1908–January 16, 1980.
University of Colorado (BA 1928, MA 1933, PhD 1939).

Laura Louise Johnson was born in Carrollton, Illinois, the youngest of five children of Ida Jane (Taylor) (1868–ca. 1940) and William Foster Johnson (1868–ca. 1939) of Illiniois. Her parents married in Illinois in June 1892, and all of their children were born there. They were Minnie E. (1893–1980), Mildred M. (1894–1983), Viola C. (1897–1970), Ebert Taylor (1899–1949), and Laura Louise, who was known as Louise. The family moved from Illinois to a farm outside of Boulder, Colorado, in about 1918, when Louise Johnson was ten. She attended country school through grade nine and at age thirteen moved by herself into Boulder in order to attend a school that offered a stronger preparatory program.

After completing high school at sixteen, Johnson entered the University of Colorado, where she did all of her undergraduate and graduate work. Burton W. Jones and Robert A. Rosenbaum recalled that her financial resources for her undergraduate work consisted of fifty dollars from her parents and her salary from a job as a checker in the university cafeteria during all her years as an undergraduate. They also reported that "she might have majored in geology if she could have afforded the laboratory and field trip fees" (Jones and Rosenbaum, 17).

Louise Johnson taught in high schools in eastern Colorado for two years after receiving her bachelor's degree in 1928. In May 1930 she was enumerated as a high school teacher in Armel in Yuma County. That autumn she returned to the University of Colorado and began her graduate studies working as an assistant in mathematics for at least two years and as an instructor in the extension division of the university most of the rest of the time she was there. "For administrative reasons, she was always described as a 'part-timer', even during those (rare) quarters when she taught 17 or 18 hours per week, the full-time load being 16 hours. With scrupulous attention, [Aubrey] Kempner saw to it that she received <u>more</u> than a full-time salary on such occasions" (Jones and Rosenbaum, 17). One year in the early 1930s she also taught mathematics at a Civilian Conservation Corps (CCC) camp, a considerable distance from Boulder. Johnson received her master's degree in 1933 after completing a thesis directed by Kempner, who also directed her doctoral dissertation in number theory. Paul Erdös wrote the review of the article based on her dissertation for the *Mathematical Reviews* and "became a good friend because of his interest in [her] results" (Rosenbaum correspondence 1998).

Johnson received one of two PhD's awarded in mathematics by Colorado in 1939. The other went to Marjorie Beaty. They were the fourth and fifth doctorates given in mathematics at Colorado since the first in 1906; the sixth was not awarded until 1951.

After Johnson finished her work for the PhD, "she was told by Kempner that there was really no future for her in Boulder since two of the four professorial members of the department were women" (Jones and Rosenbaum, 18). One of the women was Claribel Kendall, an associate professor and native of Colorado who had received a PhD from the University of Chicago in 1921. The other was Frances Stribic, an assistant professor who had completed all her work for a PhD except for her dissertation.

In the fall of 1939 Johnson was one of four fellows who had gone to Reed College in Portland, Oregon, to participate in a mathematics teaching seminar sponsored by

the General Education Board and run by Reed's Professor F. L. Griffin. One of the other teaching fellows that year was Robert A. Rosenbaum. Rosenbaum, who was born in 1915 in New Haven, Connecticut, shortly after his father, Joseph Rosenbaum, had earned a PhD in mathematics from Cornell, had earned his bachelor's degree from Yale in 1936. He had spent the year 1936–37 as a fellow of the Henry Fund in Cambridge. After the 1939–40 academic year both Johnson and Rosenbaum stayed on at Reed as instructors. They were married on August 1, 1942. R. A. Rosenbaum spent the next three years in the navy, while Louise Rosenbaum remained at Reed College, as instructor until 1943 and then as assistant professor after 1943. While he was a naval aviator in the Pacific, she "continued to teach at Reed, carrying a particularly heavy load in a military pre-meteorology program" (Jones and Rosenbaum, 18). She apparently did not spend the entire war years in Oregon, since she reported an address in Hollywood, Florida, in the 1944 MAA membership list. In F. L. Griffin's 1969 reminiscences he noted that when "the war was over ... Reed got our Bob and Louise Rosenbaum back, a great day for Reed" (466).

Robert Rosenbaum returned to Reed as assistant professor in 1945–46. He finished his PhD from Yale in 1947, returned to Reed as associate professor in the fall of 1947, and was promoted to professor in 1949. In 1950–51 he was a visiting professor at Swarthmore College. Louise and Robert Rosenbaum remained on the faculty at Reed until 1953, when Robert Rosenbaum joined the faculty at Wesleyan University in Middletown, Connecticut, as professor of mathematics. He later became dean of science, provost, academic vice president and provost, and acting president. In 1985 he was named University Professor of Mathematics and the Sciences, emeritus. During 1958–59 he was an NSF fellow at the Mathematics Institute at Oxford.

The Rosenbaums had three sons: Robert Johnson, Joseph Griffin, and David William, born in 1943, 1946, and 1948, respectively. Jones and Rosenbaum report that while the Rosenbaums were at Reed "despite the duties of a growing family ... there was no semester during which Louise did not teach at least one course" (18). They add that she also directed "notable undergraduate theses" and served on major college committees. After the Rosenbaums moved to Connecticut permanently in 1953, Louise Rosenbaum's regular teaching stopped. She had occasional visiting appointments at Trinity College in Hartford, Connecticut College in New London, and was a visiting faculty member at Smith College in 1973–74 when Robert Rosenbaum was a visiting professor at the nearby University of Massachusetts. She also was a professor at Saint Joseph College in West Hartford. She stayed active in mathematics education, serving on a committee of the School Mathematics Study Group (SMSG) and directing summer institutes for teachers in Connecticut and Oregon. During the 1950s and 1960s, she and her husband published, and revised several times, a pamphlet listing books appropriate for high school libraries. She also wrote a short book on mathematical induction.

Chief among Louise Rosenbaum's interests was hiking. While at Colorado she helped to arrange and guide tours of students into the mountains by bus or backpacking and climbed many of the high peaks of Colorado. She was also an expert skier, who skied in Colorado, Oregon, and Europe. Her husband reported that she became a member of the Society of Friends, "finding its philosophy, values, and social concerns particularly appealing" (Rosenbaum correspondence 1998).

Louise Rosenbaum died in Middletown, Connecticut, in 1980 shortly before her seventy-second birthday after having suffered from a progressive circulatory disorder for nearly a decade.

Organizational affiliations: AMS, MAA, AAUP, Phi Beta Kappa.

Thesis and dissertation:
1933 [Johnson, L. L.] On transfinite numbers. MA thesis, University of Colorado, directed by Aubrey John Kempner.
1939 [Johnson, L. L.] On the diophantine equation $x(x + 1) \cdots (x + n - 1) = y^k$. PhD dissertation, University of Colorado, directed by Aubrey John Kempner. See also **1940a**.

Publications:
1940a [Johnson, L. L.] On the diophantine equation $x(x + 1) \cdots (x + n - 1) = y^k$. *Amer. Math. Monthly* 47:280–89. Published version of PhD dissertation. Reviews: *JFM* 66.0147.03 (H. H. Ostmann); *MR* 1,291f (P. Erdös); *Zbl* 023.20502 (H. Rohrback). Presented to a meeting of the MAA, Laramie, WY, 28–29 Apr 1939; abstract: *Amer. Math. Monthly* 46:531 #2.
1940b with F. L. Griffin, H. E. Goheen, R. A. Rosenbaum, and H. Scheffé. *A Report on the Mathematics Teaching Seminar.* Reed College Bulletin, November.
1956 with R. A. Rosenbaum. *Bibliography of Mathematics for Secondary School Libraries.* Middletown, CT: Wesleyan University, Department of School Services and Publications. Second, third, fourth, and fifth eds.: 1957, 1959, 1961, and 1964. Microfilm of 5th ed.: 1969. Ann Arbor, MI: University Microfilms.
1966 *Induction in Mathematics.* Houghton Mifflin Mathematics Enrichment Series. Boston: Houghton Mifflin Co.

References to: AmMSc 7–8, 9P; BioWMath (Reprint of Jones and Rosenbaum 1982). Jones, Burton W. and Robert A. Rosenbaum. "Louise Johnson Rosenbaum." *AWM Newsletter* 12 (Jul-Aug 1982): 16–19. Edited version in *Complexities: Women in Mathematics*, edited by Bettye Anne Case and Anne M. Leggett (Princeton: Princeton University Press, 2005), 202–04.

Other sources: Application for social security account 1951; communication with Robert A. Rosenbaum 1998; F. L. Griffin, "Some Teaching Reminiscences," *Amer. Math. Monthly* 76 (1969): 460–68; Jones and Thron, *A History of the Mathematics Departments of the University of Colorado*; WhoAm 40 (Rosenbaum, Robert Abraham); US Census 1900, 1910 IL, 1920, 1930 CO.

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