GRIFFITHS, Lois W. June 27, 1899–November 9, 1981.
University of Washington (BS 1921, MS 1923), University of Chicago (PhD 1927).

Lois Wilfred Griffiths was born in Chagrin Falls, Ohio, the second of two children of Lena (Jones) (1872–1956) and Frederick William Griffiths (1867–1932). Some sources give her mother's birthplace as Iowa and others as Kansas. Her mother graduated from the elementary course at the Kansas State Normal School in Emporia (now Emporia State University) in 1894 and taught school at various times; in 1894 her home address was given as Lehigh, Indian Territory (now Oklahoma). F. W. Griffiths was born in Wales, immigrated to the United States in 1880, did his precollege schooling in New York State, and received a BA degree from Oberlin College in 1893. He earned a BD degree from Oberlin Theological Seminary in 1896 and was ordained a Congregational minister before marrying Lena Jones on December 31, 1896, in Ardmore, Indian Territory (now Oklahoma). F. W. Griffiths was a minister in Michigan 1896–97, in Ohio 1898–99, and in Jennings, Oklahoma Territory, 1899–1900 before traveling for the *Minneapolis Journal* 1900–04. The family moved to Seattle in 1904, and F. W. Griffiths was a pastor for a few years, was vice president of a title guaranty and abstract company 1908–10, and was principal and then superintendent of schools outside of Seattle until 1919. He was senior clerk in the accounting department of a railroad company in Seattle from 1920 until his death a dozen years later. Lois Griffiths' older brother, Harold Frederick, was born in 1898, also in Ohio, and after studying three years at the University of Washington, served in the Navy and later went into business in Seattle.

Lois Griffiths received her elementary and secondary education in the public schools in the state of Washington before entering the University of Washington. Some of the time she was at Washington, she served as assistant to the comptroller of the university. Among her professors was E. T. Bell. She received her bachelor's degree in 1921 and her master's degree two years later.

Griffiths entered the University of Chicago in October 1925 and attended for seven quarters. She completed her dissertation under the direction of L. E. Dickson and in her dissertation vita thanked Professors E. H. Moore, Bell, G. A. Bliss, and Dickson for their guidance and inspiration.

After receiving her doctorate in 1927, Griffiths was immediately hired by Northwestern University in Evanston, Illinois, for what was to be her only teaching position. She was instructor 1927–30, assistant professor 1930–38, associate professor 1938–64, and emeritus associate professor after her retirement in 1964. Her promotion to associate professor came after she had spent part of her 1936–37 sabbatical in Cambridge, England. In 1947 Griffiths published a textbook that was an expansion of typewritten notes she had copyrighted in 1945 as "Determinants and Systems of Linear Equations" and in 1946 as "Introduction to the Theory of Equations." In the late 1940s she produced two additional sets of notes, "Outline of the Theory of Groups" (c1948) and "Matrices and Linear Dependence" (c1949), but did not publish either of them.

Griffiths published a dozen research articles over a twenty-one year period. These articles appeared in the *American Journal of Mathematics*, the *Annals of Mathematics*, and the *Bulletin* of the AMS. In 1942 she published an expository article in the *American Mathematical Monthly* on representing numbers as sums of polygonal

numbers; between 1930 and 1945, seven of her eight research papers were concerned with polygonal numbers. The eighth, "On hypergroups, multigroups, and product systems," appeared in 1938 and was referenced by other authors at least through 1986. From 1939 through the early 1940s, Griffiths also reviewed textbooks for the *National Mathematics Magazine* and regularly served as a referee for the *Bulletin* of the AMS in the early 1930s and for the *Monthly* through most of the 1940s.

At various times Griffiths spoke to both the junior and the senior mathematics clubs at the University of Chicago, to the Northwestern mathematics club, and to the Women's Mathematics Club of Chicago. She was a charter member of the Northwestern chapter of Sigma Delta Epsilon. In 1952 she was given an honorary life membership in the Northwestern University Alumni Association. Her papers at Northwestern University include teaching files, material related to her publications, and mathematical correspondence, particularly with E. T. Bell in the 1940s. She also maintained a close relationship with the University of Chicago and attended seminars and meetings of the senior mathematics club there.

Griffiths and her mother made a trip to Europe in 1935 and returned to the United States in September of that year. Her mother came to live with her in the mid-1940s and remained until her mother's death in Evanston in 1956. In about 1940, Griffiths indicated that her favorite recreation was walking. Acquaintances of Griffiths told one of the authors that she loved to garden and to cook and liked classical music and kept notes on what she listened to on the radio.

Lois Griffiths remained in Evanston after her retirement and died in nearby Skokie in 1981 as a result of heart disease; she was eighty-two years old at the time of her death in the Old Orchard Manor Nursing Home. She bequeathed her house to the University of Chicago and had provided that her body be used for scientific study after her death.

Organizational affiliations: AMS, MAA, Sigma Delta Epsilon, Phi Beta Kappa, Sigma Xi.

Thesis and dissertation:

1923 Contact curves of the rational cubic. MS thesis, University of Washington. Typescript. See also **1925**.

1927 Certain quaternary quadratic forms and diophantine equations by generalized quaternion algebras. PhD dissertation, University of Chicago, directed by Leonard Eugene Dickson. Typescript. Abstract: *University of Chicago Abstracts of Theses* (Science Series) 5:37–41. See also **1928**.

Publications:

1925 Contact curves of the rational plane cubic. *Bull. Amer. Math. Soc.* 31:312–17. Published version of MS thesis. Reviews: *JFM* 51.0513.05 (E. Löffler); *Rev. semestr. publ. math.* 32, pt. 2: 14–15 (D. J. Korteweg). Presented to the AMS, Seattle, WA, 22 Dec 1923; abstract: *Bull. Amer. Math. Soc.* 30:196–97 #6.

1928 Generalized quaternion algebras and the theory of numbers. *Amer. J. Math.* 50:303–14. Published version of PhD dissertation. Reviews: *JFM* 54.0164.01 (R. Baer); *Rev. semestr. publ. math.* 34, pt. 1: 4 (W. G. J. ten Pas). Presented by title as "Certain quaternary quadratic forms and diophantine equations" to the AMS, Columbus, OH, 9 Sep 1926; abstract: *Bull. Amer. Math. Soc.* 32:599 #64.

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1930 A generalization of the Fermat theorem on polygonal numbers. *Ann. of Math.* 2nd ser., 31:1–12. Review: *JFM* 056.0883.05 (R. Brauer). Parts II and III: **1944** and

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1936 Representation as sums of multiples of generalized polygonal numbers. *Amer. J. Math.* 58:769–82. Reviews: *JFM* 62.1136.02 (H. Behrbohm); *Zbl* 015.20003 (R. Hull). Presented as "Representation by generalized polygonal numbers" to the AMS, Cambridge, MA, 3 Sep 1936; abstract: *Bull. Amer. Math. Soc.* 42 (7, pt. 1): 498 #314.
1938 On hypergroups, multigroups, and product systems. *Amer. J. Math.* 60:345–54. Reviews: *JFM* 64.0056.02 (H. Zassenhaus); *Zbl* 018.39303 (R. Baer). Presented by title to the AMS, Indianapolis, IN, 30 Dec 1937; abstract: *Bull. Amer. Math. Soc.* 44 (1, pt. 1): 33 #21.
1939 Review of *Introduction to the Theory of Groups of Finite Order*, by R. D. Carmichael. *Natl. Math. Mag.* 13:353–54.
1940 Review of *General Analysis, Part II. The Fundamental Notions of General Analysis*, by E. H. Moore and R. W. Barnard. *Natl. Math. Mag.* 14:295–96.
1941a Universal functions of extended polygonal numbers. *Amer. J. Math.* 63:726–28. Reviews: *JFM* 67.0120.01 (H.-H. Ostmann); *MR* 3,161f (D. H. Lehmer); *Zbl* 026.10002 (L. Schrutka).
1941b Review of *An Introduction to Abstract Algebra*, by C. C. MacDuffee. *Natl. Math. Mag.* 15:211–12.
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1942c Review of *A Survey of Modern Algebra*, by G. Birkhoff and S. Mac Lane. *Natl. Math. Mag.* 16:268–69.
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1946 A note on linear homogeneous diophantine equations. *Bull. Amer. Math. Soc.* 52:734–36. Reviews: *MR* 8,6d (N. G. de Bruijn); *Zbl* 060.08902 (W. Ljunggren). Presented as "Linear homogeneous diophantine equations" to the AMS, Chicago, 26 Apr 1946; abstract: *Bull. Amer. Math. Soc.* 52 (5, pt. 1): 418 #118.
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Abstract not listed above:
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References to: AmMSc 5–8, 9P–11P; AmWom 1935–40.

Related manuscript material:
Lois W. Griffiths Papers, 1923–1981. Northwestern University Archives, Northwestern University Library, Evanston, Illinois.

Other sources: PhD dissertation vita 1927; Owens questionnaire 1937; Northwestern University Archives; University of Chicago Archives; communication with Oberlin College Archives; US Census 1910, 1920, 1930 WA; Illinois death certificate.

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