Learning More

Dzielska, Maria.
Hypatia of Alexandria.
Cambridge, MA: Harvard University Press, 1996.
Provides a biography of Hypatia based on several sources,including the letters of Hypatia's student Synesius. (YA) (A)

Biographies of Women Mathematicians
www.agnesscott.edu/lriddle/women/women.htm
Contains biographical essays and comments on woman mathematicians, including Hypatia. Also includes resources for further study. (YA) (A)

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Patwardhan, K. S., S. A. Naimpally, and S. L. Singh.
Lilavati of Bhaskaracharya.
Delhi, India:Motilal Banarsidass, 2001.
Explains the definitions, formulae, shortcuts, and methodology used by Bhaskara in his work, *Lilavati*. Includes literal translations of Bhaskara's text. (A)

Bhaskara
www-gap.dcs.st-and.ac.uk/~history/Mathematicians/Bhaskara_II.html
Provides a biography of Bhaskara that contains explanations and examples of his work. (YA) (A)

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Dean, Nathaniel (editor).
African Americans in Mathematics: Dimacs Workshop June 26–28,1996.
Contains research by African American mathematicians, including J. Ernest Wilkins,Jr., on issues related to their involvement in mathematics. (A)

The Faces of Science: African Americans in the Sciences
www.princeton.edu/~mcbrown/display/faces.html
Profiles African American men and women who have contributed to the fields of science and engineering. (A)

Key:

(C) = Children
(YA) = Young Adult
(A) = Adult

Famous Mathematicians

The history of mathematics spans thousands of years and touches all parts of the world. Likewise, the notable mathematicians of the past and present are equally diverse.The following are brief biographies of three mathematicians who stand out for their contributions to the fields of geometry and calculus.

Hypatia of Alexandria

(c. A.D. 370–415)
Born in Alexandria, Egypt, around A.D. 370, Hypatia was the first documented female mathematician. She was the daughter of Theon, a mathematician who taught at the school at the Alexandrine Library. She studied astronomy, astrology, and mathematics under the guidance of her father. She became head of the Platonist school at Alexandria around A.D. 400.

Although little of Hypatia's own work survives, one of her pupils, Synesius of Cyrene, wrote numerous letters documenting Hypatia's contributions. Hypatia lectured in Alexandria on Plato, Aristotle, and other philosophers, and wrote student editions (known as commentaries) of classic works by Euclid, Diophantus, Apollonius, and Ptolemy. There is some evidence that she even wrote a commentary on Archimedes' *Dimension of the Circle*

Like many great philosophers of the time, Hypatia became involved in a political power struggle, which led to her murder in A.D. 415 by an angry mob.

Bhaskara

(A.D. 1114–1185)
Bhaskara (also know as Bhaskaracharya) was born in A.D. 1114 in Vijayapura, India. After studying mathematics and astronomy, Bhaskara went on to lead the astronomical observatory at Ujjain, the top mathematical center in India at that time. He remained in Ujjain until his death in A.D. 1185.

Bhaskara wrote numerous papers and books on such topics as plane and spherical trigonometry, algebra, and the mathematics of planetary motion. His most famous work, *Siddhanta Siromani*, was written in A.D. 1150. It is divided into four parts: "Lilavati" (arithmetic), "Bijaganita" (algebra), "Goladhyaya" (celestial globe), and "Grahaganita" (mathematics of the planets). Like Archimedes, Bhaskara discovered several principles of what is now calculus centuries before it was invented. Also like Archimedes, Bhaskara was fascinated by the concepts of infinity and square roots.

J. Ernest Wilkins, Jr.

(1923–)

Born on November 23, 1923, in Chicago, Illinois, J. Ernest Wilkins, Jr. first attracted attention when he entered the University of Chicago to study mathematics at the age of 13. He was the youngest student ever to attend the university. He received his bachelor's degree at the age of 16, his master's degree at the age of 17, and his Ph.D., in 1942, at the age of 19.

Since that time, he has had a remarkable career as a mathematician, teacher, physicist, and engineer. Although he has written more than 80 mathematical papers on such subjects as calculus and geometry, his primary focus since the mid-1940s has been the study and development of atomic power.

Today, Dr. Wilkins lives in Atlanta, Georgia, where he is currently working as Distinguished Professor of Applied Mathematics and Mathematical Physics at Clark Atlanta University.