Archimedes of Syracuse

Born: ca. 287 BC
Died: ca. 212 BC

Archimedes is popular because he was probably the first intellectual who streaked naked in public yelling "Eureka! Eureka!" after discovering the principle of buoyancy. While this story may not be true, the scientific community accepts him to have been the greatest mathematician of the ancient world.

His life and accomplishments is known to the modern world because he is one of the characters mentioned in detail in a biography of the Roman soldier Marcellus, written by Plutarch. It is known that Archimedes was a follower of Euclid's work and he made made many geometric proofs using the logic of geometric formalism outlined by his idol. Most of Archimedes' proofs were brought about by arguments of a mechanical nature, which inevitably led him to find the truth every time.

Archimedes was an excellent engineer who helped defend Syracuse from a Roman invasion. Legend has it that he was able to make devices which focused the Sun's rays on the warchips of the enemies, and caused them to burn. This legend was tested by the Discovery Channel's Mythbusters. Technically, it is possible that Archimedes may have used metal mirrors to focus the Sun's rays enough to produce enough heat to burn ancient Roman ships. At that time, war vessels were made of wood made watertight by tar and pitch—highly flammable substances that only needed a little encouragement to light up.

Hypatia of Alexandria

Born: ca. 370 AD
Died: 415 AD

Hypatia was the daughter of Theon, who was recognized as one of the most-educated man in Ptolemaic Egypt. She was raised with education foremost, which was a deviation from what women were expected to do at that time. It is believed that in her later years, she surpassed even her father in knowledge.

Hypatia was the first woman to contribute to the male-philosopher dominated world of mathematics in Alexandrian times. Most of Hypatia's work was destroyed, but she is known for the invention of the astrolabe, which was the navigational instrument of choice by seafarers before the invention of the sextant in the 16th century.

Hypatia's astrolabe had a pair of metal discs that rotated one on top of the other around a detachable axis. It was to become so accurate that it was used to solve problems in spherical astronomy. In a way, Hypatia's astrolabe was a computer in its own right.

Hypatia became embroiled in the conflict between the proponents of Christianity and the old ways. Cyril, a leader of the growing Christian community, was an enemy of the Alexandrian governor, Orestes. It is believed that Hypatia was caught in between the feud and it is said that Cyril spread rumors about her that she was a witch. On her way home one day, a mob vented their anger on her. They stripped her, skinned her alive with broken pottery and dragged her body through the streets.

Abu Abdullah Muhammad bin Musa al-Khwarizmi

Born: 780 AD
Died: 840 AD

Abu Abdulla Muhammad bin Musa al-Khwarizmi is known as the father of algebra. He was a Persian mathematician of the 9th century who wrote the book *Hisab al-jabr w'al-muqabala*. The word "algebra" was derived from the title. Khwarizmi's book was the reason why people today use the Indian system (Hindu) of numeration. This was adopted first in the Middle East, then was later introduced to Europe by the Moors.

al Khwarizmi's book was translated into Latin in the 12th century as *Algoritmi de numero Indorum*. Again, the title became the basis for a mathematical term, this time, it was for the word "algorithm." Today, computer programs are always written algorithmically, which means they use a step-by-step problem-solving process that leads to the desired result.

Augusta Ada Byron Lovelace

Born: December 1816
Died: November 1852

Augusta Ada Byron was also known as Lady Lovelace. She was the daughter of the poet Lord Byron, but she was raised by her mother to be a mathematician and scientist instead of a poet like her father. Still, the poet inside Ada could not be stifled, and she merely combined with mathematics. The result was a metaphorical understanding and explanation of mathematics.

Under the tutelage of Mary Somerville, who translated mathematician's Pierre-Simon Laplace's work into English, Ada was introduced to Charle's Babbage's Analytical engine, a description of which she translated from the written work of Italian mathematician, Luigi Federico Menabrea. Babbage saw Ada's work and suggested that she add her own notes. She did and her input turned out to be three times the length of the original article. Ada told Babbage of her idea of how his machine can be used to calculate Bernoulli numbers. History now regards this as the first computer program.

Ada's article was published in 1843 and included predictions of machines that can be used to compose music and other works of art. She foresaw that such machines will be used commercially and practically by people. In 1979, the United States Department of Defence developed a program which was called Ada in her honor.

Grace Murray Hopper

Born: December 1906
Died: January 1992

       As a young girl, Grace Murray Hopper was fascinated with machinery and how things worked. She would take clocks apart just to see "what made them tick," so to speak. This quaint hobby of hers would prove useful for her eventual involvement with computers.

       Hopper got her doctorate in mathematics from Yale University. Then, in 1944, she went on active duty with the United States Navy for the Bureau of Ships Communication in Hawaii. It was there that she was introduced to the world of computers. Hopper was told to write a user-manual for the first sequentially-programmed computer, the Mark 1. Undaunted, she did her job and wrote 500 pages of it.

       Afterwards, she taught mathematics for a few years and participated in private ventures before getting called up again by the Navy in 1967 to head the Navy's Naval Data Automation Command. Hopper retired from the Navy with the recognition of being its oldest personnel.

       In her time outside the Navy, Hopper became involved in the development of the UNIVAC 1, the first big electronic computer. She espoused the belief that computer programs could be written in English. She developed a computer program called a compiler which could translate a programmer's instructions into binary code. She also invented the Flow-Matic program. Both products became essential to the development of the COBOL computer language. Without Hopper's work, the world of computer programming today may be a different story.

Larry Page

Born: March 1973
Still very much alive and getting richer by the minute

Larry Page is one of the founders of what is considered to be the world's most successful search engine, Google. He got the simple idea for this from a friend, Alex Sonkin. Later, he founded Google with another friend, Sergey Brin, and they began operations in 1998.

Google uses the patented PageRank technology, which uses the structure of links between web sites to determine the ranking or priority of appearance of a Web site. In 2004, Page was ranked among the richest people in the world with a worth of $7 billion.