

FELIX KLEIN

By: Alexa

Biographical Information



Felix Klein was born on April 25, 1849. He was born and lived in Düsseldorf, Germany.



Major Contributions to Math

He was known for his work in group theory, complex analysis, and non-Euclidean geometry.

~Complex analysis: the study of imaginary numbers.

~Group theory: the study of symmetries.

~Non-Euclidean geometry: any form of geometry that contain a postulate.



The Klein Bottle

Felix Klein also invented the Klein Bottle, which was a closed surface with only one side, formed by passing one end of a tube through the side of the tube and joining it to the other end.



Timeline

- 1849: Klein was born.
- 1865: He joined the University of Bonn.
- 1868: He received his Ph. D from the University of Bonn.
- 1874: He became the editor of 'Mathematische Annalen' or 'Annals of Mathematics.'
- 1875: He accepted the chair at the Institute of Technology in Munich.
- 1880: Klein became the professor at the University of Leipzig.
- 1886: Klein accepted a chair at the University of Göttingen.
- 1908: He was made the Chairman of the 'International Commission on Mathematical Instruction' at the Rome 'International Congress of Mathematicians'.
- 1912: He was awarded the 'Copley Medal of the Society'.
- 1913: Klein retired from the University of Göttingen.
- 1925: He died on June 22nd.

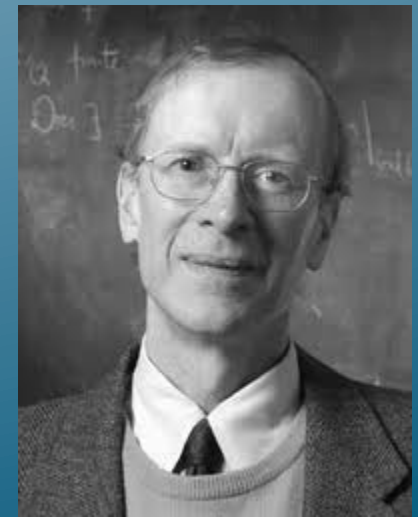
Sources

- http://www.kleinbottle.com/whats_a_klein_bottle.htm
- <http://www.thefamouspeople.com/profiles/felix-christian-klein-506.php>



Andrew John Wiles

Ali



Birthplace and home

- Andrew Wiles was born in and lived in Cambridge, UK. He was born on April 11, 1953. he is 60 years old.

Math Contributions

- Sir Wiles is most famous for proving Fermat's last theorem, which is a base and an exponent plus a base and an exponent cannot equal another base and the same exponent.
- Example:

$$2^5 + 3^5 = 5^5$$

The answer cannot be to the fifth power

Interesting life events

- When he was 10 years old Andrew found a book about Fermat's last theorem. He could understand it.
- He entered Merton College in 1971 and graduated with a B.A. in 1977.

He was a junior researcher at Clare college and an assistant professor at Harvard from 1977-1980.

He was awarded the Guggenheim Award. It enabled him to visit institutes in Paris.

- In 1998 Wiles was given the Fields Medal. Instead of a medal he was given a plaque. He was too old. The medal is only given to people under 40, he was 41.
- In 2005 Wiles was given the Shaw Prize for his mathematical accomplishments.

Sources

- Briticana.com
- Wikipedia.com

Leonhard Euler

Anna



Biography

Euler was born on April 14, 1707 in Basel, Switzerland

He died on September 18, 1783 in Russia

As a young age of 1 Leonhard moved to Reihen not far from Basel.

Even though Leonhard lived in Reihen he was sent to school in Basel.

He also lived in Berlin, Kingdom of Prussia, and Saint Petersburg

He gradually got blind in both eyes.

Major math contributions

- ▣ The Basel problem
- ▣ The card problem
- ▣ The gamma function

$$\Gamma(z) = \int_0^{\infty} e^{-t} t^{z-1} dt$$

He didn't not have proof like Andrew Wiles but he made a suggestion on the Fermat's theorem

He also solved The Konigsberg Bridges Problem.

Sources

- ▣ <http://www.amt.edu.au/euler.html>

HENRI LEBESGUE

By: CJ

Biographical Info

- ▣ Henri Lebesgue was born June 28, 1875 in Beauvais, France and died on July 26, 1941 in Paris.
- ▣ He lived in Paris for 20 years.
- ▣ He had a wife and two children.

Photograph



Education

- ▣ He went to École Normale Supérieure for his bachelor studies.
- ▣ Lebesgue did his graduate and doctorate studies at the Sorbonne (aka the University of Paris)

Contributions

- ▣ He also worked on the Lebesgue measure. This is a way of assigning a measure to sets of certain dimensions. He described this in 1901.
- ▣ His main work was his integration theory which helped find areas. This theory was published one year later than the measure in 1902.

Career

- ▣ Lebesgue worked in colleges all over France but lectured and researched at the Collège de France for 20 years
- ▣ Lebesgue wrote over 50 papers and 2 books in his lifetime and was 23 when he wrote his first.

Sources

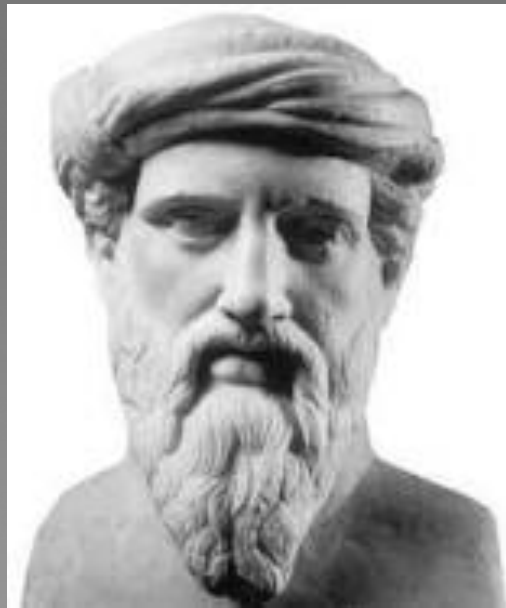
- ▣ www.britannica.com
- ▣ www.princeton.edu
- ▣ www.wikipedia.com

Pythagoras

Born in Samos, Greece around 580 B.C.

Died around 500 B.C.

By: Delaney



- ◎ Pythagoras lived in Samos but left for Egypt at around age 40. It is unknown when he came back to Italy.
- ◎ While still in Egypt, he was taken prisoner by Persia and sent to Babylon.
- ◎ After 5 years in Babylon, he was set free and went back to Samos but his methods of teaching were not popular with the leaders of Samos and their desire for him to become involved in politics, so he left and then settled in Crotona.

Major math contributions

- Pythagoras is best known for the Pythagorean theorem ($a^2 + b^2 = c^2$)

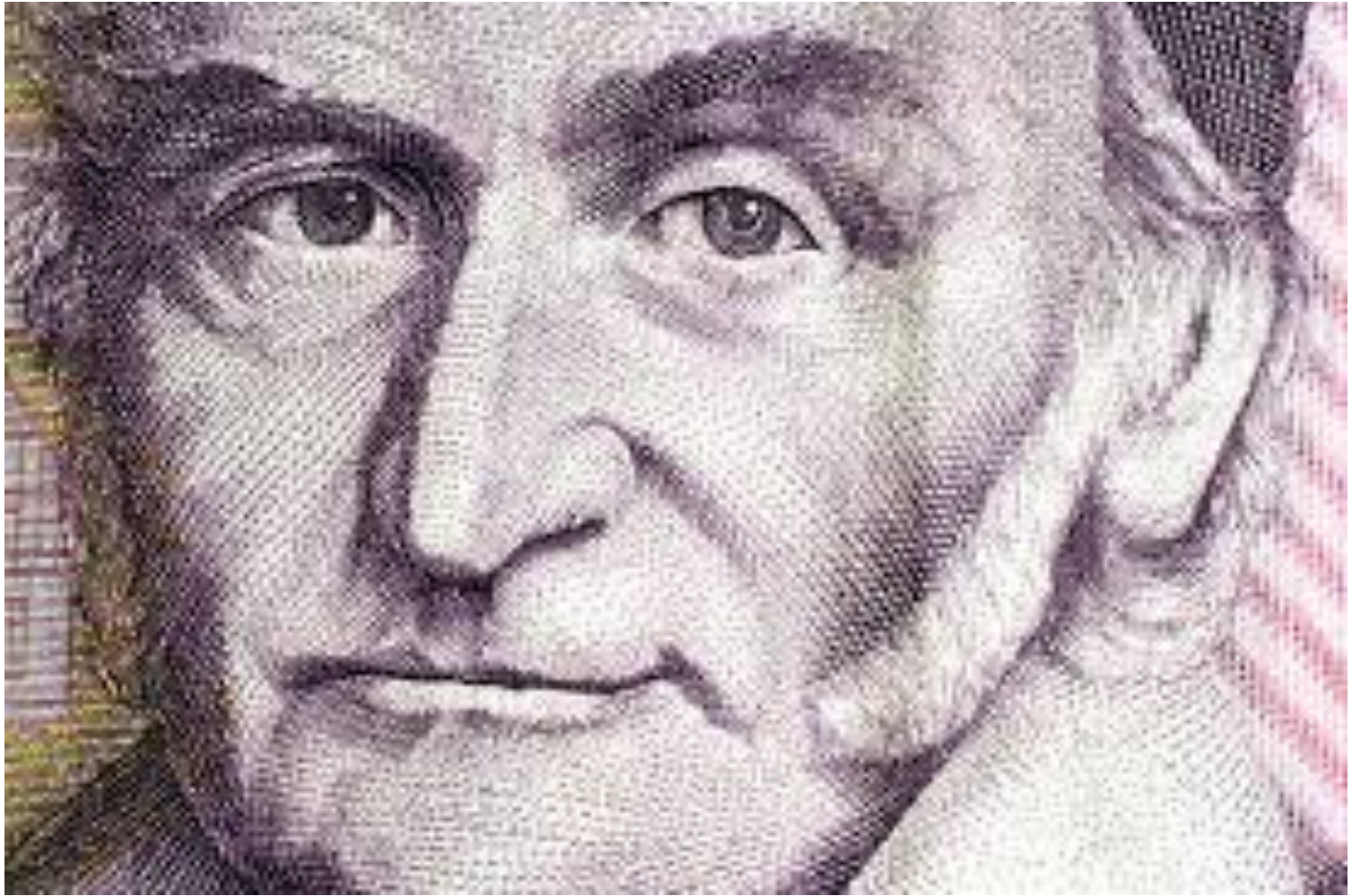
Life events

- The founder of the religious movement called Pythagoreanism (philosophical school and religious brotherhood)
- Revered as a great mathematician and scientist
- First man to call himself philosopher or lover of wisdom
- Referred to as the first pure mathematician

Sources

- ◉ [Wikipedia.org/wiki/pythagoras](https://en.wikipedia.org/wiki/pythagoras)
- ◉ [Mathopenref.com/pythagoras.html](https://mathopenref.com/pythagoras.html)

Carl Gauss♪



By: Emily



Biographical Information♪

- Carl Friedrich Gauss was born on April 30, 1777 in what is now part of Lower Saxony, Germany.♪



- He lived his whole life here, and died on February 23, 1855♪



Education♪

- When he was 7, Carl Friedrich Gauss started elementary school. ♪
- Gauss entered Brunswick Collegium Carolinum in 1792. At the academy Gauss independently discovered Bode's law, the binomial theorem and the arithmetic-geometric mean, as well as the law of quadratic reciprocity and the prime number theorem.♪



Major Math Contributions♪

- At age 24, he wrote a book called *Disquisitiones Arithmeticae*, which is regarded today as one of the most influential books written in math. ♪
- He also wrote the first modern book on number theory♪
- In 1801, Gauss discovered and developed the method of least squares fitting♪
- Gauss proved that every number is the sum of at most three triangular numbers ♪

Gauss Sum♪

When Gauss was in elementary school, his teacher got mad at the class and told them to add the numbers 1 to 100 and give him the answer by the end of the class. About 30 seconds later Gauss gave him the answer. The other kids were adding the numbers like this: $1+ 2+ 3+ \dots + 99+ 100=?$ Gauss rearranged the numbers to add them like this: $(1+ 100)+ (2+ 99)+ \dots + (50+ 51)$. There were 50 pairs, and each pair added up to be 101. So the answer is $50*101=5,050$. ♪





Interesting life events♪

- Gauss published over 150 works and made important contributions to math, such as the fundamental theorem of algebra, the least squares method, Gauss–Jordan elimination, and the bell curve♪



Sources♪

- [Wikipedia](#)♪
- [Wiki Answers](#)♪
- [Stetson.edu](#)♪
- [Mathforum.org](#)♪
- [Google images](#)♪



Augustin-Louis
Cauchy
by
Isis

Biography

- Born August 21, 1789
- Parents were Louis François Cauchy and Marie-Madeleine Desestre
- His brothers were Alexandre Laurent Cauchy and Eugene François Cauchy
- In 1818 he married Aloise de Bure
- Marie Françoise Alicia and Marie Mathilde are his two daughters by his wife

Biography part 2

- Cauchy attended École Centrale du Panthéon
- He was an engineer from 1810 to 1812
- He died at the age of 67 on May 23, 1857
- His name inscribed on the Eiffel Tower

Complex Function Theory

$$\int f(z)dz = 0$$

As long as a figure is connected it equals
zero

Cauchy's matrix

A $m \times n$ matrix with elements a_{ij} in the form

$$a_{ij} = \frac{1}{x_i - y_j}; \quad x_i - y_j \neq 0, \quad 1 \leq i \leq m, \quad 1 \leq j \leq n$$

Cauchy-Binet Formula

- An identity for the determinant of the product of two rectangular matrices
- It states

$$\det(AB) = \sum_{S \in \binom{[n]}{m}} \det(A_{[m],S}) \det(B_{S,[m]}).$$

Cauchy problem

- asks for the solution of a partial differential equation that satisfies certain conditions which are given on a hypersurface in the domain

$$u(x) = f_0(x) \quad \text{for all } x \in S;$$

$$\frac{\partial^k u(x)}{\partial n^k} = f_k(x) \quad \text{for } k = 1, \dots, \kappa - 1 \text{ and all } x \in S,$$

Cauchy Problem

- Two sequences $(a_n)_{n \geq 0}$ $(b_n)_{n \geq 0}$
is the discrete convolution of the two
sequences $(c_n)_{n \geq 0}$
sequence

Alan Turing



Founder of computer science, mathematician, philosopher,
codebreaker, and strange visionary

By: Juan

- **Born: June 23, 1912, in London**
- **Died: June 07, 1954 Wilmslow**
- **Education: Princeton University**
- **Major influence in computer science**
- **Invented the Turing machine**
- **Was a mathematician, logician, cryptanalyst, and a computer scientist**

Biography

- **It is the father of all computers**
- **It got in the general idea of computers**



Turing Machine

- **Alan Turing was found dead on 8 June 1954, having apparently died the day before. By his bed there was an apple, partly eaten, which contained cyanide, and it was eating this which caused his death. An inquest was held and the verdict was suicide. Some of Turing's family believed that he had taken the cyanide by accident as part of a chemical experiment.**

Death

Paul Erdős

JULIAN



Biographical Information

- Paul Erdős was born in Budapest Hungary on 1913 In September on the 23rd
- He died on March 23rd due to heart failure at meeting in Warsaw, Poland

Education

- He received his doctorate degree when he was just 21 years old!!

David Hilbert

{ Macy



David Hilbert was born on January 23, 1862 in the
Province of Persia.
He died on February 14, 1943, living 81 years.

He grew up in Königsberg with two younger siblings. In 1872 he entered Friedrichskolleg Gymnasium, the same school Immanuel Kant had attended 140 years earlier. Hilbert later transferred to Wilhelm Gymnasium, which was more science-oriented.

Early Life

Hilbert enrolled himself into University of Königsberg, where he met Hermann Minkowski (who was so talented that he graduated his gymnasium early, but returned again) and they quickly became friends. In 1884 Adolf Hurwitz joined the University of Königsberg. The three scientists influenced each others science careers at various times throughout their lives.

In 1895, as a result of intervention on his behalf by Felix Klein, he became the Professor of Mathematics at University of Göttingen, which at the time was the best research center for mathematics in the world. He stayed here for the rest of his life.

One accomplishment of Hilbert was the Hilbert Hotel. A hypothetical hotel with an infinite amount of rooms. For every one guest, they get another room where they can be moved. Once their room becomes vacant another guest can be moved to room 1. He always had room for another guest, resulting in an infinite amount of guests.

Achievements

Another accomplishment is his 23 problems. Eleven of these have been solved, six have been debated, that leaving six that are still unsolved. In 1974 Northern Illinois University held the Mathematical developments arising from Hilbert problems. Major mathematicians discussed progress on each problem and how the work on each problem has influenced mathematics.

Hilbert co-authored a book called Grundlagen der Mathematik with Grundlagen der Mathematik. It described Hilbert's approach to the foundations of mathematics.

<http://aleph0.clarku.edu/~djoyce/hilbert/>

http://en.wikipedia.org/wiki/Hilbert%27s_problems

https://en.wikipedia.org/wiki/David_Hilbert

https://en.wikipedia.org/wiki/Grundlagen_der_Mathematik

Sources

Augustus de Morgan

By: Maddy

Biological Information

- He was born in 1806 in Madurai, Madras Presidency, India.
- His family moved to England when he was seven months old.
- He died of nervous prostration on March 18, 1871. He was 63 years old.



Math Contributions

- Commutative law. $a+b = b+a$, $ab=ba$.
- Distributive law. $a(b+c) = ab+ac$.
- Index laws. $a^b \times a^c = a^{b+c}$, $(a^b)^c = a^{bc}$, $(ab)^d = a^d \times b^d$. $a^{-a} = 0$, $a \div a = 1$.



Life Events/Interesting facts

- He was a friend of Charles Babbage, who was the inventor of the Analytical Engine(a proposed mechanical general-purpose computer), and the fore runner of the modern computer.
- He tutored Ada Lovelace, who was the daughter of Lord Byron(a poet).
- He is said to have written the first computer program for Babbage's Machine.
- He became blind in one eye one or two months after he was born.
- He retired from his position as a professor in 1866. Two years later his son George died, soon followed after his resignation , he died.



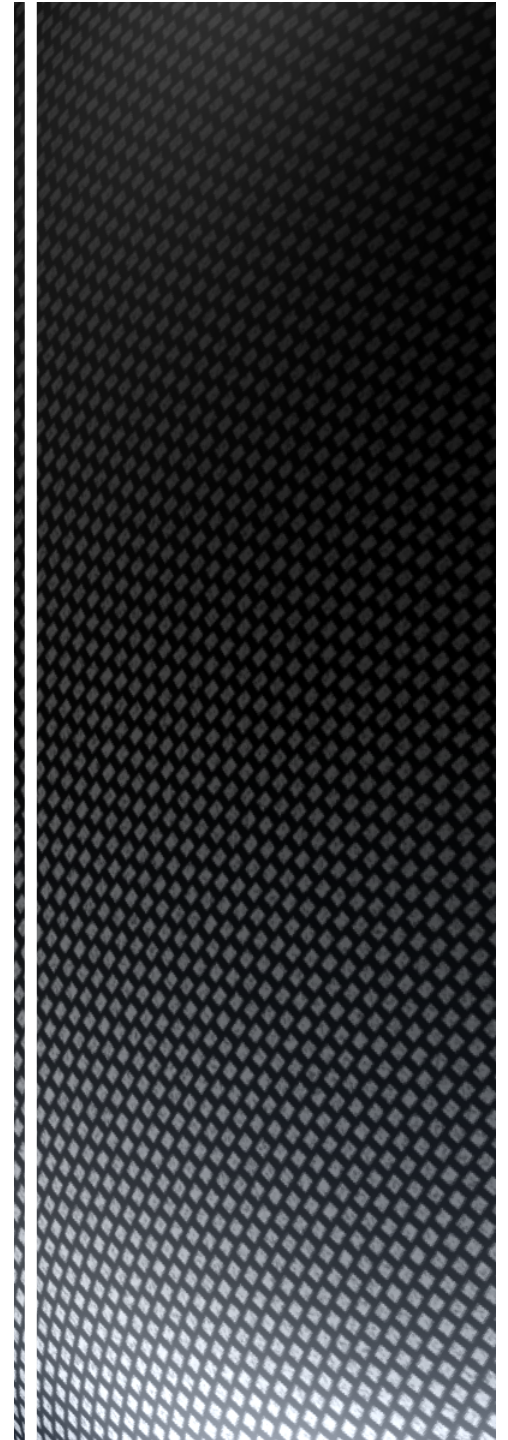
Sources

- http://en.wikipedia.org/wiki/Augustus_De_Morgan#Mathematical_work
- <http://www.demorgan.com/demorgan.htm>



Blaise Pascal

By: Melina♪





❖ Pascal was born on June 19, 1623. He died on August 19, 1662 at age 39.



Pascal lost his mother at the age of three. His father, who had a great interest in science and math, was a judge for the “Nobles of Rome” Pascal’s father started to spend more time with him. Pascal started to have an interest in math and science. When his father died he continued his work in math and science. And later went on to be a physicist, French mathematician, inventor, and writer.

Biography

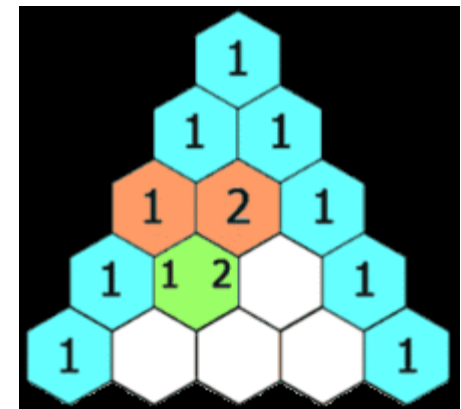


- ❖ Invented the calculator
- ❖ Created Pascal's Triangle

$$t_{mn} = \frac{(m+n)(m+n-1)\cdots(m+1)}{n(n-1)\cdots 1}$$

- ❖ Essay on Conics
- ❖ Mystic Hexagram

Major Math Contributions



- ❖ Had a gambling addiction
- ❖ Lived in Paris, France
- ❖ Knows Latin and Greek
- ❖ Wrote a book called, Essay on Conics

Interesting life
events



THE END :D
THE END :D

Thanks For listening.



Évariste Galois

French Mathematician

October 25, 1811 – May 31, 1832

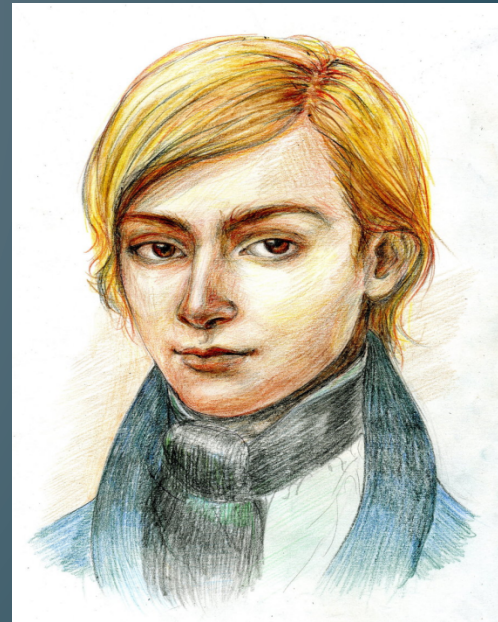
By: Samir

Biographical Information

- **Évariste Galois was born on October 25, 1811 in the suburbs of Paris, France.**
- **His father's name was Nicolas-Gabriel Galois and his mother was Adélaïde-Marie.**
- **He grew up in the southern suburbs, and failed almost every class in school. His teachers hated him, but at age fifteen, Galois gained a huge interest in mathematics. After reading several geometric books, he attempted to get into a very prestigious mathematics institution in France, but he did not get in because he could not explain concepts in the oral examination.**

Biographical Information (Continued)

- In 1829, Galois' father committed suicide after arguing about politics with the local priest.
- A few days after his father's death, Galois attempted once again to get into the school in France, but failed.



Political Turmoil and Death

- In 1830, Galois' principal locked some student from certain political parties into his school. Galois wrote an angry letter to the Gazette which put down the principal. The principal found out and expelled Galois.
- Galois immediately joined the Republican National Guard. Because of controversy about the issue, Galois was charged with trying to overthrow the government with the guard.
- He was arrested and then released later. He was put in prison later again for protesting against the government. He had a duel with another person, for unknown reason. He died on May 31, 1832 at the age of only 20.

Contributions to Math: Algebra

- Évariste Galois was the first to use the term “Group Theory” as one of the branches of algebra.
- He was one of the original founders of the exponential function p^v (P as any prime number, V as the number of dimensions).
- He studied extensions of the linear expression (v,p) .

Contributions to Math: Galois Theory

- Galois theory is by far Galois' most important contribution to mathematics.
- It's contents include: splitting fields multiple roots, the fundamental theorem of Galois theory, computing Galois groups, applications of Galois theory, algebraic closures, infinite Galois theory, and transcendental extensions.

Sources

- http://en.wikipedia.org/wiki/%C3%89variste_Galois
- <http://blog.mathsbank.co.uk/2010/10/evariste-galois-1811-1832.html>
- <http://nm.mathforcollege.com/anecdotes/galois.html>

Thank you for everything!





Aristotle

A smart guy


by: Sarah

- Aristotle was born in Stagria, Macedonia on a peninsula of northern Greece.
- His father, Nicomachus, was a medical doctor, but died when Aristotle was only 10.

- Aristotle moved to Athens at the age of 18.
- He was a student of Plato's and teacher of Alexander the Great.

- Aristotle opened an institute called the Lyceum in 335 B.C. and taught for 12 years
- He was the first to think quantitatively about speeds involved in movements.
- He studied physics and math.
- He educated students on topics like: logic, physics, astronomy, meteorology, zoology, metaphysics, theology, psychology, politics, economics, ethics, rhetoric, and poetics.

- Aristotle went to Lesbos where he was captivated by wildlife and studied it.
- He dissected animals--sometimes while they were living--to try to understand how they worked.
- He thought that maggots grew out of rotting flesh and turned into flies
- He thought eels grew out of muddy bottoms of lakes
- He believed in spontaneous generation.

- 
- Aristotle developed the study of logic.
 - He was credited with the earliest study of formal logic.

- He went back to Stagira and died at 62 in 322 B.C.

Sources

- wikipedia.com
- www.ancientgreece.com
- www.-history.mcs.st-and.ac.uk
- suite101.com