Mathematicians Cheat Sheet
Version 3.0
Mathematicians are listed roughly chronologically.

Mathematician Nationality	Details
Pythagoras Greek	philosopher and numerologist who is credited with the **Pythagorean theorem** and several other discoveries, none of which were likely proven by him; according to legend, killed a follower for proving the existence of an irrational number
Euclid Greek	studied geometry and number theory in *Elements*, the most important ancient Greek math textbook; proved that there are **infinitely many prime numbers**
Archimedes Greek	previewed calculus by using the **method of exhaustion** on problems like the area under a parabola and approximations of pi; physics work included a "**Eureka!**" moment regarding the density of a gold crown
Hypatia Egyptian (c. Eastern Roman Empire)	wrote influential commentaries on Ptolemy's *Almagest*, Diophantus' *Arithmetica*, Apollonius' work on conic sections, and many others; was murdered by a Christian mob, possibly because she advocated paganism
Rene **Descartes** French	developed analytic geometry, the application of algebraic concepts in a coordinate system to geometry; did extensive work in philosophy
Blaise **Pascal** French	Names a **triangular diagram** of the binomial coefficients; on the advice of several gamblers, worked with Fermat on **probability**; did extensive work in theology and physics
Pierre de **Fermat** French	suggested, without actually writing the proof, that $a^n + b^n = c^n$ is impossible if all four variables are positive integers and n is greater than 2, which became known as his "**Last Theorem**;" stated his "**Little Theorem**," that $(a^p - a)$ is divisible by a when p is prime and a is an integer
Isaac **Newton** English	discovered **calculus** simultaneously and independently of Leibniz; generalized the **binomial theorem** to any exponent; names a **method of approximating roots of a function**; did extensive work in physics, optics, and astronomy
Gottfried **Leibniz** German	discovered **calculus** simultaneously and independently of Newton; developed the preferred modern notation for calculus; also a landmark optimist Enlightenment philosopher
Leonhard **Euler** Swiss	invented **graph theory** via the **Seven Bridges of Konigsberg** problem; proved Fermat's Little Theorem; made so many discoveries that many are instead named for the second mathematician to discover them
Sophie **Germain** French	worked with Gauss, Legendre, and others under a pseudonym; made crucial steps in proving Fermat's Last Theorem; names a **type of prime number p such that 2p+1 is also prime**
Carl Friedrich **Gauss** German	proved **fundamental theorem of algebra**, **quadratic reciprocity**, the n=5 case of Fermat's Last Theorem, and countless other theorems; created modern notation for modular arithmetic; claimed an early discovery of non-Euclidean geometry; according to legend, summed the first 100 integers instantly as a schoolboy
Ada **Lovelace** English	wrote the first algorithm for Charles Babbage's analytical engine, making her arguably the **first computer programmer**
Bernhard **Riemann** German	rigorously defined the integral in terms of **Riemann sums**; posed the **Riemann hypothesis** regarding the zeroes of the complex zeta function
Emmy **Noether** German	landmark figure in abstract algebra; taught at Gottingen from 1915 until the Nazi era before moving to the US shortly before her death; did extensive work in physics
David **Hilbert** German	proposed a highly influential series of **23 unsolved questions** in mathematics in 1900
Alan **Turing** English	devised the "**Turing machine**," a theoretical model to analyze computer algorithms; worked at Bletchley Park to crack the Nazi Enigma cipher machine; was convicted of indecency for his homosexuality
Andrew **Wiles** English	completed a proof of the **Taniyama-Shimura conjecture** in 1995, finishing the last step of the proof of **Fermat's Last Theorem**