Greek and latines letters in mathematics

Greek letters are probably the oldest European language because it was spoken for 4000 years and written for 3000 years. In its classical and modern form, the Greek alphabet of 24 letters, was ordered from alpha to omega. The first to use the Greek alphabet were the Egyptians. Its letters have been used for Greek counting since the 2nd century B-C. The Greek alphabet that is known now appears after the « dark centuries », the period between the fall of the Mycenaeans and the begining of Greek civilization. The most important change that this new alphabet brings compared to the old system comes from the fact that it adapts the Phoenician alphabet so that it introduces the writting of the vowels, without which the Greek would be unreadable. The Greek alphabet has therefore adapted the Phoenician alphabet and divided its letters into two categories, consonants and vowels, and the consonants must always be accompanied by a vowel to make it possible to pronounce a syllable.

The latin alphabet was initialy used to write latin, the language spoken by the inhabitants of Rome and Latium. It is derived from the Etruscan alphabet, itself variant of a Greek alphabet different from the so-called classical alphabet. Over the centuries, the letters of the latin alphabet have been written in various ways. These types of writing do not constitute alphabets in themselves but different versions of the same alphabet, which will become writing after the invention of the printing of fonts. The latin alphabet was the first alphabet recognized by computer devices. In these devices, each glyph corresponds to a number and this number is manipulated by the device. The transformation of a number into a glyph and vice versa is done according to standard correspondence tables.

The Greek letters are used in mathematics, science, engineering and others areas where mathematical notation are used as symbols for constants, special functions and also used for variables representing certain quantities. In these contexts, the capital letters and the small letters represents distincts and unrelated entities. The uppercase and the lowercase don’t have the same meaning. The A,B,E,Z,H,I,K,M,N,O,P,T,Y and X are the Greek letters which have the same form as Latin letters, but are rarely used. The most used Greek letters are Alpha, Beta, Delta, Gamma, Lambda, Theta, Pi and Sigma.

Alpha is used for the constants, in physics, in chemistry including alpha radiation, angular acceleration, alpha particles, alpha carbon and strength of electromagnetic interaction. The uppercase letter alpha isn’t generally used as a symbol because it tends to be rendered identically (pas compris…) to the uppercase latin A.

Beta is often used to denote a variable in mathematics and physics. In spaceflight, beta angle describes the angle between the orbit planet of a spacecraft or other body and the vector from the sun. In statistics, beta may represent type II error or regression slope.

Delta is used for a change of state between two entities before and after state diagrams in the Z notation, for the symetric difference, for the constants. There is also a delta method which is a method for approximating the distribution of a function of a random variable.

Gamma is used for the constants and the lower imcomplete gamma functions. The uppercase is an extension of the factorial to complex number and its incomplete gamma functions.

Lambda is a formal system in mathematical logic for expressing computation based on function abstraction and application using variable binding and substitution.

Theta is just used as a variable name, much like x and y. It is commonly used to denote an angle and denotes the point which is distant from the origin. But it doesn’t have a constant value.

Pi The number Pi, is one of the most common constants in all mathematics. It is the circumference of any circle, divided by its diameter. Nobody knows its exact value, because no matter how many digits you calculate it to, the number never ends. For most practical uses, you can assume it is 3.142.

And finally, Rho represents the complex and a length coordinate in polar, cylindrical, spherical and toroidal coordinate systems. In statistics, Rho represents Spearman’s rank correlation coefficient, commonly known as Spearman’s rho.