High Quality Inspiration 
Through the Combination of Music & Mathematics

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ABSTRACT:
In ancient Greek years music was regarded as a mathematical branch of knowledge. Many philosophers, researchers, mathematicians and/or musicians tried to clarify and explain the relationship between music and mathematics. First, Pythagoras (sixth century B.C.) supported the idea that the deepest structure of music consists of relations, which can be represented as numerical ratios. His innovative (for his era) ideas regarding the mathematical structure of music prevailed for many centuries and created mostly adherents but also some opponents. Nowadays, it is a fact that musicians use sophisticated computer programs (which include multiple music variables and filters based on mathematics) in order to compose modern music. This paper aims at: (a) providing the theoretical and empirical evidence that music is strongly related to mathematics, (b) stating the fundamental differences between those two areas, which are mainly based on the philosophical differences between arts and sciences, and (c) supporting the notion that the comprehension and creative combination of these two fields can enhance the compositional ability of the musician and the computational ability of the mathematician through high quality inspiration.

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