

Neutrosophic logic and Numbers: Why, What and Fun

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Neutrosophy (Latin "neuter" - neutral, Greek "sophia" - skill/wisdom) is a branch of philosophy, introduced by Florentin Smarandache in 1980 which aims to understand the origin, nature, and scope of neutralities, as well as their interactions with different ideational spectra. Neutrosophy considers a proposition, theory, event, concept, or entity (let denoted by "A") in relation to its opposite, "Anti-A" and that which is not A, "Non-A", and that which is neither "A" nor "Anti-A", denoted by "Neut-A". Neutrosophic logic is a generalization of fuzzy logic based on Neutrosophy. A proposition is T "true", I "indeterminate", and F "false", where T , I and F are real values with no restrictions on T , I , F , or the sum $N = T + I + F$. Neutrosophic logic, thus, generalizes intuitionistic logic, which supports incomplete theories (for $0 < N < 100, 0 \leq T, I, F \leq 100$); fuzzy logic (for $N = 100$ and $I = 0$, and $0 \leq T, I, F \leq 100$); Boolean logic (for $N = 100$ and $I = 0$, with T, F either 0 or 100); multi-valued logic (for $0 \leq T, I, F \leq 100$); paraconsistent logic (for $N > 100$, with both $T, F < 100$); dialetheism, which says that some contradictions are true (for $T = F = 100$ and $I = 0$; some paradoxes can be denoted this way). Compared with all other logics, neutrosophic logic introduces a percentage of "indeterminacy" due to unexpected parameters hidden in some propositions. In this talk, we will consider Neutrosophic numbers and have fun doing some calculations to simply understand the nature of these numbers.

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