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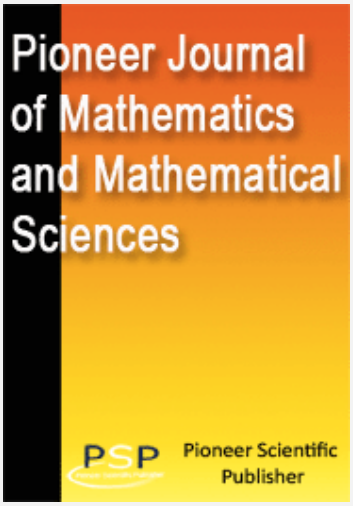

APPLICATION OF THE NUMBER OF TOPOLOGIES ON A FINITE SET TO DETERMINE THE NUMBER OF NATURAL NUMBER SUMS FOR A GIVEN NATURAL NUMBER

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Abstract

Given a natural number, in how many distinguishable ways can that natural number be written as a sum of natural numbers, where the natural number alone is considered a sum? Within this paper, known results for the number of topologies on a finite set are used to determine the number of distinguishable sums of natural numbers for natural numbers 1 to 10, which led to an unexpected but pleasing discovery.

Keywords and phrases: pseudometrizable, Alexandroff spaces, natural number sums for a natural number, binomial coefficients.