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Binomial coefficients and Arithmetic Progression in an Alternating Series with its interpretation in Vector Space NITIKA SACHDEVA, Bhagwan Parshuram Institute of Technology — A series is defined using terms of arithmetic sequence taken along with binomial coefficients nCr . By deriving it in all the subsequent sections of Pascal's hexagon, the series is extended for nCr where n, r belong to \mathbb{R} . Further, it is analysed in a vector space and is found to be a subspace of it. The series is studied as a scalar product of three-dimensional vectors where some of the findings are generalized for n -dimensions.

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