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Mohamed Hanafy Sayed Radwan* (mohamed_hanafy@mentor.com), 78 El Nozha St., Heliopolis, Cairo, 11361, Egypt. *New Summation Series Form Presenting Mathematical Permutations and Combinations for Powerful Parallel Computing.*

The mathematical computing of permutations and combinations is one of the heavy computing operations. It consumes much time and memory resources as it depends on excessive multiplication operations. In this paper, a new summation series equation is contributed to represent both permutations and combinations in an addition form. The new form is more efficient for parallel computing techniques, where the summation terms can be distributed on separate computing clusters. The new contributed form is proved by the “Proof by induction” method. It can be used as a new efficient technique to compute multiple multiplication operations like the factorial of large integers with multiple addition terms computed separately. (Received October 26, 2014)