

## Computing support for testing equal values of the figurative numbers in the Pascal triangle

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**Abstract:** In this paper we deal with a determination of numbers in a Pascal triangle that are simultaneously triangular, tetrahedral and hyper pyramidal, i.e. natural numbers  $n, m, k \in \mathbb{N}$ , such that it is

$$\binom{n}{2} = \binom{m}{3} = \binom{k}{4} \text{ for } n, m, k \in \mathbb{N} \text{ and } n \geq 2, m \geq 3, k \geq 4.$$

The collected results, obtained by mathematical analysis, were verified by computer. For this purpose, we used the C# programming language as well as the computer laboratory within our University in order to test the results. The results collected by computer confirmed the accuracy of the results obtained by mathematical analysis.

**Keywords:** Pascal triangle, computer support, figurative numbers.