

# Contents

## Part I – Education in Mathematics

1. G. Ambrus, N. K. Rácz, Ö. Vancsó – *How Hungarian teachers think about combinatorics and its teaching* \_\_\_\_\_ 11
2. M. Billich – *GeoGebra and problems of tangent circles* \_\_\_\_\_ 23
3. M. Ziółkowski, L. Stępień, M. R. Stępień, A. Gola – *Applications of Python programs in solving of equations based on selected numerical methods* \_\_\_\_\_ 31

## Part II – Mathematics and Its Applications

1. J. M. Jędrzejewski – *On monotonicity of real functions* \_\_\_\_\_ 49
2. Y. Povstenko, J. Klekot – *Fractional heat conduction in an infinite rod with heat absorption proportional to temperature* \_\_\_\_\_ 61
3. A. Szynal-Liana, I. Włoch – *Some properties of generalized Tribonacci quaternions* \_\_\_\_\_ 73

## Part III – Computer Science

1. M. Copik, A. Rataj, B. Woźna-Szcześniak – *A GPGPU-based Simulator for Prism: Statistical Verification of Results of PMC* . 85
2. N. Kniazieva, S. Shestopalov, W. Susłow, A. Yatsko – *The Concept of Implementation of the Decentralized Application Level Structure for Providers of a Typical Next Generation Network* \_ 99
3. M. Selianinau – *Tabular minimal redundant modular structures for fast and high-precision computations using general-purpose computers* \_\_\_\_\_ 117

4. **M. Selianinau** – *Theoretical and methodological bases of modular technology of parallel tabular computations using universal processors* 129
5. **P. Zając, M. Matalytski** – *Expected Volumes of Requests in Systems of the Queuing Network with a Limited Number of Waiting Places* 141
6. **A. M. Zbrzezny** – *Comparing SAT- and SMT- based bounded model checking for ECTL properties* 161