Journal of Mathematical Inequalities
Volume 6, Number 1 (2012), 95–105

A NEW INTERPRETATION OF CHEBYSHEV'S INEQUALITY FOR SEQUENCES OF REAL NUMBERS AND QUASI–ARITHMETIC MEANS

YASUO NAKASUJI, KEISAKU KUMAHARA AND SIN-EI TAKAHASI

Abstract. The main purpose of the paper is to give a new interpretation of Chebyshev's inequality for the sequences of real numbers from a standpoint of composition functions. As an application, an n-version of the concavity (or the convexity) of a quasi-arithmetic mean function is obtained under some conditions.

Mathematics subject classification (2010): Primary 26E60; Secondary 26B25, 26B05.
Keywords and phrases: Chebyshev's inequality, quasi-arithmetic mean, convexity, concavity.

REFERENCES

[1] J.I. FUJII, M. FUJII, T. MIURA, H. TAKAGI AND S.-E. TAKAHASI, *Continuously differentiable means*, J. Inequal. Appl. **2006** (Art. ID75941), 15 pp.
[2] M. M. MARJANOVIC AND Z. KADELBURG, *A proof of Chebyshev's inequality*, The Teaching Math. **10**, 2(2007), 107–108.
[3] Y. NAKASUJI, K. KUMAHARA AND S.-E. TAKAHASI, *A new interpretation of Jensen's inequality and geometric properties of φ-means*, J. Inequal. Appl. 2011, 2011:48 doi:10.1186/1029-242X-2011-48.
[4] N. OZEKI AND K. OZEKI, *Intoroduction to Inequalities* (in Japanese), Kindaikagakusya, 1987.

Paper JMI-06-10