Werk

Titel: A supplement to Eddy's paper.

Autor: Milosevic, D.M.

Jahr: 1987

PURL: https://resolver.sub.uni-goettingen.de/purl?378850199_0042|log27

Kontakt/Contact

Digizeitschriften e.V.
SUB Göttingen
Platz der Göttinger Sieben 1
37073 Göttingen

info@digizeitschriften.de

LITERATURVERZEICHNIS

1 M. Abramowitz, I. A. Stegun: Handbook of Mathematical Functions with Formulas, Graphs, and Mathematical Tables. Dover Publications, Inc., New York (1968), Seite 591 (Formel) und Seite 608 (Tabelle).
2 H. Durège: Theorie der elliptischen Funktionen. Leipzig 1887, Seite 193.
3 C. G. J. Jacobi: Gesammelte Werke. Königlich-Preussische Akademie der Wissenschaften Berlin, Verlag G. Reiner, *1* (1881), Seite 81.

© 1987 Birkhäuser Verlag, Basel 0013-6018/87/040093-12$1.50+0.20/0

Kleine Mitteilungen

A supplement to Eddy's paper

In El. Math., Vol. 41/5, was published the following inequality for a triangle ABC

$$\sum n_a \leq 14R - 19r, \tag{*}$$

where n_a, n_b, n_c are the Nagel cevians, R is the circumradius and r the inradius of the given triangle.
The following inequality

$$\sum n_a \leq 10R - 11r \tag{1}$$

is more precise than the nequality (*).

Proof. Let IN_a denote the join of the incenter I and the point of contact N_a of the corresponding excircle with side BC of a given triangle ABC (similar for IN_b and IN_c). Applying the formulas $\sum a^2 = 2(s^2 - 4Rr - r^2)$ and $\sum bc = r^2 + s^2 + 4Rr$, where s represents the semiperimeter of ABC, to the inequality

$$\sum IN_a \leq \sqrt{6\sum a^2 - 6\sum bc + 9r^2}$$

in [2], we obtain

$$\sum IN_a \leq \sqrt{6s^2 - 72Rr - 9r^2}\,. \tag{2}$$

Then, since ([1], p. 50)

$$s^2 \leq 4R^2 + 4Rr + 3r^2,$$