

1106-33-1568

Horst Alzer (h.alzer@gmx.de), Morsbacher Str. 10, 51545 Waldbröl, Germany, and **Kendall Richards*** (richards@southwestern.edu), Southwestern University, Mathematics and Comp. Sci. Department, 1001 E. University Ave., Georgetown, TX 78626. *On the Modulus of the Grötzsch Ring*. Preliminary report.

We study monotonicity, concavity and convexity properties of the function

$$G_r(\alpha) = \frac{\mu(r^\alpha)}{\alpha} \quad (0 < r < 1; \alpha > 0),$$

where μ denotes the modulus of the Grötzsch ring. Moreover, we apply our results to obtain various sharp functional inequalities. (Received September 14, 2014)