

Geometric and Asymptotic Group Theory I

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<http://www.mat.univie.ac.at/~dosaj/GGTWien/Course.html>

Dienstag, 11:00–12:00, Raum C2.07 UZA 4

Blatt 5

Dehn function

- (1) Let $\langle S|R \rangle = \langle S'|R' \rangle$. Show that the Dehn functions of both presentations are equivalent, i.e. $\delta_{\langle S|R \rangle} \approx \delta_{\langle S'|R' \rangle}$.
- (2) Prove that $\delta_H \approx \delta_G$ for every finite index subgroup H of G .
- (3) Let K be a finite normal subgroup of G . Prove that $\delta_{G/K} \approx \delta_G$.
- (4) Show that $\delta_{G \times H} \approx \max\{n^2, \delta_G, \delta_H\}$, for all infinite groups G, H .
- (5) Show that $\delta_{BS(1,2)} \approx 2^n$.