Math 6270 - Assignment 6

Due October 9, 2019

(1) Read 1.6.11 in [1] on subgroups of finite index in finitely generated groups.

(2) Let G be abelian with a subgroup H of index n. Show that the transfer from G into H is the map $x \to x^n$.

(3) Let G be a finite group with transfer $\tau \colon G \to H/H'$ into a Hall subgroup H. Show that $\tau(G) = \tau(H)$.

(4) Let H be a subgroup of finite index in G, let τ be the transfer from G into H, and let $n \in N_G(H)$. Show that $\tau(x)^n = \tau(x^n)$ for all $x \in G$.

References

[1] D. J. S. Robinson. *A course in the theory of groups*, volume 80 of *Graduate Texts in Mathematics*. Springer-Verlag, New York, second edition, 1996.