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APPLICATION OF TRANSFER MAPS ON FACTOR GROUPS

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We wish to present the proofs of the following two results on transfer maps.

(i) Let G be a finite group and let K be a normal subgroup of order n of G such that G/K is abelian. If G splits over K with H as a complement to K, τ is the transfer of G into H, ψ is the map from G to H such that $\psi(hk) = h$, for all h in H, and k in K, and ν is the map defined by $\nu(h) = h^n$, then $\tau = \psi\nu$.

(ii) Let G be a finite group. If G has an abelian Sylow p-subgroup then p does not divide $|G' \cap Z(G)|$. Hence we show that if all Sylow subgroups of G are abelian then $G' \cap Z(G) = 1$. Also, if G/Z(G) is a π group, then G' is also a π group. However, the converse of this result is not true. A counter example will be presented.