







prove that  $Cl_{\mathcal{G}-S}(H)$  is invariant. Given  $g \in G$ , let  $k_g : G \rightarrow G$  be conjugation by  $g$ , i.e.  $k_g(h) = ghg^{-1} = L_g \circ R_{g^{-1}}(h)$ . Then  $k_g$  is a  $\mathcal{G}-S$  homeomorphism from  $G$  to itself. By lemma 1.7  $k_g(Cl_{\mathcal{G}-S}(H)) \subset Cl_{\mathcal{G}-S}(k_g(H)) = Cl_{\mathcal{G}-S}(H), \forall g \in G$ .

It implies that

$$k_g(Cl_{\mathcal{G}-S}(H)) = gCl_{\mathcal{G}-S}(H)g^{-1}$$

$$\subset Cl_{\mathcal{G}-S}(H), \forall g \in G.$$

Hence  $Cl_{\mathcal{G}-S}(H)$  is an invariant subgroup of  $G$ .

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