ON THE LOWER NEAR FRATTINI SUBGROUPS AND NEARLY SPLITTING GROUPS

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In this article, first we briefly reintroduce the Frattini subgroup $\Phi(G)$, and the lower near Frattini subgroup $\lambda(G)$, of a group G. Second, we prove a lemma, due to C. Y. Tang, concerning the Frattini subgroups and splitting groups. Also, we prove the exact analog of Tang's lemma for the lower near Frattini subgroups and nearly splitting groups. Finally, we propose a question for the reader.

The Frattini Subgroup. The Frattini subgroup, $\Phi(G)$ of a group G, was introduced into the group theory first in 1885 by the Italian mathematician Giovanni Frattini (1852–1925). $\Phi(G)$ is the intersection of all maximal proper subgroups of G (if there are no maximal proper subgroups of G, then $\Phi(G) = G$). It is easy to see that $\Phi(G)$ is the set of all nongenerators of G. (Recall: An element g of a group G is a nongenerator of G if for every subset S