

ABSTRACT. Let G be a discrete group, let $p \geq 1$, and let $L^p(G)$ denote the Banach space $\{\sum_{g \in G} a_g g \mid \sum_{g \in G} |a_g|^p < \infty\}$. The following problem will be studied: Given $0 \neq \alpha \in \mathbb{C}G$ and $0 \neq \beta \in L^p(G)$, is $\alpha * \beta \neq 0$? We will concentrate on the case G is a free abelian or free group.