

MATH 521B: Abstract Algebra
Quiz 8

Let G be an abelian group, written additively with identity 0. For $g \in G$, recall the order of g , written $|g|$, denotes the smallest positive integer t such that $0 = \underbrace{g + g + \cdots + g}_t = tg$.

Let $m \geq 1$ be an integer such that m divides $|G|$. Let $G(m) = \{g \in G : |g| \text{ divides } m\}$. Prove that $G(m) \leq G$.