Universidad del Norte
Departamento de Matemáticas y Estadística
Examen parcial 1 - Remach - Teoría de grupos
2023 - 30

Let G be a finite group. The order two element graph of a group G is the simple undirected graph whose vertex set consists of all elements of G, and two distinct vertices u, v are adjacent if and only if either uv or $vu \in \{t^2 \mid t \in G\} \cup \{a \in G \mid a^2 = 1\} \setminus \{1\}$. We denote this graph by $\mathbb{S}_2(G)$.

1. For $n = 3, 4$ find $\mathbb{S}_2(D_n)$, $\mathbb{S}_2(Sym(n))$
2. For $n = 7, 14$ find $\mathbb{S}_2(\mathbb{Z}/n\mathbb{Z})$.

Reference https://doi.org/10.1142/S1793830922501361