Fie $G_1, G_2$ = grupuri

$ord((g_1, g_2)) = lcm(ord(g_1), ord(g_2))$

$(g_1, g_2) \in G_1 \times G_2$

Obs: 1) $G$ - grup finit

$ord(g)$ = nr de elem

$ord(g)$ = cel mai mic nr $n \geq 1$ a.î. $g^n = e$

$\in G$

2) $\mathbb{Z}_m$: $ord(\hat{x}) = \frac{m}{gcd(m,x)}$

1) Det în $G = (\mathbb{Z}_{24} \times \mathbb{Z}_{22}, +)$

a) $ord(\bar{4}, \hat{6})$

$ord(\bar{4}) = \frac{24}{gcd(24,4)} = \frac{24}{4} = 6$ în $\mathbb{Z}_{24}$

$ord(\hat{6}) = \frac{22}{gcd(22,6)} = \frac{22}{2} = 11$ în $\mathbb{Z}_{22}$

$\Rightarrow ord(\bar{4}, \hat{6}) = lcm(6, 11) = 66$

b) $ord(\bar{9}, \hat{3})$

$ord(\bar{9}) = \frac{24}{gcd(24,9)} = \frac{24}{3} = 8$ în $\mathbb{Z}_{24}$

$ord(\hat{3}) = \frac{22}{gcd(22,3)} = \frac{22}{1} = 22$ în $\mathbb{Z}_{22}$

$\Rightarrow ord(\bar{9}, \hat{3}) = lcm(8, 22) = 88$

2) $G = \mathbb{Z}_2 \times \mathbb{Z}_5 \times \mathbb{Z}_8$

$1, 2 \quad 1, 5 \quad 1, 2, 4, 8$

a) $ord(\bar{1}, \hat{2}, \tilde{4}) = ?$

$ord(\bar{1}) = \frac{2}{gcd(2,1)} = 2$

$ord(\hat{2}) = \frac{5}{gcd(5,2)} = 5$

$ord(\tilde{4}) = \frac{8}{gcd(8,4)} = 2$

$ord = 10$

3) Det subgrupurile $(\mathbb{Z}_{16}, +)$

$\mathbb{Z}_{16} = \{\hat{0}, \hat{1}, \hat{2}, \ldots, \hat{15}\}$

$\langle \hat{0} \rangle = \{\hat{0} \cdot x \mid x \in \mathbb{Z}_{16}\} = \{\hat{0}\}$

$\langle \hat{1} \rangle = \mathbb{Z}_{16} = \langle \hat{5} \rangle = \langle \hat{7} \rangle = \langle \hat{11} \rangle = \langle \hat{13} \rangle = \langle \hat{15} \rangle = \langle \hat{9} \rangle = \langle \hat{3} \rangle$

prime cu 16

$\langle \hat{2} \rangle = \{\hat{0}, \hat{2}, \hat{4}, \ldots, \hat{14}\} = \langle \hat{6} \rangle = \langle \hat{14} \rangle = \langle \hat{10} \rangle$

$\langle \hat{3} \rangle = \mathbb{Z}_{16}$

$\langle \hat{4} \rangle = \{\hat{0}, \hat{4}, \hat{8}, \hat{12}\} = \langle \hat{12} \rangle$

$\langle \hat{5} \rangle = \mathbb{Z}_{16}$

$\langle \hat{6} \rangle = \{\hat{0}, \hat{2}, \ldots, \hat{14}\} = \{\hat{2}^n\}$

$\langle \hat{8} \rangle = \{\hat{0}, \hat{8}\}$