Group Homomorphism

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Group Homomorphism

Order of 4

Order of 6

Order of 8 (TJ 9.11)

Group Homomorphism

$D_6 \cong D_3 \times \mathbb{Z}_2$ (TJ 9.16)

(TJ 9.23)

$$G \times K \cong H \times K \not\Longrightarrow G \cong H$$

$$G = \mathbb{Z}, \quad H = 1, \quad K = \Pi_{n \in \mathbb{N}} \mathbb{Z}$$

"On Cancellation in Groups" by R. Hirshon, 1969

$$G \times K \cong H \times K \quad |K| < \infty \Longrightarrow G \cong H$$

(TJ 11.18)

- $\phi : G_1 \to G_2$
- $H_1 \triangleleft G_1$
- $\phi(H_1) = H_2$
- $G_1/H_1 \cong G_2/H_2$

$$G_1 = \mathbb{Z}_2 \quad G_2 = \{e\} \quad H_1 = \{0\} \quad H_2 = \{e\}$$