1 Groups

Remark 1.1 If we remove identity and inverses, G becomes a semi-group.

2 Quotient Groups

Theorem 2.1

Suppose $N \trianglelefteq G$ and $\pi : G \to G/N$ be the canonical projection. Then for every group homomorphism $\phi : G \to H$ s.t. $N \subseteq \ker \phi$, there exists a unique group homomorphism $\Phi : G/N \to H$ s.t. $\phi = \Phi \circ \pi$.