Group

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1 Introduction

Definition 1.1 (Group)**.** A *group* is a non-empty set Γ together with a binary operation on Γ, denoted " $\cdot$ ", that combines any two elements γ and γ' of Γ to form an element of Γ, denoted $\gamma \cdot \gamma'$, such that the following three requirements, known as *group axioms*, are satisfied:

- *Associativity:* For all g, h, j in Γ, one has $(g \cdot h) \cdot j = g \cdot (h \cdot j)$.
- *Identity:* There exists an element e in Γ such that, for every g in Γ, one has $e \cdot g = g$ and $g \cdot e = g$. Such an element is unique and is called the *identity element*.
- *Unique Inverse:* For each g in Γ, there exists an element h in Γ such that $g \cdot h = e$ and $h \cdot g = e$, where e is the identity element. For each g, the element h is unique and is called the *inverse* of h and is denoted g^{-1}.

2 More Information

You can learn more about controlling the appearance of HTML output here: https://quarto.org/docs/output-formats/html-basics.html