

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 g 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>