Groups & Vector Spaces

Mathematical Methods in the Physical Sciences

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Introduction

Definition

A group is a set of elements, G, together with a set operation, $\cdot$, that satisfies the following conditions.

Group Conditions

Closure:	$\forall\ a, b \in G, a \cdot b \in G$
Association:	$\forall\ a, b, c \in G, (a \cdot b) \cdot c = a \cdot (b \cdot c)$
Identity:	$\exists$ exactly 1 element, $i \in G \mid \forall\ a \in G, i \cdot a = a \cdot i = a$
Inversion:	$\forall\ a \in G\ \exists\ b \mid a \cdot b = b \cdot a = i$, where i is the identity element.

This is a test-a-roonie

Another test to see how Vim handles LaTeX.

Block Test

$$x = sin(y)$$
$$= -cos(y)^2$$

Block Types

This is a Block

This is important information

This is an Alert block

This is an important alert

This is an Example block

This is an example