Source:

1 | Definitions

1.1 | DONE group

A set and binary operation that satisfies Group Properties

- Closed
- Identity
- Inverse
- Associative

1.2 | DONE field

A set and two binary operations: the primary (addition) and secondary (multiplication) that ”mostly” satisfies group properties for both operations, and are **commutative and distributive**. It must be a group under the primary operation and a group under the secondary operation except without a secondary inverse for the primary indentity.

1.3 | DONE non-singular matrices

singular matrix: has no inverse. non-singular matrix: has an inverse aka determinant non zero

2 | Connections

2.1 | DONE connect direct sum and linear independence

the sum of two spaces is direct if their basises are linearly independent