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

2.2 | **TODO matrices to represent complex numbers**

3 | Computation

3.1 | **TODO Find the determinant of matrices**

3.2 | **TODO Find equations of lines and planes using cross product and dot product**

4 | Derivations

4.1 | **TODO properties of the determinant**

4.2 | **TODO inverse of a 2x2 matrix**