A very Simple

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1

Definition. *1.1 Fields*

Definition. *1.2 Vector spaces*

Definition. *1.4 Subspaces*

Definition 1. *1.5 Linear combination*

Definition 2. *1.7 Span*

Definition 3. *1.9 Linear dependence*

Definition 4. *1.12 Basis*

Definition 5. *1.14 Coordinate*

2 2. Linearity

Definition 6. *2.1 Linear map*

Definition 7. *2.4 Null-space and Range*

Definition 8. *2.6 Isomorphisms*

Definition 9. *2.13 Quotient space*

Definition 10. *2.15 Quotient map*

Definition 11. *2.16 Invariant*

Definition 12. *2.18 Nullity and rank*

Definition 13. *2.21 Matrix*

Definition 14. *2.23 Product*

Definition 15. *2.24 Algebra (bilinear map)*

3 3. Duality

Definition 16. *3.1 Dual space*

Definition 17. *3.3 i'th coordinate functional*

Definition 18. *3.7 Annihilator*

Definition 19. *3.12 Adjoint*

Definition 20. *3.19 Double dual*

Definition 21. *3.21 Natural correspondence*

4 4. Bilinear maps

Definition 22. *4.1 Bilinear map*

Definition 23. *4.3 Multilinear map*

Definition 24. *4.6 Symmetry and skew-symmetry*

Definition 25. *4.7 Alternating*

Definition 26. *4.9 Quadratic form*

Definition 27. *4.11 Orthogonal*

Definition 28. *4.14 non-degenerate*

Definition 29. *4.15 Symplectic*

Definition 30. *4.17 Positive and negative definite*

Definition 31. *4.19 Quadrics and conics*

5 5. Sums and products

Definition 32. *5.1 Direct sum*

Definition 33. *5.5 Complement*

Definition 34. *5.9 (external) Direct sum*

Definition 35. *5.10 Projection*

Definition 36. *5.12 idempotent*

Definition 37. *5.14 Tensor product*

Definition 38. *5.18 Pair*

6 6. Eigendecomposition

Definition 39. *6.1 Eigenspace*

Definition 40. *6.2 Spectrum and (geometric) multiplicity*

Definition 41. *6.3 Polynomial*