

## Index

- antipode, 19, 51
- block (of a partition), 56, 150, 152
- C\*-algebra, 117
- C\*-tensor category, 68
- capping, 150
- category of partitions, 74, 149, 160
- character, 136
  - truncated, 140
- classical strategy, 221
  - perfect, 4
- coassociativity, 17
- compact group, 115
- compact matrix quantum group
  - orthogonal, 21, 28
  - unitary, 29
- conjugate
  - Hilbert space, 53
- coproduct, 16
- corepresentation, 36, 38
- counit, 19
- direct product, 180
- direct sum, 33
- dual of a discrete group, 125
- duality map, 53, 62, 158, 160
- free complexification, 175
- free Poisson distribution, 138
- free product
  - of algebras, 168
  - of compact matrix quantum groups, 170
- free wreath product, 211, 220
  - algebra, 215
  - quantum group, 217
- Frobenius reciprocity, 131
- Gram
  - determinant, 92
  - matrix, 93, 133, 140
- graph, 195
- graph isomorphism game, 3, 226
- Haar
  - integral, 126
  - measure, 123
  - state, 128
- intertwiner, 41
- invariant subspace, 42
- invariants, 54
- mixing partition, 105
- morphisms of representations, 53
- pair partition, 54, 57, 62
- partition, 61
  - coloured, 159
  - crossing, 56
  - doubling, 92, 138
  - horizontal concatenation, 66
  - linear form, 62
  - linear map, 64
  - loop, 65
  - non-crossing, 57, 79, 91, 149

- projective, 94, 95, 97, 99
- reflection, 67
- rotation, 76
- vertical concatenation, 65
- partition quantum group, 74, 161
- positioner partition, 153
- positive operator-valued measure, 224
  
- quantum automorphism group of a graph, 196, 220
- quantum hyperoctahedral group, 83, 112, 186
- quantum orthogonal group, 27, 78, 110, 137, 257
- quantum permutation algebra, 7
- group, 22, 80, 111, 138, 186, 244, 250
- matrix, 6
- quantum strategy, 223, 225, 226, 238
- perfect, 5
- quantum unitary group, 31, 162, 254
  
- reflection group
  - classical, 183
  - quantum, 183, 190, 260
- representation, 33, 38
  - conjugate, 128, 158, 162
  - equivalent, 41
  - fundamental, 33
  - irreducible, 41, 46, 47, 100
  - restriction, 43
  - trivial, 33
  - unitary, 33
- representation category, 68
- representation theory, 45, 46
- residually finite
  - group, 242
  - quantum group, 244
- residually finite-dimensional algebra, 242
  
- Schur's Lemma, 46
- schur–Weyl duality, 53
- semicircle distribution, 135
- spectral measure, 135
- state, 123
- subrepresentation, 41
  
- Tannaka–Krein duality, 68
- tensor complexification, 180
- tensor product
  - of  $*$ -algebras, 14
  - of linear maps, 15
  - of representations, 33
  - of vector spaces, 12
- through-block decomposition, 94
- topological generation, 247
  
- universal  $*$ -algebra, 8
  
- Von Neumann algebra, 119
  
- Weingarten
  - formula, 134
  - matrix, 133, 140