

## Index

- admissible homomorphism, 181
- admissible neighborhood, 63
- almost all, 8
- almost simple, 52, 55, 145
- $\alpha$ -automorphism, 44
- $\alpha$ -isomorphism, 43, 203
- analytic map, 85
- atlas, 85, 87–8
  
- braid group, 167, 190, 192–3
- braid operation, 162, 194
- braid orbit, 162, 196
- branch cycle argument, 34
- branch point, 34, 120, 124, 241
- Bureau representation, 171
  
- Cartan's Lemma, 234
- circular component, 72
- class associated with  $p$ , 33, 72, 90
- coboundaries, 107
- cocycles, 107, 109
- cohomological dimension, 149–50
- complex structure, 85
- conjecture of Fried and Völklein, 151
- conjecture of Guralnick and Thompson, 37, 47
- conjecture of Shafarevich, 132, 151, 242
  
- deck transformation, 68
- degree of a covering, 68
- defined over, 40
- discriminant, 6, 33, 200
- distinguished generator, 32, 71–2, 91
  
- embedding problem, 131, 144, 151, 212, 289
  - abelian, 132, 140, 150
  - Frattini, 149
  - kernel of, 132
    - split, 132, 140, 150, 234, 289
- equivalence of coverings, 67
- Euclidean topology, 188, 201
  
- Frattini map, 149
- FG-extension, 32, 40
- fundamental group, 62, 81, 94
  
- Galois covering, 68
  - finite, 69, 72, 76, 89, 94, 183, 187, 201
- GAL-realization, 142, 144, 147, 152, 154, 164, 175
- GAP-realization, 151–2
- GAR-realization, 142, 144, 152, 176
- Gassner representation, 171
  
- Hensel's Lemma, 28, 34–5
- hermitian form, 96
- hilbertian, 10, 18, 51, 140, 151, 154, 212
- Hilbert space, 97
- homotopy, 62
  
- ideal point, 74
- idempotent, 225
  - minimal, 225
- induced algebra, 226
- inertia group generator, 92
  
- $\kappa$ -rational tuple, 49
- $\kappa$ -rational type, 44, 156
  
- Laurent series field, 27, 90
- Lie type groups, 55
- lift of a path, 64

248

manifold, 63  
 meromorphic function, 85  
 Newton's theorem, 26, 30  
 occurs regularly, 12, 289  
 path, 61  
 pseudo-algebraically closed, 151, 212  
 quasi-rigid, 56  
 ramification index, 33  
 ramification type, 37, 82, 90, 156  
 rational class, 44  
 rational tuple, 50  
 regular, 3, 235  
 Riemann's existence theorem (RET)  
   algebraic version, 37, 39, 94  
   analytic version, 86, 90, 96, 112  
   generalized, 201

*Index*

topological version, 82  
 version over  $k$ , 125  
 Riemann sphere, 85  
 Riemann surface, 85  
 rigid tuple, 38, 48, 50, 52, 54–5, 58,  
   147  
 rigid type, 39, 45, 48  
 semisimple algebra, 225  
 separable polynomial, 6, 8  
 simple cover, 198  
 sparse set, 16  
 sporadic groups, 54  
 square integrable function, 101, 104  
 ultrametric absolute value, 214  
 weakly rigid, 38–9, 158, 163, 196, 206  
 weakly  $\kappa$ -rational type, 46, 156  
 Weissauer's theorem, 22  
 wreath product, 135, 139