

Name Index

- Artin, E., 181
Ash, A., 190
Balasubramanian, R., 94, 95,
125, 127
Barban, M.B., 112
Barthel, L., 189
Bateman, P.T., 141, 154
Böcherer, S., 190
Bochner, S., 178, 180
Bröcker, T., 67
Cassels, J., 28
Chowla, S., 141, 154
Cohen, H., 80
Conrey, B., 178, 180
Davenport, H., 42, 117
Dieck, T., 67
Ellison, W., 15
Fainleib, A.S., 138
Féjer, L., 23
Foote, R., 35, 39, 41
Frey G., 80
Friedberg, S., 140, 190
Fröhlich, A., 28, 29
Furusawa, M., 190
Ghosh, A., 178, 180
Ginzburg, D., 190
Goldfeld, D., 187
Graham, S., 112, 113
Heath-Brown, R., 95
Hildebrand, A., 96
Hoffman, J., 190
Hoffstein, J., 140, 190
Iwaniec, H., 176, 187
Jacquet, H., 184
Jutila, M., 97, 104, 131, 153
Kahane, Jean-Pierre, 9
Katz, N., 53
Knapp A., 80
Lagarias, J., 42, 44, 48, 54, 61
Lang, S., 92
Luo, W., 190
Merel, L., 190
Montgomery, H., 44, 54, 72
Montgomery, H.L., 97, 154
Murty, M. Ram, 35, 46, 85, 95, 128,
134, 136, 137, 140, 147, 153, 159,
179, 185, 189
Murty, V. Kumar, 9, 35, 39, 46, 48,
77, 84, 95, 125, 127, 134, 136, 137,
140, 147, 153, 159, 185, 189
Odlyzko, A. M., 42, 44, 48, 54, 61
Oesterlé, J., 80
Ogg, A., 82, 84

- Perelli, A., 187
Piatetski-Shapiro, I., 189
Polya-Vinogradov, 95
Pomykala, J., 187
Ramakrishnan, D., 189, 190
Rankin, R., 90, 137, 138
Rhoades, S., 35, 61
Rohrlich, D., 134, 190
Rudin, W., 11
Rudnick, Z., 190
Saparnijazov, O., 138
Saradha, N., 46
Sarnak, P., 190
Scherk, J., 46
Schulze-Pillot, R., 190
Selberg, A., 177, 178, 180
Serre, J.-P., 26, 42, 61, 65, 68, 83
Shahidi, F., 90
Shalika, J.A., 184
Shimura, G., 80, 134
Siegel, C. L., 95
Stark, H. M., 35, 37, 38
Stefanicki, T., 140, 187, 189
Uchida, K., 32
van der Waall, R. W., 32
Vaughan, R.C., 97, 154
Vehov, P.P., 112
Vignéras, M.F., 179
Vinogradov, I.M., 98, 100
Viola, C., 187
Waldspurger, J., 134
Wales, D., 41
Zhang, Y., 189

Subject Index

- L*-function formalism, 35
- algebraic number field, 19
- approximate functional equation, 93
- Aramata-Brauer theorem, 30, 35, 40, 183
- Archimedean Euler factors, 28
- Artin conductor, 28, 44
- Artin's conjecture, 29, 46, 50, 52, 179, 181, 183
- Artin's reciprocity theorem, 29
- Artin's theorem, 36
- Atkin-Lehner involution, 81
- averages of higher derivatives, 175
- Barban-Vehov weights, 110, 112
- Birch and Swinnerton-Dyer conjectures, 189
- Borel subgroup, 59
- Brauer induction theorem, 29
- Brauer's induction theorem, 182
- Cartan subgroup, 59, 60
- character sums, 132
- Chebotarev density theorem, 2, 42, 52, 68, 182
- Chebycheff polynomials, 88
- class function, 25
- class number formula, 16
- classification of primitive functions, 184
- Clifford's theorem, 40
- CM-type, 83
- combinatorial identities, 88
- compact groups, 65, 67–69
- compact Riemann surface, 77, 81
- congruence subgroup, 76
- conjugacy class, 27
- cuspidal automorphic representations, 189, 190
- decomposition group, 27
- Dedekind's conjecture, 30, 32, 183
- Dedekind's zeta function, 19, 21, 37, 39, 42, 52, 63, 185
- Deligne's Prime Number Theorem, 68
- dimension, 179
- Dirichlet polynomial, 2, 116
- Dirichlet series with positive coefficients, 87
- discriminant, 44
- eigenform, 82
- Eisenstein series, 78
- elliptic curve, 1, 53, 58
- elliptic curves over cyclotomic fields, 190
- equicontinuity, 65
- equidistribution, 1, 65, 66
- Erdős-Turán inequality, 71
- estimate of Rankin-Shahidi, 138

- Euler product, 16, 18, 19, 21, 177
- explicit formula method, 128
- factorization into primitives, 179
- Féjer Kernel, 12
- Fourier inversion, 11
- Frobenius element, 27
- Frobenius reciprocity, 25, 30, 31, 36, 43
- functional equation, 6, 177
- fundamental discriminant, 100, 104, 105, 130, 134, 165, 173, 187
- Galois module structure, 29
- generalized ideal, 22
- Goldfeld-Viola conjecture, 189
- Haar measures, 65, 67, 72, 84
- Hadamard factorization, 38
- Hadamard's proof, 9
- Hecke operators, 82
- Hecke subgroup, 76
- Hecke's L -functions, 21
- Hecke's theorem, 81
- Hensel's estimate, 44, 46, 49
- Hensel's inequality, 60
- higher ramification groups, 28
- Hilbert class field, 55
- Howe correspondence, 189
- hyperbolic, 76
- ideal class group, 21
- ideal classes, 21
- inductive property of L -functions, 43
- inertia group, 27
- inner product, 78
- integrated Poly-Vinogradov estimate, 141
- Jutila's character sum estimate, 97
- kernel function, 53
- Langlands program, 84
- large sieve inequality, 117, 175
- least prime in a conjugacy class, 52
- line integral, 6
- Mackey's theorems, 26
- mean-value estimate of Jutila, 131
- metaplectic Eisenstein series, 140
- method of averages, 2
- minimal normal subgroup, 34
- modular L -functions, 2
- modular curve, 77
- modular elliptic curve, 3
- modular forms, 1, 77
- mollifier polynomial, 116
- monomial characters, 33, 61
- newforms, 83
- non-abelian L -functions, 181
- normalized eigenfunctions, 82
- oldforms, 83
- omega theorem, 88
- oscillation of Fourier coefficients, 2, 75, 84
- parabolic, 76
- Parseval's formula, 12
- Peter-Weyl Theorem, 66
- Petersson inner product, 83
- Polya-Vinogradov estimate, 95, 97, 129, 130, 139
- Polya-Vinogradov inequality, 97, 137
- positive proportion, 127
- prime ideal theorem, 20
- prime number theorem, 2, 5, 6
- primes in arithmetic progression, 15
- primitive function, 178
- principal congruence subgroup, 75
- quadratic twists, 133

- Ramanujan conjecture, 75, 83, 184
- Ramanujan's cusp form, 79
- Ramanujan-Petersson conjecture, 84
- Rankin's estimate, 166
- Rankin's theorem, 90
- Rankin-Selberg convolution, 140
- ray class characters, 190
- ray class group, 21, 22
- real character sums, 152
- regular representation, 26
- relative discriminant, 44
- Riemann hypothesis, 11, 95, 97, 128, 129
- Riemann zeta function, 177, 183
- Riemann-Lebesgue lemma, 12, 13
- Sato-Tate conjecture, 2, 83, 84, 91
- Selberg eigenvalue conjecture, 183, 190
- Selberg's class, 177
- Selberg's conjectures, 3, 177
- semidirect product, 34
- smooth approximation, 98
- smoothing operator, 163
- Stirling's formula, 118
- supersolvable group, 61
- Tate's thesis, 22
- Tauberian theorem, 11, 19, 88
- Tauberian theory, 2
- theorem of Brauer, 29
- trigonometric identities, 86
- trigonometric inequality, 2
- trigonometric lemma, 69
- uniform distribution, 2
- unique factorization of L -functions, 182
- upper bounds for torsion, 190
- upper half-plane, 76
- Vinogradov's lemma, 98, 100
- weighted sums, 137, 158, 187
- Weil's conjectures, 75
- Weil's criterion, 67
- Wiener-Ikehara Tauberian theorem, 7, 8, 68