

- eigenvalues, 266, 410, 490
 - bounds for, 498
 - continuity of, 497
 - determinant and trace, 494
 - distinct, 514
 - generalized, 571
 - index of, 401, 587, 596
 - perturbations and condition of, 528, 551
 - semisimple, 596
 - sensitivity, hermitian matrices, 552
 - unit, 696
 - eigenvalues of
 - bordered matrices, 552
 - discrete Laplacian, 566, 598
 - triangular and diagonal matrices, 501
 - tridiagonal Toeplitz matrices, 514
 - eigenvectors, 266, 490
 - of commuting matrices, 503
 - generalized, 593, 594
 - independent, 511
 - of tridiagonal Toeplitz matrices, 514
 - electrical circuits, 73, 204
 - elementary matrices, 131–133
 - interchange matrices, 135, 140
 - elementary orthogonal projector, 322, 431
 - rank of, 337
 - elementary reflector, 324, 444
 - determinant of, 485
 - elementary row and column operations, 4, 8
 - and determinants, 463
 - elementary triangular matrix, 142
 - ellipsoid, 414
 - degenerate, 425
 - elliptical inner product, 286
 - elliptical norm, 288
 - empty set, 383
 - EP matrices, 408
 - equal matrices, 81
 - equivalence, row and column, 134
 - testing for, 137
 - equivalent norms
 - matrices, 425
 - vectors, 276
 - equivalent statements, 54
 - equivalent systems, 3
 - ergodic class, 695
 - error, absolute and relative, 414
 - essentially positive matrix, 686
 - estimators, 446
 - euclidean norm, 270
 - unitary invariance of, 321
 - evolutionary processes, 616
 - exponential
 - complex, 544
 - discrete, 361
 - matrix, 441, 525
 - inverse of, 614
 - products of, 539
 - sums of, 614
 - extending to a basis, 201
 - extending to an orthonormal basis, 325, 335, 338, 404
 - extension set, 188
- F**
- Faddeev and Sominskii, 504
 - fail-safe system, 701
 - fast Fourier transform (FFT), 368
 - FFT algorithm, 368, 370, 373, 381, 651
 - FFT operation count, 377
 - fast integer multiplication, 375
 - filtering random noise, 418
 - finite difference matrix, 522, 639
 - finite-dimensional spaces, 195
 - finite group, 676
 - Fischer, Ernst, 550
 - five-point difference equations, 564
 - fixed points, 386, 391
 - of a reflector, 338
 - flatness, 164
 - floating-point number, 21
 - forward substitution, 145
 - four fundamental subspaces, 169
 - summary, 178
 - Fourier coefficients, 299
 - Fourier expansion, 299
 - and projection, 440
 - Fourier, Jean Baptiste Joseph, 299
 - Fourier matrix, 357
 - Fourier series, 299, 300
 - Fourier transform
 - continuous, 357
 - discrete, 356, 358
 - Frame, J. S., 504
 - Francis, J. F. G., 535
 - Fréchet, Maurice, R., 289
 - free variables, 58, 61
 - in nonhomogeneous systems, 70
 - frequency, 362
 - frequency domain, 363
 - Frobenius, Ferdinand Georg, 44, 123, 215, 662
 - Frobenius form, 680
 - Frobenius inequality, 221
 - Frobenius matrix norm, 279, 425, 428
 - and inner product, 288
 - of rank-one matrices, 391
 - unitary invariance of, 337
 - Frobenius test for primitivity, 678
 - full-rank factorization, 140, 221, 633
 - for determining index, 640
 - of a projector, 393
 - function
 - affine, 89
 - composition of, 93, 615, 608
 - domain of, 89
 - linear, 89, 238
 - norm of, 288
 - range of, 89