as_ordered_terms() (*sympy.core.expr.Expr method*), 955
as_poly() (*sympy.core.expr.Expr method*), 956
as_poly() (*sympy.core.numbers.AlgebraicNumber method*), 991
as_poly() (*sympy.core.relational.Equality method*), 1024
as_poly() (*sympy.polys.polytools.Poly method*), 2383
as_powers_dict() (*sympy.core.expr.Expr method*), 956
as_real_imag() (*sympy.core.add.Add method*), 1016
as_real_imag() (*sympy.core.expr.Expr method*), 956
as_real_imag() (*sympy.functions.elementary.complexes.adjoint method*), 383
as_real_imag() (*sympy.functions.elementary.complexes.conjugate method*), 383
as_real_imag() (*sympy.functions.elementary.exponential.exp method*), 411
as_real_imag() (*sympy.functions.elementary.exponential.log method*), 413
as_real_imag() (*sympy.functions.elementary.hyperbolic.sinh method*), 402
as_real_imag() (*sympy.matrices.common.MatrixCommon method*), 1328
as_relational() (*sympy.sets.fancysets.Range method*), 1208
as_relational() (*sympy.sets.sets.Complement method*), 1201
as_relational() (*sympy.sets.sets.FiniteSet method*), 1197
as_relational() (*sympy.sets.sets.Intersection method*), 1199
as_relational() (*sympy.sets.sets.Interval method*), 1195
as_relational() (*sympy.sets.sets.SymmetricDifference method*), 1201
as_relational() (*sympy.sets.sets.Union method*), 1198
as_set() (*sympy.logic.boolalg.Boolean method*), 1163
as_set() (*sympy.logic.boolalg.BooleanFalse method*), 1166
as_set() (*sympy.logic.boolalg.BooleanTrue method*), 1165
as_submodule() (*sympy.polys.numberfields.primitive_element.PrimitiveElement method*), 2706
as_sum() (*sympy.integrals.integrals.Integral method*), 601
as_terms() (*sympy.core.expr.Expr method*), 957
as_two_terms() (*sympy.core.add.Add method*), 1016
as_two_terms() (*sympy.core.mul.Mul method*), 1011
ascents() (*sympy.combinatorics.permutations.Permutation method*), 265
asec (*class in sympy.functions.elementary.trigonometric*), 398
asech (*class in sympy.functions.elementary.hyperbolic*), 407
aseries() (*sympy.core.expr.Expr method*), 957
asin (*class in sympy.functions.elementary.trigonometric*), 395
asinh (*class in sympy.functions.elementary.hyperbolic*), 405
ask() (*in module sympy.assumptions.ask*), 191
assemble_partfrac_list() (*in module sympy.polys.partfrac*), 2445
Assignment (*class in sympy.codegen.ast*), 1126
AssignmentBase (*class in sympy.codegen.ast*), 1127
AssociationError, 2183
assoc_laguerre (*class in sympy.functions.special.polynomials*), 543
assoc_legendre (*class in sympy.functions.special.polynomials*), 540
assoc_recurrence_memo() (*in module sympy.utilities.memoization*), 2110
assuming() (*in module sympy.assumptions.assume*), 197
AssumptionKeys (*class in sympy.assumptions.ask*), 191
assumptions0 (*sympy.core.basic.Basic property*), 929
AssumptionsContext (*class in sympy.assumptions.assume*), 194
atan (*class in sympy.functions.elementary.trigonometric*), 397
atan2 (*class in sympy.functions.elementary.trigonometric*), 400
atanh (*class in sympy.functions.elementary.hyperbolic*), 406
Atom (*class in sympy.core.basic*), 945
AtomicExpr (*class in sympy.core.expr*), 976
atoms() (*sympy.combinatorics.permutations.Permutation method*), 265
atoms() (*sympy.core.basic.Basic method*), 930
atoms() (*sympy.matrices.common.MatrixCommon

method), 1328
atoms_table (in module sympy.printing.pretty.pretty_symbology), 2186
attempted (sympy.testing.runtests.SymPyTestResults attribute), 2031
attr_params() (sympy.codegen.ast.Node method), 1135
Attribute (class in sympy.codegen.ast), 1127
aug_assign() (in module sympy.codegen.ast), 1142
AugmentedAssignment (class in sympy.codegen.ast), 1127
auto_number() (in module sympy.parsing.sympy_parser), 2129
auto_symbol() (in module sympy.parsing.sympy_parser), 2128
autowrap() (in module sympy.utilities.autowrap), 2041
auxiliary_circle() (sympy.geometry.ellipse.Ellipse method), 2255
auxiliary_eqs (sympy.physics.mechanics.kane.KanesMethod property), 1765
axial_force() (sympy.physics.continuum_mechanics.beam.Beam3D method), 1983
axial_stress() (sympy.physics.continuum_mechanics.beam.Beam3D method), 1983
axis() (sympy.algebras.Quaternion method), 888
AxisOrienter (class in sympy.vector.orienters), 1466
AZ() (in module sympy.crypto.crypto), 2762

B

B (in module sympy.physics.secondquant), 1546
B (sympy.physics.optics.gaussopt.RayTransferMatrix property), 1865
b_interval (sympy.sets.fancysets.ComplexRegion property), 1210
banded() (in module sympy.matrices.sparsetools), 1366
base (sympy.combinatorics.perm_groups.PermutationGroup property), 295
base (sympy.functions.elementary.exponential.exp property), 412
base (sympy.tensor.indexed.Indexed property), 1402
base_oneform() (sympy.diffgeom.CoordSystem method), 2803
base_oneforms() (sympy.diffgeom.CoordSystem method), 2803
base_scalar() (sympy.diffgeom.CoordSystem method), 2803
base_scalars() (sympy.diffgeom.CoordSystem method), 2803
base_solution_linear() (in module sympy.solvers.diophantine.diophantine), 723
base_vector() (sympy.diffgeom.CoordSystem method), 2803
base_vectors() (sympy.diffgeom.CoordSystem method), 2803
BaseBackend (class in sympy.plotting.plot), 2868
BaseCovarDerivativeOp (class in sympy.diffgeom), 2813
BasePolynomialError (class in sympy.polys.polyerrors), 2643
BaseScalarField (class in sympy.diffgeom), 2807
BaseSeries (class in sympy.plotting.plot), 2865
baseswap() (sympy.combinatorics.perm_groups.PermutationGroup method), 295
BaseVectorField (class in sympy.diffgeom), 2808
Basic (class in sympy.core.basic), 927
basic_orbits (sympy.combinatorics.perm_groups.PermutationGroup property), 297
basic_root() (sympy.liealgebras.type_a.TypeA method), 2328
basic_root() (sympy.liealgebras.type_b.TypeB method), 2330
basic_root() (sympy.liealgebras.type_c.TypeC method), 2331
basic_root() (sympy.liealgebras.type_d.TypeD method), 2333
basic_root() (sympy.liealgebras.type_e.TypeE method), 2334
basic_root() (sympy.liealgebras.type_f.TypeF method), 2336
basic_stabilizers (sympy.combinatorics.perm_groups.PermutationGroup property), 297
basic_transversals (sympy.combinatorics.perm_groups.PermutationGroup property), 298
basis() (sympy.liealgebras.type_a.TypeA method), 2328
basis() (sympy.liealgebras.type_b.TypeB method), 2330
basis() (sympy.liealgebras.type_c.TypeC method), 2331
basis() (sympy.liealgebras.type_d.TypeD method), 2333

basis() (*sympy.liealgebras.type_e.TypeE method*), 2334
basis() (*sympy.liealgebras.type_f.TypeF method*), 2336
basis() (*sympy.liealgebras.type_g.TypeG method*), 2337
basis() (*sympy.polys.agca.modules.FreeModule method*), 2454
basis_element_pullbacks() (*sympy.polys.numberfields.modules.SubmoduleMe method*), 2727
basis_elements() (*sympy.polys.numberfields.modules.PowerBasisMo method*), 2720
BBra (*in module sympy.physics.secondquant*), 1546
Bd (*in module sympy.physics.secondquant*), 1546
Beam (*class in sympy.physics.continuum_mechanics.beam*), 1949
Beam3D (*class in sympy.physics.continuum_mechanics.beam*), 1981
BeamParameter (*class in sympy.physics.optics.gaussopt*), 1857
bell (*class in sympy.functions.combinatorial.numbers*), 427
below() (*sympy.printing.pretty.stringpict.stringPict method*), 2186
bending_moment() (*sympy.physics.continuum_mechanics.beam.Beam method*), 1953
bending_moment() (*sympy.physics.continuum_mechanics.beam.Beam3D method*), 1983
Benini() (*in module sympy.stats*), 2888
bernoulli (*class in sympy.functions.combinatorial.numbers*), 428
Bernoulli (*class in sympy.solvers.ode.single*), 778
Bernoulli() (*in module sympy.stats*), 2876
BernoulliProcess (*class in sympy.stats*), 2953
BesselBase (*class in sympy.functions.special.bessel*), 497
besseli (*class in sympy.functions.special.bessel*), 499
besselj (*class in sympy.functions.special.bessel*), 497
besselk (*class in sympy.functions.special.bessel*), 499
besselsimp() (*in module sympy.simplify.simplify*), 666
besselv (*class in sympy.functions.special.bessel*), 498
beta (*class in sympy.functions.special.beta_functions*), 470
Beta() (*in module sympy.stats*), 2889
BetaBinomial() (*in module sympy.stats*), 2878
BetaNoncentral() (*in module sympy.stats*), 2890
BetaPrime() (*in module sympy.stats*), 2891
bidiagonal_decomposition() (*sympy.matrices.matrices.MatrixEigen method*), 1237
bidiagonalize() (*sympy.matrices.matrices.MatrixEigen method*), 1238
bifid5_square() (*in module sympy.crypto.crypto*), 2776
bifid6_square() (*in module sympy.crypto.crypto*), 2779
bin_to_gray() (*sympy.combinatorics.graycode method*), 351
binary_function() (*in module sympy.utilities.autowrap*), 2042
binary_partitions() (*in module sympy.utilities.iterables*), 2071
BinaryQuadratic (*class in sympy.solvers.diophantine.diophantine*), 747
bind_C() (*sympy.codegen.fnodes.Module method*), 1153
binomial (*class in sympy.functions.combinatorial.factorials*), 430
Binomial() (*in module sympy.stats*), 2877
binomial_coefficients() (*in module sympy.ntheory.multinomial*), 1511
binomial_coefficients_list() (*in module sympy.ntheory.multinomial*), 1512
bisectors() (*sympy.geometry.line.LinearEntity method*), 2219
bisectors() (*sympy.geometry.polygon.Polygon method*), 2276
bisectors() (*sympy.geometry.polygon.Triangle method*), 2294
bitlist_from_subset() (*sympy.combinatorics.subsets.Subset class method*), 340
BKet (*in module sympy.physics.secondquant*), 1546
block_collapse() (*in module sympy.matrices.expressions.blockmatrix*), 1385

BlockDiagMatrix (*class in sympy.matrices.expressions.blockmatrix*), 1385
BlockMatrix (*class in sympy.matrices.expressions.blockmatrix*), 1380
bm (*sympy.functions.special.hyper.meijerg property*), 525
bode_magnitude_numerical_data() (*sympy.physics.control.control_plots method*), 1938
bode_magnitude_plot() (*sympy.physics.control.control_plots method*), 1936
bode_phase_numerical_data() (*sympy.physics.control.control_plots method*), 1939
bode_phase_plot() (*sympy.physics.control.control_plots method*), 1938
bode_plot() (*sympy.physics.control.control_plots method*), 1936
bodies (*sympy.physics.mechanics.jointsmethod.JointsMethod property*), 1781
bodies (*sympy.physics.mechanics.system.SymbolicSystem property*), 1786
Body (*class in sympy.physics.mechanics.body*), 1756
BodyOrienter (*class in sympy.vector.orienters*), 1467
bool_map() (*in module sympy.logic.boolalg*), 1177
bool_maxterm() (*in module sympy.logic.boolalg*), 1181
bool_minterm() (*in module sympy.logic.boolalg*), 1182
bool_monomial() (*in module sympy.logic.boolalg*), 1182
Boolean (*class in sympy.logic.boolalg*), 1163
BooleanFalse (*class in sympy.logic.boolalg*), 1165
BooleanKind (*in module sympy.core.kind*), 1074
BooleanTrue (*class in sympy.logic.boolalg*), 1163
BosonicBasis (*class in sympy.physics.secondquant*), 1546
bother (*sympy.functions.special.hyper.meijerg property*), 525
bottom_up() (*in module sympy.core.traversal*), 1080
bound_symbols (*sympy.concrete.expr_with_limits.ExprWithLimits property*), 606
bound_symbols (*sympy.core.function.Lambda property*), 1040
bound_symbols (*sympy.core.function.Subs property*), 1052
boundary (*sympy.sets.sets.Set property*), 1185
boundary_conditions (*sympy.physics.continuum_mechanics.beam.Beam property*), 1954
boundary_conditions (*sympy.physics.continuum_mechanics.beam.Beam3D property*), 1983
BoundedPareto() (*in module sympy.stats*), 2892
bounds (*sympy.geometry.ellipse.Ellipse property*), 2255
bounds (*sympy.geometry.entity.GeometryEntity property*), 2194
bounds (*sympy.geometry.line.LinearEntity2D property*), 2237
bounds (*sympy.geometry.point.Point2D property*), 2209
bounds (*sympy.geometry.polygon.Polygon property*), 2276
bq (*sympy.functions.special.hyper.hyper property*), 522
bq (*sympy.functions.special.hyper.meijerg property*), 525
Bra (*class in sympy.physics.quantum.state*), 1832
bra (*sympy.physics.quantum.operator.OuterProduct property*), 1812
bra (*sympy.physics.secondquant.InnerProduct property*), 1553
BraBase (*class in sympy.physics.quantum.state*), 1833
bracelets() (*in module sympy.utilities.iterables*), 2071
BreakToken (*class in sympy.codegen.ast*), 1127
brewster_angle() (*in module sympy.physics.optics.utils*), 1880
bsgs_direct_product() (*in module sympy.combinatorics.tensor_can*), 370
bspline_basis() (*in module sympy.functions.special.bsplines*), 511
bspline_basis_set() (*in module sympy.functions.special.bsplines*), 512
build_expression_tree() (*in module sympy.series.gruntz*), 623
build_options() (*in module sympy.polys.polyoptions*), 2643

C

C (*sympy.matrices.common.MatrixCommon property*), 1327
C (*sympy.physics.optics.gaussopt.RayTransferMatrix property*), 1865
C89CodePrinter (*class in sympy.printing.c*), 2141
C99CodePrinter (*class in sympy.printing.c*), 2141
calculate_series() (*in module sympy.series.gruntz*), 624
can_transf_matrix (*sympy.physics.units.dimensions.DimensionSystem property*), 1585
canberra_distance() (*sympy.geometry.point.Point method*), 2203
cancel() (*in module sympy.polys.polytools*), 2376
cancel() (*sympy.core.expr.Expr method*), 958
cancel() (*sympy.polys.polyclasses.DMF method*), 2567
cancel() (*sympy.polys.polyclasses.DMP method*), 2562
cancel() (*sympy.polys.polytools.Poly method*), 2383
cancel() (*sympy.polys.rings.PolyElement method*), 2554
canon_bp() (*in module sympy.tensor.tensor*), 1419
canon_bp() (*sympy.tensor.tensor.TensAdd method*), 1416
canon_bp() (*sympy.tensor.tensor.TensMul method*), 1417
canonical (*sympy.core.relational.Relational property*), 1020
canonical_form() (*sympy.stats.DiscreteMarkovChain method*), 2946
canonical_odes() (*in module sympy.solvers.ode.systems*), 809
canonical_variables (*sympy.core.basic.Basic property*), 931
canonicalize() (*in module sympy.combinatorics.tensor_can*), 365
capture() (*in module sympy.utilities.iterables*), 2071
cardinality (*sympy.combinatorics.permutations.Permutation property*), 265
cardinality (*sympy.combinatorics.subsets.Subset property*), 340
cartan_matrix() (*sympy.liealgebras.root_system.RootSystem method*), 2327
cartan_matrix() (*sympy.liealgebras.type_a.TypeA method*), 2328
cartan_matrix() (*sympy.liealgebras.type_b.TypeB method*), 2330
cartan_matrix() (*sympy.liealgebras.type_c.TypeC method*), 2331
cartan_matrix() (*sympy.liealgebras.type_d.TypeD method*), 2333
cartan_matrix() (*sympy.liealgebras.type_e.TypeE method*), 2334
cartan_matrix() (*sympy.liealgebras.type_f.TypeF method*), 2336
cartan_matrix() (*sympy.liealgebras.type_g.TypeG method*), 2337
CartanMatrix() (*in module sympy.liealgebras.cartan_matrix*), 2341
CartanType_generator (*class in sympy.liealgebras.cartan_type*), 2340
CartesianComplexRegion (*class in sympy.sets.fancysets*), 1212
casoratian() (*in module sympy.matrices.dense*), 1322
cast_check() (*sympy.codegen.ast.Type method*), 1139
cast_nocheck (*sympy.codegen.ast.FloatBaseType attribute*), 1131
cast_nocheck() (*sympy.codegen.ast.FloatType method*), 1131
Catalan (*class in sympy.core.numbers*), 1002
catalan (*class in sympy.functions.combinatorial.numbers*), 431
Category (*class in sympy.categories*), 2747
Cauchy() (*in module sympy.stats*), 2893
cauchy_lower_bound() (*sympy.polys.polyclasses.DMP method*), 2562
cauchy_upper_bound() (*sympy.polys.polyclasses.DMP method*), 2562
Cbrt (*class in sympy.codegen.cfunctions*), 1143
cbrt() (*in module sympy.functions.elementary.miscellaneous*), 425
ccode() (*in module sympy.printing.c*), 2141
CCodeGen (*class in sympy.utilities.codegen*), 2047
ceiling (*class in sympy.functions.elementary.integers*), 409

center (*sympy.geometry.ellipse.Ellipse property*), 2255
center (*sympy.geometry.polygon.RegularPolygon property*), 2287
center() (*sympy.combinatorics.perm_groups.PermutationGroup method*), 298
central_inertia (*sympy.physics.mechanics.rigidbody.RigidBody property*), 1748
centralizer() (*sympy.combinatorics.perm_groups.PermutationGroup method*), 299
CentralMoment (*class in sympy.stats*), 2977
centroid (*sympy.geometry.polygon.Polygon property*), 2276
centroid (*sympy.geometry.polygon.RegularPolygon property*), 2287
centroid() (*in module sympy.geometry.util*), 2200
CG (*class in sympy.physics.quantum.cg*), 1792
cg_simp() (*in module sympy.physics.quantum.cg*), 1794
CGate (*class in sympy.physics.quantum.gate*), 1842
CGateS (*class in sympy.physics.quantum.gate*), 1843
change_index() (*sympy.concrete.expr_with_intlimits.ExprWithIntLimits method*), 911
change_member_label() (*sympy.physics.continuum_mechanics.truss.Truss method*), 2023
change_node_label() (*sympy.physics.continuum_mechanics.truss.Truss method*), 2024
characteristic() (*sympy.polys.domains.domain.Domain method*), 2508
characteristic() (*sympy.polys.domains.FiniteField method*), 2524
charpoly() (*sympy.matrices.matrices.MatrixDeterminant method*), 1228
charpoly() (*sympy.polys.matrices.ddm.DDM method*), 2690
charpoly() (*sympy.polys.matrices.domainmatrix.DomainMatrix method*), 2672
charpoly() (*sympy.polys.matrices.sdm.SDM method*), 2692
chebyshevt (*class in sympy.functions.special.polynomials*), 536
chebyshevt_poly() (*in module sympy.polys.orthopolys*), 2439
chebyshevt_root (*class in sympy.functions.special.polynomials*), 539
chebyshevu (*class in sympy.functions.special.polynomials*), 538
chebyshevu_poly() (*in module sympy.polys.orthopolys*), 2439
chebyshevu_root (*class in sympy.functions.special.polynomials*), 539
check_rigid_body() (*in module sympy.crypto.crypto*), 2763
check_output() (*sympy.testing.runtests.SymPyOutputChecker method*), 2031
checkinfsol() (*in module sympy.solvers.ode*), 765
checkodesol() (*in module sympy.solvers.ode*), 762
checkpdesol() (*in module sympy.solvers.pde*), 830
checksol() (*in module sympy.solvers.solvers*), 850
Chi (*class in sympy.functions.special.error_functions*), 495
Chi() (*in module sympy.stats*), 2893
child (*sympy.physics.mechanics.joint.Joint property*), 1772
child_axis (*sympy.physics.mechanics.joint.Joint property*), 1772
child_point (*sympy.physics.mechanics.joint.Joint property*), 1772
ChiNoncentral() (*in module sympy.stats*), 2894
ChiSquared() (*in module sympy.stats*), 2895
cholesky() (*sympy.matrices.dense.DenseMatrix method*), 1362
cholesky() (*sympy.matrices.matrices.MatrixBase method*), 1291
cholesky_solve() (*sympy.matrices.matrices.MatrixBase method*), 1292
Ci (*class in sympy.functions.special.error_functions*), 492
Circle (*class in sympy.geometry.ellipse*), 2269
circle_pts() (*in module sympy.physics.quantum.circuitplot*), 1841
CircuitPlot (*class in sympy.physics.quantum.circuitplot*), 1840
circumcenter (*sympy.geometry.polygon.RegularPolygon property*), 2287
circumcenter (*sympy.geometry.polygon.Triangle property*), 2295
circumcircle (*sympy.geometry.polygon.RegularPolygon property*), 2288
circumcircle (*sympy.geometry.polygon.Triangle property*), 2295

circumference (*sympy.geometry.ellipse.Circle property*), 2270
circumference (*sympy.geometry.ellipse.Ellipse property*), 2256
circumradius (*sympy.geometry.polygon.RegularPolygon property*), 2288
circumradius (*sympy.geometry.polygon.Triangle property*), 2296
class_key() (*sympy.core.add.Add class method*), 1016
class_key() (*sympy.core.basic.Basic class method*), 931
classify_diop() (*in module sympy.solvers.diophantine.diophantine*), 721
classify_ode() (*in module sympy.solvers.ode*), 760
classify_pde() (*in module sympy.solvers.pde*), 829
clear() (*sympy.tensor.tensor._TensorManager method*), 1422
clear_cache() (*sympy.polys.rootoftools.ComplexRootOf class method*), 2435
clear_denoms() (*sympy.polys.polyclasses.DMP method*), 2562
clear_denoms() (*sympy.polys.polytools.Poly method*), 2384
clear_loads() (*sympy.physics.mechanics.body.Body method*), 1761
clebsch_gordan() (*in module sympy.physics.wigner*), 1567
clone() (*sympy.polys.polyoptions.Options method*), 2643
closing_angle() (*sympy.geometry.line.Ray2D method*), 2240
closure (*sympy.sets.sets.Set property*), 1186
CMod (*class in sympy.physics.quantum.shor*), 1856
cmoment() (*in module sympy.stats*), 2978
cmplx (*class in sympy.codegen.fnodes*), 1154
CNOT (*in module sympy.physics.quantum.gate*), 1843
CNotGate (*class in sympy.physics.quantum.gate*), 1843
CodeBlock (*class in sympy.codegen.ast*), 1128
CodeGen (*class in sympy.utilities.codegen*), 2048
codegen() (*in module sympy.utilities.codegen*), 2053
CodePrinter (*class in sympy.printing.codeprinter*), 2183
CodeWrapper (*class in sympy.utilities.autowrap*), 2040
codomain (*sympy.categories.CompositeMorphism property*), 2745
codomain (*sympy.categories.Morphism property*), 2743
coeff() (*sympy.core.expr.Expr method*), 958
coeff() (*sympy.polys.rings.PolyElement method*), 2555
coeff() (*sympy.series.sequences.SeqBase method*), 632
coeff_bell() (*sympy.series.formal.FormalPowerSeries method*), 647
coeff_monomial() (*sympy.polys.polytools.Poly method*), 2384
coeff_mul() (*sympy.series.sequences.EmptySequence method*), 636
coeff_mul() (*sympy.series.sequences.SeqBase method*), 632
coeff_mul() (*sympy.series.sequences.SeqFormula method*), 635
coeff_mul() (*sympy.series.sequences.SeqPer method*), 636
coeff_search() (*in module sympy.polys.numberfields.utilities*), 2739
coefficients (*sympy.geometry.line.Line2D property*), 2239
coeffs() (*sympy.core.numbers.AlgebraicNumber method*), 991
coeffs() (*sympy.polys.polyclasses.DMP method*), 2562
coeffs() (*sympy.polys.polytools.Poly method*), 2385
coeffs() (*sympy.polys.rings.PolyElement method*), 2555
CoercionFailed (*class in sympy.polys.polyerrors*), 2644
cofactor() (*sympy.matrices.matrices.MatrixDeterminant method*), 1229
cofactor_matrix() (*sympy.matrices.matrices.MatrixDeterminant method*), 1229
cofactors() (*in module sympy.polys.polytools*), 2367
cofactors() (*sympy.core.numbers.Number method*), 982
cofactors() (*sympy.polys.domains.domain.Domain method*), 2508
cofactors() (*sympy.polys.polyclasses.DMP method*), 2562
cofactors() (*sympy.polys.polytools.Poly method*), 2385
coherent_state() (*in module sympy.physics.qho_1d*), 1540
Coin() (*in module sympy.stats*), 2877
col() (*sympy.matrices.common.MatrixCommon*

method), 1329
col_del() (sympy.matrices.common.MatrixCommon method), 1329
col_insert() (sympy.matrices.common.MatrixCommon method), 1329
col_join() (sympy.matrices.common.MatrixCommon method), 1329
collect() (in module sympy.simplify.radsimp), 672
collect() (sympy.core.expr.Expr method), 961
collect_const() (in module sympy.simplify.radsimp), 676
collect_sqrt() (in module sympy.simplify.radsimp), 675
column() (sympy.polys.numberfields.modules.ModuleElement method), 2730
columnspace() (sympy.matrices.matrices.MatrixSubspaces method), 1235
columnspace() (sympy.polys.matrices.domainmatrix.DomainMatrix method), 2673
comb_explicit_rhs (sympy.physics.mechanics.system.SymbolicSystem property), 1786
comb_implicit_mat (sympy.physics.mechanics.system.SymbolicSystem property), 1787
comb_implicit_rhs (sympy.physics.mechanics.system.SymbolicSystem property), 1787
combsimp() (in module sympy.simplify.combsimp), 683
combsimp() (sympy.core.expr.Expr method), 961
comm_i2symbol() (sympy.tensor.tensor._TensorManager method), 1422
comm_symbols2i() (sympy.tensor.tensor._TensorManager method), 1422
CommaOperator (class in sympy.codegen.cnodes), 1148
Comment (class in sympy.codegen.ast), 1129
common_prefix() (in module sympy.utilities.iterables), 2072
common_suffix() (in module sympy.utilities.iterables), 2072
communication_classes() (sympy.stats.DiscreteMarkovChain method), 2948
commutative, **924**
commutative_diagrams (sympy.categories.Category property), 2748
CommutativePredicate (class in sympy.assumptions.predicates.common), 202
Commutator (class in sympy.diffgeom), 2809
Commutator (class in sympy.physics.quantum.commutator), 1795
Commutator (class in sympy.physics.secondquant), 1546
commutator() (sympy.combinatorics.perm_groups.PermutationGroup method), 300
commutator() (sympy.combinatorics.permutations.Permutation method), 265
commutes_with() (sympy.combinatorics.permutations.Permutation method), 266
commutes_with() (sympy.tensor.tensor.TensorHead method), 1413
compare() (sympy.matrices.common.MatrixCommon class method), 1330
CompanionMatrix (class in sympy.matrices.expressions), 1379
compare() (in module sympy.series.gruntz), 623
compare() (sympy.core.basic.Basic method), 931
Complement (class in sympy.sets.sets), 1200
complement() (sympy.sets.sets.Set method), 1186
complex, **924**
ComplexElement (class in sympy.polys.domains.mpelements), 2546
ComplexElementsPredicate (class in sympy.assumptions.predicates.matrices), 213
Complexes (class in sympy.sets.fancysets), 1206
ComplexField (class in sympy.polys.domains), 2546
ComplexInfinity (class in sympy.core.numbers), 999
ComplexPredicate (class in sympy.assumptions.predicates.sets), 229
ComplexRegion (class in sympy.sets.fancysets), 1209
ComplexRootOf (class in sympy.polys.rootoftools), 2431
ComplexSpace (class in sympy.physics.quantum.hilbert), 1802
ComplexType (class in sympy.codegen.ast), 1129
components (sympy.categories.CompositeMorphism property), 2745
components (sympy.vector.dyadic.Dyadic

property), 1458
components (sympy.vector.vector.Vector property), 1455
components() (in module sympy.integrals.heurisch), 598
compose() (in module sympy.polys.polytools), 2370
compose() (sympy.categories.Morphism method), 2743
compose() (sympy.polys.polyclasses.DMP method), 2562
compose() (sympy.polys.polytools.Poly method), 2385
compose() (sympy.polys.rings.PolyRing method), 2554
compose() (sympy.series.formal.FormalPowerSeries method), 647
composite, **924**
composite() (in module sympy.ntheory.generate), 1485
CompositeDomain (class in sympy.polys.domains.compositedomain), 2522
CompositeMorphism (class in sympy.categories), 2744
compositepi() (in module sympy.ntheory.generate), 1486
CompositePredicate (class in sympy.assumptions.predicates.ntheory), 218
composition() (sympy.holonomic.holonomic.HolonomicFunction method), 2318
composition_series() (sympy.combinatorics.perm_groups.PermutationGroup method), 300
CompoundDistribution (class in sympy.stats.compound_rv), 2959
ComputationFailed (class in sympy.polys.polyerrors), 2644
compute_explicit_form() (sympy.physics.mechanics.system.SymbolicSystem method), 1787
compute_fps() (in module sympy.series.formal), 652
compute_leading_term() (sympy.core.expr.Expr method), 961
compute_m_ybar() (in module sympy.solvers.ode.riccati), 805
conclusions (sympy.categories.Diagram property), 2750
cond (sympy.functions.elementary.piecewise.ExprCondPair property), 415
condition_number() (sympy.matrices.matrices.MatrixBase method), 1293
ConditionalDomain (class in sympy.stats.rv), 2981
ConditionSet (class in sympy.sets.conditionset), 1215
conjugacy_class() (sympy.combinatorics.perm_groups.PermutationGro method), 301
conjugacy_classes() (sympy.combinatorics.perm_groups.PermutationGro method), 302
conjugate (class in sympy.functions.elementary.complexes), 386
conjugate (sympy.combinatorics.partitions.IntegerPartition property), 254
conjugate() (sympy.core.expr.Expr method), 961
conjugate() (sympy.matrices.common.MatrixCommon method), 1330
conjugate_gauss_beams() (in module sympy.physics.optics.gaussopt), 1866
connected_components() (in module sympy.utilities.iterables), 2072
connected_components() (sympy.matrices.matrices.MatrixBase method), 1293
connected_components_decomposition() (sympy.matrices.matrices.MatrixBase method), 1294
conserve_mpmath_dps() (in module sympy.utilities.decorator), 2058
const() (sympy.polys.rings.PolyElement method), 2555
constant_renumber() (in module sympy.solvers.ode.ode), 768
constant_symbols() (sympy.physics.mechanics.system.SymbolicSystem method), 1787
constantsimp() (in module sympy.solvers.ode), 765
construct_c() (in module sympy.solvers.ode.riccati), 803
construct_d() (in module sympy.solvers.ode.riccati), 803
construct_domain() (in module sympy.polys.constructor), 2427
Contains (class in sympy.sets.conditionset), 1216
contains() (sympy.combinatorics.perm_groups.PermutationGroup method), 302
contains() (sympy.geometry.line.Line

method), 2228
contains() (sympy.geometry.line.LinearEntity method), 2219
contains() (sympy.geometry.line.Ray method), 2231
contains() (sympy.geometry.line.Segment method), 2234
contains() (sympy.polys.agca.ideals.Ideal method), 2462
contains() (sympy.polys.agca.modules.Module method), 2453
contains() (sympy.polys.polytools.GroebnerBasis method), 2423
contains() (sympy.series.order.Order method), 629
contains() (sympy.sets.sets.Set method), 1186
content() (in module sympy.polys.polytools), 2369
content() (sympy.polys.polyclasses.DMP method), 2562
content() (sympy.polys.polytools.Poly method), 2386
content() (sympy.polys.rings.PolyElement method), 2556
continued_fraction() (in module sympy.ntheory.continued_fraction), 1523
continued_fraction_convergents() (in module sympy.ntheory.continued_fraction), 1523
continued_fraction_iterator() (in module sympy.ntheory.continued_fraction), 1524
continued_fraction_periodic() (in module sympy.ntheory.continued_fraction), 1525
continued_fraction_reduce() (in module sympy.ntheory.continued_fraction), 1526
ContinueToken (class in sympy.codegen.ast), 1130
continuous_domain() (in module sympy.calculus.util), 244
ContinuousDomain (class in sympy.stats.crv), 2981
ContinuousMarkovChain (class in sympy.stats), 2951
ContinuousPSpace (class in sympy.stats.crv), 2981
ContinuousRV() (in module sympy.stats), 2934
contract_metric() (sympy.tensor.tensor.TensAdd method), 1416
contract_metric() (sympy.tensor.tensor.TensMul method), 1417
contraction() (in module sympy.physics.secondquant), 1562
control_line() (sympy.physics.quantum.circuitplot.Circuit method), 1840
control_point() (sympy.physics.quantum.circuitplot.Circu method), 1841
controls (sympy.physics.quantum.gate.CGate property), 1842
controls (sympy.physics.quantum.gate.CNotGate property), 1843
convergence_statement (sympy.functions.special.hyper.hyper property), 522
convert() (sympy.polys.agca.modules.FreeModule method), 2454
convert() (sympy.polys.agca.modules.Module method), 2453
convert() (sympy.polys.agca.modules.QuotientModule method), 2465
convert() (sympy.polys.agca.modules.SubModule method), 2456
convert() (sympy.polys.domains.domain.Domain method), 2508
convert() (sympy.polys.polyclasses.DMP method), 2562
convert_from() (sympy.polys.domains.domain.Domain method), 2508
convert_to() (in module sympy.physics.units.util), 1588
convert_to() (sympy.physics.units.quantities.Quantity method), 1587
convert_to() (sympy.polys.matrices.domainmatrix.Domain method), 2673
convert_to() (sympy.polys.matrices.sdm.SDM method), 2693
convert_to_c() (sympy.parsing.sym_expr.SymPyExpressio method), 2131
convert_to_expr() (sympy.parsing.sym_expr.SymPyExpression method), 2132
convert_to_fortran() (sympy.parsing.sym_expr.SymPyExpression method), 2133
convert_to_native_paths() (in module sympy.testing.runtests), 2031
convert_to_python() (sympy.parsing.sym_expr.SymPyExpression method), 2133
convert_xor() (in module

sympy.parsing.sympy_parser), 2128
convex_hull() (*in module sympy.geometry.util*), 2198
convolution() (*in module sympy.discrete.convolutions*), 1089
convolution_fft() (*in module sympy.discrete.convolutions*), 1091
convolution_fwht() (*in module sympy.discrete.convolutions*), 1092
convolution_ntt() (*in module sympy.discrete.convolutions*), 1091
convolution_subset() (*in module sympy.discrete.convolutions*), 1093
coord_function() (*sympy.diffgeom.CoordSystem method*), 2803
coord_functions() (*sympy.diffgeom.CoordSystem method*), 2803
coord_tuple_transform_to() (*sympy.diffgeom.CoordSystem method*), 2803
coordinates (*sympy.geometry.point.Point2D property*), 2209
coordinates (*sympy.geometry.point.Point3D property*), 2212
coordinates (*sympy.physics.mechanics.joint.Joint property*), 1772
coordinates (*sympy.physics.mechanics.system.SymbolicSystem property*), 1787
CoordinateSym (*class in sympy.physics.vector.frame*), 1628
CoordinateSymbol (*class in sympy.diffgeom*), 2805
coords() (*sympy.diffgeom.Point method*), 2807
CoordSys3D (*class in sympy.vector.coordsysrect*), 1447
CoordSystem (*class in sympy.diffgeom*), 2801
copy() (*sympy.matrices.matrices.MatrixBase method*), 1295
copy() (*sympy.polys.matrices.sdm.SDM method*), 2693
copy() (*sympy.polys.rings.PolyElement method*), 2556
copy() (*sympy.series.gruntz.SubsSet method*), 625
core() (*in module sympy.ntheory.factor_*), 1504
cornacchia() (*in module sympy.solvers.diophantine.diophantine*), 725
corners (*sympy.combinatorics.polyhedron.Polyhedron property*), 333
correlation() (*in module sympy.stats*), 2975
cos (*class in sympy.functions.elementary.trigonometric*), 390
coset_factor() (*sympy.combinatorics.perm_groups.Permu method*), 303
coset_rank() (*sympy.combinatorics.perm_groups.Permutat method*), 304
coset_table() (*sympy.combinatorics.perm_groups.Permuta method*), 305
coset_transversal() (*sympy.combinatorics.perm_groups.PermutationGro method*), 305
coset_unrank() (*sympy.combinatorics.perm_groups.Permu method*), 305
cosh (*class in sympy.functions.elementary.hyperbolic*), 403
cosine_transform() (*in module sympy.integrals.transforms*), 583
CosineTransform (*class in sympy.integrals.transforms*), 583
coskewness() (*in module sympy.stats*), 2968
cot (*class in sympy.functions.elementary.trigonometric*), 392
coth (*class in sympy.functions.elementary.hyperbolic*), 404
could_extract_minus_sign() (*sympy.core.expr.Expr method*), 961
count() (*sympy.core.basic.Basic method*), 932
count_complex_roots() (*sympy.polys.polyclasses.DMP method*), 2562
count_digits() (*in module sympy.ntheory.digits*), 1526
count_ops() (*in module sympy.core.function*), 1059
count_ops() (*sympy.core.basic.Basic method*), 932
count_ops() (*sympy.core.expr.Expr method*), 961
count_partitions() (*sympy.utilities.enumerative.MultisetPartitionTrave method*), 2063
count_real_roots() (*sympy.polys.polyclasses.DMP method*), 2562
count_roots() (*in module sympy.polys.polytools*), 2374
count_roots() (*sympy.polys.polytools.Poly method*), 2386
couple() (*in module sympy.physics.quantum.spin*), 1829
CovarDerivativeOp (*class in sympy.diffgeom*), 2814

Covariance (*class in sympy.stats*), 2967
covariance() (*in module sympy.stats*), 2967
covering_product() (*in module sympy.discrete.convolutions*), 1093
coxeter_diagram() (*sympy.liealgebras.weyl_group.WeylGroup method*), 2338
create_expand_pow_optimization() (*in module sympy.codegen.rewriting*), 1120
create_new() (*sympy.vector.coordsysrect.CoordSys3D method*), 1448
CreateBoson (*class in sympy.physics.secondquant*), 1547
CreateCGate() (*in module sympy.physics.quantum.circuitplot*), 1841
CreateFermion (*class in sympy.physics.secondquant*), 1548
critical_angle() (*in module sympy.physics.optics.utils*), 1881
cross() (*in module sympy.physics.vector.functions*), 1667
cross() (*sympy.matrices.matrices.MatrixBase method*), 1295
cross() (*sympy.physics.vector.dyadic.Dyadic method*), 1648
cross() (*sympy.physics.vector.vector.Vector method*), 1642
cross() (*sympy.vector.deloperator.Del method*), 1460
cross() (*sympy.vector.dyadic.Dyadic method*), 1458
cross() (*sympy.vector.vector.Vector method*), 1455
cross_section (*sympy.physics.continuum_mechanics.beam.Beam property*), 1954
CrossCovarianceMatrix (*class in sympy.stats*), 2980
crt() (*in module sympy.ntheory.modular*), 1509
crt1() (*in module sympy.ntheory.modular*), 1510
crt2() (*in module sympy.ntheory.modular*), 1510
csc (*class in sympy.functions.elementary.trigonometric*), 393
csch (*class in sympy.functions.elementary.hyperbolic*), 404
cse() (*in module sympy.simplify.cse_main*), 685
cse() (*sympy.codegen.ast.CodeBlock method*), 1128
CubicThue (*class in sympy.solvers.diophantine.diophantine*), 750
curl() (*in module sympy.physics.vector.fieldfunctions*), 1670
curl() (*in module sympy.vector*), 1471
current (*sympy.combinatorics.graycode.GrayCode property*), 348
Curve (*class in sympy.geometry.curve*), 2247
CurvedMirror (*class in sympy.physics.optics.gaussopt*), 1860
CurvedRefraction (*class in sympy.physics.optics.gaussopt*), 1860
cut_section() (*sympy.geometry.polygon.Polygon method*), 2277
CXX11CodePrinter (*class in sympy.printing.cxx*), 2144
CXX98CodePrinter (*class in sympy.printing.cxx*), 2144
cxxcode() (*in module sympy.printing.codeprinter*), 2144
Cycle (*class in sympy.combinatorics.permutations*), 284
cycle_length() (*in module sympy.ntheory.generate*), 1484
cycle_list() (*in module sympy.crypto.crypto*), 2763
cycle_structure (*sympy.combinatorics.permutations.Perm property*), 266
cycles (*sympy.combinatorics.permutations.Permutation property*), 267
cyclic() (*sympy.combinatorics.generators method*), 287
cyclic_form (*sympy.combinatorics.permutations.Permutati property*), 267
cyclic_form (*sympy.combinatorics.polyhedron.Polyhedron property*), 333
CyclicGroup() (*in module sympy.combinatorics.named_groups*), 352
cyclotomic_field() (*sympy.polys.domains.domain.Domain method*), 2508
cyclotomic_poly() (*in module sympy.polys.specialpolys*), 2438
CythonCodeWrapper (*class in sympy.utilities.autowrap*), 2040

D

D (*sympy.matrices.matrices.MatrixBase property*), 1280

D (*sympy.physics.optics.gaussopt.RayTransferMatrix property*), 1865
D() (*sympy.physics.quantum.spin.Rotation class method*), 1826
d() (*sympy.physics.quantum.spin.Rotation class method*), 1827
Dagger (*class in sympy.physics.quantum.dagger*), 1797
Dagger (*class in sympy.physics.secondquant*), 1550
Dagum() (*in module sympy.stats*), 2896
DataType (*class in sympy.utilities.codegen*), 2049
dc_gain() (*sympy.physics.control.lti.TransferFunction method*), 1894
dcm() (*sympy.physics.mechanics.body.Body method*), 1761
dcm() (*sympy.physics.vector.frame.ReferenceFrame method*), 1630
DDM (*class in sympy.polys.matrices.ddm*), 2690
debug() (*in module sympy.utilities.misc*), 2111
debug_decorator() (*in module sympy.utilities.misc*), 2111
decimal_dig (*sympy.codegen.ast.FloatType property*), 1132
decipher_affine() (*in module sympy.crypto.crypto*), 2767
decipher_atbash() (*in module sympy.crypto.crypto*), 2768
decipher_bifid() (*in module sympy.crypto.crypto*), 2775
decipher_bifid5() (*in module sympy.crypto.crypto*), 2778
decipher_bifid6() (*in module sympy.crypto.crypto*), 2779
decipher_elgamal() (*in module sympy.crypto.crypto*), 2794
decipher_gm() (*in module sympy.crypto.crypto*), 2798
decipher_hill() (*in module sympy.crypto.crypto*), 2773
decipher_kid_rsa() (*in module sympy.crypto.crypto*), 2788
decipher_railfence() (*in module sympy.crypto.crypto*), 2799
decipher_rot13() (*in module sympy.crypto.crypto*), 2766
decipher_rsa() (*in module sympy.crypto.crypto*), 2785
decipher_shift() (*in module sympy.crypto.crypto*), 2765
decipher_vigenere() (*in module sympy.crypto.crypto*), 2772
Declaration (*class in sympy.codegen.ast*), 1130
decode_morse() (*in module sympy.crypto.crypto*), 2789
decompose() (*in module sympy.polys.polytools*), 2370
decompose() (*sympy.physics.quantum.gate.CGate method*), 1842
decompose() (*sympy.physics.quantum.gate.SwapGate method*), 1845
decompose() (*sympy.physics.quantum.qft.IQFT method*), 1850
decompose() (*sympy.physics.quantum.qft.QFT method*), 1850
decompose() (*sympy.polys.polyclasses.DMP method*), 2562
decompose() (*sympy.polys.polytools.Poly method*), 2386
decompose() (*sympy.stats.DiscreteMarkovChain method*), 2949
deduced() (*sympy.codegen.ast.Variable class method*), 1141
default_sort_key() (*in module sympy.core.sorting*), 1074
deflate() (*sympy.polys.polyclasses.DMP method*), 2562
deflate() (*sympy.polys.polytools.Poly method*), 2386
deflection() (*sympy.physics.continuum_mechanics.beam.I method*), 1954
deflection() (*sympy.physics.continuum_mechanics.beam.I method*), 1984
degree (*sympy.combinatorics.perm_groups.PermutationGro property*), 305
degree() (*in module sympy.polys.polytools*), 2361
degree() (*sympy.polys.polyclasses.DMP method*), 2562
degree() (*sympy.polys.polytools.Poly method*), 2387
degree() (*sympy.polys.rings.PolyElement method*), 2556
degree_list() (*in module sympy.polys.polytools*), 2361
degree_list() (*sympy.polys.polyclasses.DMP method*), 2562
degree_list() (*sympy.polys.polytools.Poly method*), 2387
degrees() (*sympy.polys.rings.PolyElement method*), 2556
Del (*class in sympy.vector.deloperator*), 1460
delete_doubles() (*sympy.liealgebras.weyl_group.WeylGrou method*), 2339

delta (*sympy.functions.special.hyper.meijerg property*), 525
deltaintegrate() (*in module sympy.integrals.deltafunctions*), 590
den (*sympy.physics.control.lti.TransferFunction property*), 1895
denom() (*sympy.polys.domains.AlgebraicField method*), 2543
denom() (*sympy.polys.domains.domain.Domain method*), 2509
denom() (*sympy.polys.domains.ExpressionDomain method*), 2549
denom() (*sympy.polys.domains.FractionField method*), 2548
denom() (*sympy.polys.domains.gaussiandomains.GaussianRationalField method*), 2538
denom() (*sympy.polys.domains.GMPYRationalField method*), 2532
denom() (*sympy.polys.domains.RationalField method*), 2530
denom() (*sympy.polys.domains.ring.Ring method*), 2521
denom() (*sympy.polys.polyclasses.DMF method*), 2568
DenseMatrix (*class in sympy.matrices.dense*), 1361
density() (*in module sympy.stats*), 2963
deprecated() (*in module sympy.utilities.decorator*), 2057
depth() (*sympy.polys.agca.ideals.Ideal method*), 2462
Derivative (*class in sympy.core.function*), 1042
derive_by_array() (*in module sympy.tensor.array*), 1392
derived_series() (*sympy.combinatorics.perm_groups.PermutationGroup method*), 306
derived_subgroup() (*sympy.combinatorics.perm_groups.PermutationGroup method*), 306
descent() (*in module sympy.solvers.diophantine.diophantine*), 730
descents() (*sympy.combinatorics.permutations.Permutation method*), 267
det() (*sympy.matrices.matrices.MatrixDeterminant method*), 1230
det() (*sympy.polys.matrices.ddm.DDM method*), 2690
det() (*sympy.polys.matrices.domainmatrix.DomainMatrix method*), 2674
det() (*sympy.polys.matrices.sdm.SDM method*), 2693
deviation() (*in module sympy.physics.optics.utils*), 1881
dh_private_key() (*in module sympy.crypto.crypto*), 2795
dh_public_key() (*in module sympy.crypto.crypto*), 2795
dh_shared_key() (*in module sympy.crypto.crypto*), 2796
diag() (*in module sympy.matrices.dense*), 1319
diag() (*sympy.matrices.common.MatrixCommon class method*), 1331
diag() (*sympy.polys.matrices.domainmatrix.DomainMatrix class method*), 2674
diagonal() (*sympy.matrices.common.MatrixCommon method*), 1332
diagonal_solve() (*sympy.matrices.matrices.MatrixBase method*), 1295
diagonalize() (*sympy.matrices.matrices.MatrixEigen method*), 1238
DiagonalPredicate (*class in sympy.assumptions.predicates.matrices*), 209
Diagram (*class in sympy.categories*), 2749
DiagramGrid (*class in sympy.categories.diagram_drawing*), 2752
Dict (*class in sympy.core.containers*), 1070
dict_merge() (*in module sympy.utilities.iterables*), 2074
Die() (*in module sympy.stats*), 2875
DiePSpace (*class in sympy.stats.frv_types*), 2981
diff() (*in module sympy.core.function*), 1048
diff() (*sympy.holonomic.holonomic.HolonomicFunction method*), 2318
diff() (*sympy.matrices.matrices.MatrixCalculus method*), 1279
diff() (*sympy.physics.vector.vector.Vector method*), 1643
diff() (*sympy.polys.fields.FracElement method*), 2561
diff() (*sympy.polys.polyclasses.DMP method*), 2562
diff() (*sympy.polys.polytools.Poly method*), 2387
diff() (*sympy.polys.rings.PolyElement method*), 2556
difference_delta() (*in module sympy.series.limitseq*), 659
Differential (*class in sympy.diffgeom*), 2810
DifferentialOperator (*class in sympy.holonomic.holonomic*), 2315

DifferentialOperator (*class in sympy.physics.quantum.operator*), 1807
DifferentialOperatorAlgebra (*class in sympy.holonomic.holonomic*), 2316
DifferentialOperators() (*in module sympy.holonomic.holonomic*), 2316
differentiate_finite() (*in module sympy.calculus.finite_diff*), 241
dig (*sympy.codegen.ast.FloatType property*), 1132
digamma (*class in sympy.functions.special.gamma_functions*), 464
digit_2txt (*in module sympy.printing.pretty.pretty_symbology*), 2185
digits() (*in module sympy.ntheory.digits*), 1527
digits() (*in module sympy.ntheory.factor_*), 1505
dihedral() (*sympy.combinatorics.generators method*), 287
DihedralGroup() (*in module sympy.combinatorics.named_groups*), 353
dim (*sympy.physics.units.dimensions.DimensionSystem property*), 1585
dim (*sympy.physics.units.unitsystem.UnitSystem property*), 1587
dim_can_vector() (*sympy.physics.units.dimensions.DimensionSystem method*), 1585
dim_handling() (*in module sympy.printing.aesaracode*), 2169
dim_vector() (*sympy.physics.units.dimensions.DimensionSystem method*), 1585
Dimension (*class in sympy.physics.units.dimensions*), 1584
dimension (*sympy.physics.quantum.hilbert.HilbertSpace property*), 1804
dimension() (*in module sympy.codegen.fnodes*), 1154
dimension() (*sympy.liealgebras.type_a.TypeA method*), 2329
dimension() (*sympy.liealgebras.type_b.TypeB method*), 2330
dimension() (*sympy.liealgebras.type_c.TypeC method*), 2332
dimension() (*sympy.liealgebras.type_d.TypeD method*), 2333
dimension() (*sympy.liealgebras.type_e.TypeE method*), 2335
dimension() (*sympy.liealgebras.type_f.TypeF method*), 2336
dimension() (*sympy.liealgebras.type_g.TypeG method*), 2337
DimensionSystem (*class in sympy.physics.units.dimensions*), 1584
diop_bf_DN() (*in module sympy.solvers.diophantine.diophantine*), 726
diop_DN() (*in module sympy.solvers.diophantine.diophantine*), 724
diop_general_pythagorean() (*in module sympy.solvers.diophantine.diophantine*), 731
diop_general_sum_of_even_powers() (*in module sympy.solvers.diophantine.diophantine*), 732
diop_general_sum_of_squares() (*in module sympy.solvers.diophantine.diophantine*), 731
diop_linear() (*in module sympy.solvers.diophantine.diophantine*), 722
diop_quadratic() (*in module sympy.solvers.diophantine.diophantine*), 723
diop_solve() (*in module sympy.solvers.diophantine.diophantine*), 721
diop_ternary_quadratic() (*in module sympy.solvers.diophantine.diophantine*), 729
diop_ternary_quadratic_normal() (*in module sympy.solvers.diophantine.diophantine*), 741
diophantine() (*in module sympy.solvers.diophantine.diophantine*), 720
DiophantineEquationType (*class in sympy.solvers.diophantine.diophantine*), 745
DiophantineSolutionSet (*class in sympy.solvers.diophantine.diophantine*), 744
DiracDelta (*class in sympy.functions.special.delta_functions*), 450
direct_product() (*sympy.tensor.tensor.TensorSymmetry class method*), 1421
direction (*sympy.geometry.line.LinearEntity property*), 2219

direction_cosine (*sympy.geometry.line.LinearEntity3D property*), 2243
direction_cosine() (*sympy.geometry.point.Point3D method*), 2213
direction_ratio (*sympy.geometry.line.LinearEntity3D property*), 2243
direction_ratio() (*sympy.geometry.point.Point3D method*), 2213
director_circle() (*sympy.geometry.ellipse.Ellipse method*), 2256
DirectProduct() (*in module sympy.combinatorics.group_constructs*), 363
DirectSumHilbertSpace (*class in sympy.physics.quantum.hilbert*), 1803
dirichlet_eta (*class in sympy.functions.special.zeta_functions*), 516
discard_before() (*sympy.polys.numberfields.modules.Submodule method*), 2727
discrete_log() (*in module sympy.ntheory.residue_ntheory*), 1522
DiscreteMarkovChain (*class in sympy.stats*), 2944
DiscreteUniform() (*in module sympy.stats*), 2875
discriminant() (*in module sympy.polys.polytools*), 2366
discriminant() (*sympy.polys.domains.AlgebraicField method*), 2543
discriminant() (*sympy.polys.polyclasses.DMP method*), 2562
discriminant() (*sympy.polys.polytools.Poly method*), 2388
DisjointUnion (*class in sympy.sets.sets*), 1201
dispersion() (*in module sympy.polys.dispersion*), 2448
dispersion() (*sympy.polys.polytools.Poly method*), 2388
dispersionset() (*in module sympy.polys.dispersion*), 2446
dispersionset() (*sympy.polys.polytools.Poly method*), 2389
distance() (*sympy.geometry.line.Line method*), 2229
distance() (*sympy.geometry.line.Ray method*), 2231
distance() (*sympy.geometry.line.Segment method*), 2234
distance() (*sympy.geometry.plane.Plane method*), 2305
distance() (*sympy.geometry.point.Point method*), 2204
distance() (*sympy.geometry.polygon.Polygon method*), 2278
distribute_and_over_or() (*in module sympy.logic.boolalg*), 1178
distribute_or_over_and() (*in module sympy.logic.boolalg*), 1178
distribute_xor_over_and() (*in module sympy.logic.boolalg*), 1178
div() (*in module sympy.polys.polytools*), 2363
div() (*sympy.polys.domains.domain.Domain method*), 2509
div() (*sympy.polys.domains.field.Field method*), 2520
div() (*sympy.polys.domains.GMPYRationalField method*), 2532
div() (*sympy.polys.domains.RationalField method*), 2530
div() (*sympy.polys.domains.ring.Ring method*), 2521
div() (*sympy.polys.polyclasses.DMP method*), 2563
div() (*sympy.polys.polytools.Poly method*), 2390
div() (*sympy.polys.rings.PolyElement method*), 2556
divergence (*sympy.physics.optics.gaussopt.BeamParameter property*), 1858
divergence() (*in module sympy.physics.vector.fieldfunctions*), 1671
divergence() (*in module sympy.vector*), 1472
divisible() (*in module sympy.solvers.diophantine.diophantine*), 738
divisor_count() (*in module sympy.ntheory.factor_*), 1498
divisor_sigma (*class in sympy.ntheory.factor_*), 1502
divisors() (*in module sympy.ntheory.factor_*), 1497
DMF (*class in sympy.polys.polyclasses*), 2567
DMP (*class in sympy.polys.polyclasses*), 2561
dmp_abs() (*in module sympy.polys.densearith*), 2586
dmp_add() (*in module sympy.polys.densearith*), 2586
dmp_add_ground() (*in module*

sympy.polys.densearith), 2584
dmp_add_mul() (*in module sympy.polys.densearith*), 2587
dmp_add_term() (*in module sympy.polys.densearith*), 2583
dmp_apply_pairs() (*in module sympy.polys.densebasic*), 2583
dmp_cancel() (*in module sympy.polys.euclidtools*), 2635
dmp_clear_denoms() (*in module sympy.polys.densetools*), 2601
dmp_compose() (*in module sympy.polys.densetools*), 2600
dmp_content() (*in module sympy.polys.euclidtools*), 2634
dmp_convert() (*in module sympy.polys.densebasic*), 2574
dmp_copy() (*in module sympy.polys.densebasic*), 2573
dmp_deflate() (*in module sympy.polys.densebasic*), 2580
dmp_degree() (*in module sympy.polys.densebasic*), 2571
dmp_degree_in() (*in module sympy.polys.densebasic*), 2572
dmp_degree_list() (*in module sympy.polys.densebasic*), 2572
dmp_diff() (*in module sympy.polys.densetools*), 2593
dmp_diff_eval_in() (*in module sympy.polys.densetools*), 2594
dmp_diff_in() (*in module sympy.polys.densetools*), 2593
dmp_discriminant() (*in module sympy.polys.euclidtools*), 2631
dmp_div() (*in module sympy.polys.densearith*), 2590
dmp_eject() (*in module sympy.polys.densebasic*), 2582
dmp_euclidean_prs() (*in module sympy.polys.euclidtools*), 2626
dmp_eval() (*in module sympy.polys.densetools*), 2593
dmp_eval_in() (*in module sympy.polys.densetools*), 2594
dmp_eval_tail() (*in module sympy.polys.densetools*), 2594
dmp_exclude() (*in module sympy.polys.densebasic*), 2581
dmp_expand() (*in module sympy.polys.densearith*), 2592
dmp_exquo() (*in module sympy.polys.densearith*), 2591
dmp_exquo_ground() (*in module sympy.polys.densearith*), 2585
dmp_ext_factor() (*in module sympy.polys.factortools*), 2639
dmp_factor_list() (*in module sympy.polys.factortools*), 2639
dmp_factor_list_include() (*in module sympy.polys.factortools*), 2639
dmp_ff_div() (*in module sympy.polys.densearith*), 2590
dmp_ff_prs_gcd() (*in module sympy.polys.euclidtools*), 2632
dmp_from_dict() (*in module sympy.polys.densebasic*), 2578
dmp_from_sympy() (*in module sympy.polys.densebasic*), 2574
dmp_gcd() (*in module sympy.polys.euclidtools*), 2633
dmp_gcdex() (*in module sympy.polys.euclidtools*), 2626
dmp_ground() (*in module sympy.polys.densebasic*), 2577
dmp_ground_content() (*in module sympy.polys.densetools*), 2597
dmp_ground_extract() (*in module sympy.polys.densetools*), 2598
dmp_ground_LC() (*in module sympy.polys.densebasic*), 2570
dmp_ground_monic() (*in module sympy.polys.densetools*), 2596
dmp_ground_nth() (*in module sympy.polys.densebasic*), 2575
dmp_ground_p() (*in module sympy.polys.densebasic*), 2576
dmp_ground_primitive() (*in module sympy.polys.densetools*), 2597
dmp_ground_TC() (*in module sympy.polys.densebasic*), 2571
dmp_ground_trunc() (*in module sympy.polys.densetools*), 2595
dmp_grounds() (*in module sympy.polys.densebasic*), 2577
dmp_half_gcdex() (*in module sympy.polys.euclidtools*), 2625
dmp_include() (*in module sympy.polys.densebasic*), 2581
dmp_inflate() (*in module sympy.polys.densebasic*), 2581
dmp_inject() (*in module sympy.polys.densebasic*), 2581
dmp_inner_gcd() (*in module sympy.polys.euclidtools*), 2633
dmp_inner_subresultants() (*in module sympy.polys.euclidtools*), 2628
dmp_integrate() (*in module*

sympy.polys.densetools), 2592
dmp_integrate_in() (*in module sympy.polys.densetools*), 2592
dmp_invert() (*in module sympy.polys.euclidtools*), 2626
dmp_irreducible_p() (*in module sympy.polys.factortools*), 2639
dmp_l1_norm() (*in module sympy.polys.densearith*), 2592
dmp_LC() (*in module sympy.polys.densebasic*), 2570
dmp_lcm() (*in module sympy.polys.euclidtools*), 2634
dmp_lift() (*in module sympy.polys.densetools*), 2601
dmp_list_terms() (*in module sympy.polys.densebasic*), 2582
dmp_max_norm() (*in module sympy.polys.densearith*), 2591
dmp_mul() (*in module sympy.polys.densearith*), 2587
dmp_mul_ground() (*in module sympy.polys.densearith*), 2585
dmp_mul_term() (*in module sympy.polys.densearith*), 2584
dmp_multi_deflate() (*in module sympy.polys.densebasic*), 2580
dmp_neg() (*in module sympy.polys.densearith*), 2586
dmp_negative_p() (*in module sympy.polys.densebasic*), 2577
dmp_nest() (*in module sympy.polys.densebasic*), 2579
dmp_normal() (*in module sympy.polys.densebasic*), 2574
dmp_nth() (*in module sympy.polys.densebasic*), 2575
dmp_one() (*in module sympy.polys.densebasic*), 2576
dmp_one_p() (*in module sympy.polys.densebasic*), 2576
dmp_pdiv() (*in module sympy.polys.densearith*), 2588
dmp_permute() (*in module sympy.polys.densebasic*), 2579
dmp_pexquo() (*in module sympy.polys.densearith*), 2589
dmp_positive_p() (*in module sympy.polys.densebasic*), 2578
dmp_pow() (*in module sympy.polys.densearith*), 2588
dmp_pquo() (*in module sympy.polys.densearith*), 2589
dmp_prem() (*in module sympy.polys.densearith*), 2588
dmp_primitive() (*in module sympy.polys.euclidtools*), 2634
dmp_primitive_prs() (*in module sympy.polys.euclidtools*), 2627
dmp_prs_resultant() (*in module sympy.polys.euclidtools*), 2629
dmp_qq_collins_resultant() (*in module sympy.polys.euclidtools*), 2630
dmp_qq_heu_gcd() (*in module sympy.polys.euclidtools*), 2633
dmp_quo() (*in module sympy.polys.densearith*), 2591
dmp_quo_ground() (*in module sympy.polys.densearith*), 2585
dmp_raise() (*in module sympy.polys.densebasic*), 2580
dmp_rem() (*in module sympy.polys.densearith*), 2590
dmp_resultant() (*in module sympy.polys.euclidtools*), 2631
dmp_revert() (*in module sympy.polys.densetools*), 2601
dmp_rr_div() (*in module sympy.polys.densearith*), 2589
dmp_rr_prs_gcd() (*in module sympy.polys.euclidtools*), 2631
dmp_slice() (*in module sympy.polys.densebasic*), 2583
dmp_sqr() (*in module sympy.polys.densearith*), 2588
dmp_strip() (*in module sympy.polys.densebasic*), 2572
dmp_sub() (*in module sympy.polys.densearith*), 2587
dmp_sub_ground() (*in module sympy.polys.densearith*), 2584
dmp_sub_mul() (*in module sympy.polys.densearith*), 2587
dmp_sub_term() (*in module sympy.polys.densearith*), 2584
dmp_subresultants() (*in module sympy.polys.euclidtools*), 2629
dmp_swap() (*in module sympy.polys.densebasic*), 2579
dmp_TC() (*in module sympy.polys.densebasic*), 2570
dmp_terms_gcd() (*in module sympy.polys.densebasic*), 2582
dmp_to_dict() (*in module sympy.polys.densebasic*), 2578
dmp_to_tuple() (*in module sympy.polys.densebasic*), 2574
dmp_trial_division() (*in module*

sympy.polys.factortools), 2635
dmp_true_LT() (*in module sympy.polys.densebasic*), 2571
dmp_trunc() (*in module sympy.polys.densetools*), 2595
dmp_validate() (*in module sympy.polys.densebasic*), 2573
dmp_zero() (*in module sympy.polys.densebasic*), 2576
dmp_zero_p() (*in module sympy.polys.densebasic*), 2575
dmp_zeros() (*in module sympy.polys.densebasic*), 2577
dmp_zz_collins_resultant() (*in module sympy.polys.euclidtools*), 2630
dmp_zz_diophantine() (*in module sympy.polys.factortools*), 2638
dmp_zz_factor() (*in module sympy.polys.factortools*), 2638
dmp_zz_heu_gcd() (*in module sympy.polys.euclidtools*), 2632
dmp_zz_mignotte_bound() (*in module sympy.polys.factortools*), 2635
dmp_zz_modular_resultant() (*in module sympy.polys.euclidtools*), 2630
dmp_zz_wang() (*in module sympy.polys.factortools*), 2638
dmp_zz_wang_hensel_lifting() (*in module sympy.polys.factortools*), 2638
dmp_zz_wang_lead_coeffs() (*in module sympy.polys.factortools*), 2638
dmp_zz_wang_non_divisors() (*in module sympy.polys.factortools*), 2638
dmp_zz_wang_test_points() (*in module sympy.polys.factortools*), 2638
Do (*class in sympy.codegen.fnodes*), 1150
do_subs() (*sympy.series.gruntz.SubsSet method*), 625
doctest() (*in module sympy.testing.runtests*), 2031
doctest_depends_on() (*in module sympy.utilities.decorator*), 2058
doit() (*sympy.core.basic.Basic method*), 932
doit() (*sympy.functions.elementary.piecewise.Piecewise method*), 417
doit() (*sympy.integrals.integrals.Integral method*), 603
doit() (*sympy.integrals.transforms.IntegralTransform method*), 586
doit() (*sympy.physics.control.lti.Feedback method*), 1908
doit() (*sympy.physics.control.lti.MIMOFeedback method*), 1929
doit() (*sympy.physics.control.lti.MIMOParallel method*), 1926
doit() (*sympy.physics.control.lti.MIMOSeries method*), 1924
doit() (*sympy.physics.control.lti.Parallel method*), 1904
doit() (*sympy.physics.control.lti.Series method*), 1901
doit() (*sympy.physics.quantum.anticommutator.AntiComm method*), 1792
doit() (*sympy.physics.quantum.commutator.Commutator method*), 1796
doit() (*sympy.physics.secondquant.Commutator method*), 1547
doit() (*sympy.physics.secondquant.NO method*), 1558
doit() (*sympy.physics.vector.dyadic.Dyadic method*), 1648
doit() (*sympy.physics.vector.vector.Vector method*), 1644
doit() (*sympy.series.limits.Limit method*), 621
doit_numerically() (*sympy.core.function.Derivative method*), 1047
Domain (*class in sympy.polys.domains.domain*), 2504
domain (*sympy.categories.CompositeMorphism property*), 2746
domain (*sympy.categories.Morphism property*), 2743
domain (*sympy.polys.polytools.Poly property*), 2391
domain_check() (*in module sympy.solvers.solveset*), 869
DomainElement (*class in sympy.polys.domains.domainelement*), 2519
DomainError (*class in sympy.polys.polyerrors*), 2644
DomainMatrix (*class in sympy.polys.matrices.domainmatrix*), 2671
dominant() (*in module sympy.series.limitseq*), 660
doprint() (*sympy.printing.aesaracode.AesaraPrinter method*), 2166
doprint() (*sympy.printing.codeprinter.CodePrinter method*), 2183
doprint() (*sympy.printing.mathml.MathMLPrinterBase method*), 2175
doprint() (*sympy.printing.printer.Printer method*), 2139
dot() (*in module sympy.physics.vector.functions*),

1667
dot() (sympy.geometry.point.Point method), 2204
dot() (sympy.matrices.matrices.MatrixBase method), 1296
dot() (sympy.physics.vector.dyadic.Dyadic method), 1648
dot() (sympy.physics.vector.vector.Vector method), 1644
dot() (sympy.vector.deloperator.Del method), 1460
dot() (sympy.vector.dyadic.Dyadic method), 1458
dot() (sympy.vector.vector.Vector method), 1456
dot_rot_grad_Ynm() (in module sympy.physics.wigner), 1568
dotprint() (in module sympy.printing.dot), 2188
double_coset_can_rep() (in module sympy.combinatorics.tensor_can), 366
draw() (sympy.categories.diagram_drawing.XypicDiagramDrawer method), 2760
draw() (sympy.physics.continuum_mechanics.beam.Beam method), 1955
drop() (sympy.polys.domains.compositedomain.CompositeDomain method), 2522
drop() (sympy.polys.domains.domain.Domain method), 2510
drop() (sympy.polys.rings.PolyRing method), 2554
drop_to_ground() (sympy.polys.rings.PolyRing method), 2554
dsign (class in sympy.codegen.fnodes), 1154
dsolve() (in module sympy.solvers.ode), 755
dsolve_system() (in module sympy.solvers.ode.systems), 758
dt() (sympy.physics.vector.dyadic.Dyadic method), 1649
dt() (sympy.physics.vector.vector.Vector method), 1644
dtype (sympy.polys.agca.extensions.MonogenicFiniteExtension attribute), 2476
dtype (sympy.polys.agca.modules.FreeModule attribute), 2454
dtype (sympy.polys.agca.modules.QuotientModule attribute), 2465
dtype (sympy.polys.domains.AlgebraicField attribute), 2543
dtype (sympy.polys.domains.domain.Domain attribute), 2510
dtype (sympy.polys.domains.ExpressionDomain attribute), 2549
dtype (sympy.polys.domains.gaussiandomains.GaussianInte attribute), 2535
dtype (sympy.polys.domains.gaussiandomains.GaussianRati attribute), 2538
dual (sympy.physics.quantum.state.StateBase property), 1834
dual() (sympy.matrices.matrices.MatrixBase method), 1297
dual_class() (sympy.physics.quantum.state.StateBase class method), 1834
Dummy (class in sympy.core.symbol), 978
dummy_eq() (sympy.core.basic.Basic method), 932
DummyWrapper (class in sympy.utilities.autowrap), 2040
dump_c() (sympy.utilities.autowrap.UfuncifyCodeWrapper method), 2040
dump_c() (sympy.utilities.codegen.CCodeGen method), 2047
dump_code() (sympy.utilities.codegen.CodeGen method), 2048
dump_f95() (sympy.utilities.codegen.FCodeGen method), 2049
dump_h() (sympy.utilities.codegen.CCodeGen method), 2048
dump_h() (sympy.utilities.codegen.FCodeGen method), 2050
dump_jl() (sympy.utilities.codegen.JuliaCodeGen method), 2051
dump_m() (sympy.utilities.codegen.OctaveCodeGen method), 2051
dump_pyx() (sympy.utilities.autowrap.CythonCodeWrapper method), 2040
dump_rs() (sympy.utilities.codegen.RustCodeGen method), 2052
dup_content() (in module sympy.polys.densetools), 2596
dup_cyclotomic_p() (in module sympy.polys.factortools), 2636
dup_decompose() (in module sympy.polys.densetools), 2600
dup_extract() (in module sympy.polys.densetools), 2598
dup_gf_factor() (in module sympy.polys.factortools), 2639
dup_lshift() (in module sympy.polys.densearith), 2585
dup_mirror() (in module sympy.polys.densetools), 2599
dup_monic() (in module sympy.polys.densetools), 2595
dup_primitive() (in module sympy.polys.densetools), 2597
dup_random() (in module

sympy.polys.densebasic), 2583
dup_real_imag() (*in module sympy.polys.densetools*), 2598
dup_reverse() (*in module sympy.polys.densebasic*), 2573
dup_rshift() (*in module sympy.polys.densearith*), 2586
dup_scale() (*in module sympy.polys.densetools*), 2599
dup_shift() (*in module sympy.polys.densetools*), 2599
dup_sign_variations() (*in module sympy.polys.densetools*), 2601
dup_transform() (*in module sympy.polys.densetools*), 2599
dup_zz_cyclotomic_factor() (*in module sympy.polys.factortools*), 2637
dup_zz_cyclotomic_poly() (*in module sympy.polys.factortools*), 2637
dup_zz_factor() (*in module sympy.polys.factortools*), 2637
dup_zz_factor_sqf() (*in module sympy.polys.factortools*), 2637
dup_zz_hensel_lift() (*in module sympy.polys.factortools*), 2636
dup_zz_hensel_step() (*in module sympy.polys.factortools*), 2635
dup_zz_irreducible_p() (*in module sympy.polys.factortools*), 2636
dup_zz_zassenhaus() (*in module sympy.polys.factortools*), 2636
Dyadic (*class in sympy.physics.vector.dyadic*), 1648
Dyadic (*class in sympy.vector.dyadic*), 1458
dyn_implicit_mat (*sympy.physics.mechanics.system.SymbolicSystem property*), 1787
dyn_implicit_rhs (*sympy.physics.mechanics.system.SymbolicSystem property*), 1787
dynamic_symbols() (*sympy.physics.mechanics.system.SymbolicSystem method*), 1787
dynamicsymbols() (*in module sympy.physics.vector*), 1666
dynkin_diagram() (*sympy.liealgebras.root_system.RootSystem method*), 2327
DynkinDiagram() (*in module sympy.liealgebras.dynkin_diagram*), 2340

E

E() (*in module sympy.stats*), 2961
E1() (*in module sympy.functions.special.error_functions*), 487
E_n() (*in module sympy.physics.qho_1d*), 1539
E_nl() (*in module sympy.physics.hydrogen*), 1533
E_nl() (*in module sympy.physics.sho*), 1541
E_nl_dirac() (*in module sympy.physics.hydrogen*), 1534
EC() (*sympy.polys.polytools.Poly method*), 2379
eccentricity (*sympy.geometry.ellipse.Ellipse property*), 2257
echelon_form() (*sympy.matrices.matrices.MatrixReduction method*), 1232
ecm() (*in module sympy.ntheory.ecm*), 1531
edges (*sympy.combinatorics.polyhedron.Polyhedron property*), 333
edges() (*sympy.combinatorics.prufer.Prufer static method*), 335
egyptian_fraction() (*in module sympy.ntheory.egyptian_fraction*), 1529
Ei (*class in sympy.functions.special.error_functions*), 483
eigenvals() (*sympy.matrices.matrices.MatrixEigen method*), 1239
eigenvects() (*sympy.matrices.matrices.MatrixEigen method*), 1240
Eijk() (*in module sympy.functions.special.tensor_functions*), 548
eject() (*sympy.polys.polyclasses.DMP method*), 2563
eject() (*sympy.polys.polytools.Poly method*), 2391
elastic_modulus (*sympy.physics.continuum_mechanics.beam_problems.Beam property*), 1956
elem_poles() (*sympy.physics.control.lti.TransferFunction method*), 1919
elem_zeros() (*sympy.physics.control.lti.TransferFunction method*), 1919
Element (*class in sympy.codegen.ast*), 1130
element_from_alg_num() (*sympy.polys.numberfields.modules.PowerBasis method*), 2725
element_from_ANP() (*sympy.polys.numberfields.modules.PowerBasis method*), 2725
element_from_poly() (*sympy.polys.numberfields.modules.PowerBasis method*), 2725
element_from_rational() (*sympy.polys.numberfields.modules.Module method*), 2720
element_order() (*sympy.liealgebras.weyl_group.WeylGroup*

method), 2339
elementary_col_op() (sympy.matrices.matrices.MatrixReductions method), 1233
elementary_row_op() (sympy.matrices.matrices.MatrixReductions method), 1233
elements (sympy.combinatorics.perm_groups.PermutationGroup property), 307
elgamal_private_key() (in module sympy.crypto.crypto), 2793
elgamal_public_key() (in module sympy.crypto.crypto), 2792
eliminate_implications() (in module sympy.logic.boolalg), 1179
Ellipse (class in sympy.geometry.ellipse), 2253
elliptic_e (class in sympy.functions.special.elliptic_integrals), 527
elliptic_f (class in sympy.functions.special.elliptic_integrals), 527
elliptic_k (class in sympy.functions.special.elliptic_integrals), 526
elliptic_pi (class in sympy.functions.special.elliptic_integrals), 528
EM() (sympy.polys.polytools.Poly method), 2379
emptyPrinter() (sympy.printing.repr.ReprPrinter method), 2177
EmptySequence (class in sympy.series.sequences), 636
EmptySet (class in sympy.sets.sets), 1202
enable_automatic_int_sympification() (in module sympy.interactive.session), 2116
enable_automatic_symbols() (in module sympy.interactive.session), 2116
encipher_affine() (in module sympy.crypto.crypto), 2766
encipher_atbash() (in module sympy.crypto.crypto), 2767
encipher_bifid() (in module sympy.crypto.crypto), 2774
encipher_bifid5() (in module sympy.crypto.crypto), 2776
encipher_bifid6() (in module sympy.crypto.crypto), 2778
encipher_elgamal() (in module sympy.crypto.crypto), 2793
encipher_gm() (in module sympy.crypto.crypto), 2798
encipher_hill() (in module sympy.crypto.crypto), 2772
encipher_kid_rsa() (in module sympy.crypto.crypto), 2788
encipher_railfence() (in module sympy.crypto.crypto), 2798
encipher_rot13() (in module sympy.crypto.crypto), 2765
encipher_rsa() (in module sympy.crypto.crypto), 2784
encipher_shift() (in module sympy.crypto.crypto), 2764
encipher_substitution() (in module sympy.crypto.crypto), 2768
encipher_vigenere() (in module sympy.crypto.crypto), 2769
encloses() (sympy.geometry.entity.GeometryEntity method), 2194
encloses_point() (sympy.geometry.ellipse.Ellipse method), 2257
encloses_point() (sympy.geometry.polygon.Polygon method), 2278
encloses_point() (sympy.geometry.polygon.RegularPolygo method), 2288
encode_morse() (in module sympy.crypto.crypto), 2788
end (sympy.sets.sets.Interval property), 1195
endomorphism_ring() (sympy.polys.numberfields.modules.Module method), 2720
EndomorphismRing (class in sympy.polys.numberfields.modules), 2734
entropy() (in module sympy.stats), 2963
enum_all() (sympy.utilities.enumerative.MultisetPartitionT method), 2064
enum_large() (sympy.utilities.enumerative.MultisetPartitio method), 2064
enum_range() (sympy.utilities.enumerative.MultisetPartitio method), 2065
enum_small() (sympy.utilities.enumerative.MultisetPartitio method), 2065
enumerate_states() (in module sympy.physics.quantum.represent), 1815
EPath (class in sympy.simplify.epathtools), 688
epath() (in module sympy.simplify.epathtools), 689
eps (sympy.codegen.ast.FloatType property), 1132
Eq (in module sympy.core.relational), 1022
eq() (sympy.polys.agca.modules.QuotientModuleElement

method), 2467
eqs_to_matrix() (in module sympy.polys.solvers), 2667
Equality (class in sympy.core.relational), 1023
equals() (sympy.combinatorics.perm_groups.PermutationGroup method), 307
equals() (sympy.core.expr.Expr method), 961
equals() (sympy.core.relational.Relational method), 1020
equals() (sympy.geometry.line.Line method), 2229
equals() (sympy.geometry.line.Ray method), 2232
equals() (sympy.geometry.line.Segment method), 2235
equals() (sympy.geometry.plane.Plane method), 2305
equals() (sympy.geometry.point.Point method), 2204
equals() (sympy.logic.boolalg.Boolean method), 1163
equals() (sympy.matrices.expressions.MatrixExpr method), 1371
equation() (sympy.geometry.ellipse.Circle method), 2271
equation() (sympy.geometry.ellipse.Ellipse method), 2257
equation() (sympy.geometry.line.Line2D method), 2239
equation() (sympy.geometry.line.Line3D method), 2244
equation() (sympy.geometry.plane.Plane method), 2306
equiv() (sympy.polys.numberfields.modules.ModuleElement method), 2730
Equivalent (class in sympy.logic.boolalg), 1171
equivalent() (in module sympy.solvers.diophantine.diophantine), 739
erf (class in sympy.functions.special.error_functions), 471
erf2 (class in sympy.functions.special.error_functions), 476
erf2inv (class in sympy.functions.special.error_functions), 479
erfc (class in sympy.functions.special.error_functions), 473
erfcinv (class in sympy.functions.special.error_functions), 478
erfi (class in sympy.functions.special.error_functions), 474
erfinv (class in sympy.functions.special.error_functions), 477
Erlang() (in module sympy.stats), 2897
ET() (sympy.polys.polytools.Poly method), 2379
eta (sympy.functions.special.hyper.hyper property), 522
euler (class in sympy.functions.combinatorial.numbers), 433
euler_equations() (in module sympy.calculus.euler), 233
euler_maclaurin() (sympy.concrete.summations.Sum method), 902
EulerGamma (class in sympy.core.numbers), 1001
eulerline (sympy.geometry.polygon.Triangle property), 2296
eval() (sympy.assumptions.assume.Predicate method), 196
eval() (sympy.functions.elementary.piecewise.Piecewise class method), 417
eval() (sympy.functions.special.delta_functions.DiracDelta class method), 451
eval() (sympy.functions.special.delta_functions.Heaviside class method), 455
eval() (sympy.functions.special.singularity_functions.Singu class method), 458
eval() (sympy.functions.special.tensor_functions.Kronecker class method), 550
eval() (sympy.physics.quantum.hilbert.DirectSumHilbertSp class method), 1803
eval() (sympy.physics.quantum.hilbert.TensorProductHilbe class method), 1806
eval() (sympy.physics.secondquant.Commutator class method), 1547
eval() (sympy.physics.secondquant.Dagger class method), 1550
eval() (sympy.physics.secondquant.KroneckerDelta class method), 1554
eval() (sympy.polys.polyclasses.DMP method), 2563
eval() (sympy.polys.polytools.Poly method), 2391
eval_approx() (sympy.polys.rootoftools.ComplexRootOf method), 2435
eval_controls() (sympy.physics.quantum.gate.CGate method), 1842
eval_expr() (in module sympy.parsing.sympy_parser), 2125
eval_levicivita() (in module sympy.functions.special.tensor_functions),

548
eval_rational() (sympy.polys.rootoftools.ComplexRootOf method), 2436
eval_zeta_function() (sympy.concrete.summations.Sum method), 903
evalf() (sympy.core.evalf.EvalfMixin method), 1065
evalf() (sympy.holonomic.holonomic.HolonomicFunction method), 2320
evalf() (sympy.matrices.common.MatrixCommon method), 1333
evalf() (sympy.polys.domains.domain.Domain method), 2511
EvalfMixin (class in sympy.core.evalf), 1065
evaluate_deltas() (in module sympy.physics.secondquant), 1562
evaluate_pauli_product() (in module sympy.physics.paulialgebra), 1539
EvaluationFailed (class in sympy.polys.polyerrors), 2643
even, 924
EvenPredicate (class in sympy.assumptions.predicates.ntheory), 216
evolute() (sympy.geometry.ellipse.Ellipse method), 2258
ExactQuotientFailed (class in sympy.polys.polyerrors), 2643
excenters (sympy.geometry.polygon.Triangle property), 2296
exclude() (sympy.polys.polyclasses.DMP method), 2563
exclude() (sympy.polys.polytools.Poly method), 2392
Exclusive (class in sympy.logic.boolalg), 1172
ExGaussian() (in module sympy.stats), 2898
exp (class in sympy.functions.elementary.exponential), 411
exp() (sympy.algebras.Quaternion method), 888
exp() (sympy.matrices.matrices.MatrixBase method), 1297
Exp1 (class in sympy.core.numbers), 999
exp2 (class in sympy.codegen.cfunctions), 1144
exp_polar (class in sympy.functions.elementary.exponential), 414
exp_re() (in module sympy.series.formal), 656
expand() (in module sympy.core.function), 1053
expand() (sympy.core.expr.Expr method), 967
expand() (sympy.matrices.common.MatrixCommon method), 1333
expand() (sympy.physics.control.lti.TransferFunction method), 1895
expand() (sympy.physics.control.lti.TransferFunctionMatrix method), 1920
expand_complex() (in module sympy.core.function), 1062
expand_func() (in module sympy.core.function), 1061
expand_log() (in module sympy.core.function), 1061
expand_mul() (in module sympy.core.function), 1061
expand_multinomial() (in module sympy.core.function), 1062
expand_power_base() (in module sympy.core.function), 1063
expand_power_exp() (in module sympy.core.function), 1063
expand_trig() (in module sympy.core.function), 1062
Expectation (class in sympy.stats), 2961
expectation() (sympy.stats.BernoulliProcess method), 2954
ExpectationMatrix (class in sympy.stats), 2978
expint (class in sympy.functions.special.error_functions), 485
expm1 (class in sympy.codegen.cfunctions), 1145
Exponential() (in module sympy.stats), 2900
Expr (class in sympy.core.expr), 947
expr (sympy.core.function.Lambda property), 1040
expr (sympy.core.function.Subs property), 1052
expr (sympy.functions.elementary.piecewise.ExprCondPair property), 415
expr (sympy.physics.quantum.operator.DifferentialOperator property), 1807
expr (sympy.physics.quantum.state.Wavefunction property), 1838
expr_free_symbols (sympy.core.expr.Expr property), 962
expr_to_holonomic() (in module sympy.holonomic.holonomic), 2324
ExprCondPair (class in sympy.functions.elementary.piecewise), 415
express() (in module sympy.physics.vector.functions),

1668
express() (*in module sympy.vector*), 1470
express() (*sympy.physics.vector.dyadic.Dyadic method*), 1649
express() (*sympy.physics.vector.vector.Vector method*), 1644
ExpressionDomain (*class in sympy.polys.domains*), 2549
ExpressionDomain.Expression (*class in sympy.polys.domains*), 2549
ExpressionDomain.Expression (*class in sympy.polys.domains.expressiondomain*), 2551
ExprWithIntLimits (*class in sympy.concrete.expr_with_intlimits*), 911
ExprWithLimits (*class in sympy.concrete.expr_with_limits*), 606
exquo() (*in module sympy.polys.polytools*), 2364
exquo() (*sympy.polys.domains.domain.Domain method*), 2511
exquo() (*sympy.polys.domains.field.Field method*), 2520
exquo() (*sympy.polys.domains.GMPYRationalField method*), 2532
exquo() (*sympy.polys.domains.RationalField method*), 2530
exquo() (*sympy.polys.domains.ring.Ring method*), 2521
exquo() (*sympy.polys.polyclasses.DMF method*), 2568
exquo() (*sympy.polys.polyclasses.DMP method*), 2563
exquo() (*sympy.polys.polytools.Poly method*), 2392
exquo_ground() (*sympy.polys.polyclasses.DMP method*), 2563
exquo_ground() (*sympy.polys.polytools.Poly method*), 2393
exradii (*sympy.geometry.polygon.Triangle property*), 2297
ext (*sympy.polys.domains.AlgebraicField attribute*), 2543
extend() (*sympy.ntheory.generate.Sieve method*), 1476
extend() (*sympy.physics.units.unitsystem.UnitSystem method*), 1587
extend() (*sympy.plotting.plot.Plot method*), 2823
extend_to_no() (*sympy.ntheory.generate.Sieve method*), 1477
extended_negative, **925**
extended_nonnegative, **925**
extended_nonpositive, **925**
extended_nonzero, **925**
extended_positive, **925**
extended_real, **924**
ExtendedRealPredicate (*class in sympy.assumptions.predicates.sets*), 228
ExtensionElement (*class in sympy.polys.agca.extensions*), 2476
Extent (*class in sympy.codegen.fnodes*), 1150
exterior_angle (*sympy.geometry.polygon.RegularPolygon property*), 2289
extract() (*sympy.matrices.common.MatrixCommon method*), 1333
extract_additively() (*sympy.core.expr.Expr method*), 962
extract_branch_factor() (*sympy.core.expr.Expr method*), 963
extract_fundamental_discriminant() (*in module sympy.polys.numberfields.utilities*), 2738
extract_leading_order() (*sympy.core.add.Add method*), 1016
extract_multiplicatively() (*sympy.core.expr.Expr method*), 963
extract_type_tens() (*in module sympy.physics.hep.gamma_matrices*), 1590
ExtraneousFactors (*class in sympy.polys.polyerrors*), 2643
eye() (*in module sympy.matrices.dense*), 1319
eye() (*sympy.matrices.common.MatrixCommon class method*), 1334
eye() (*sympy.polys.matrices.domainmatrix.DomainMatrix class method*), 2674
eye() (*sympy.polys.matrices.sdm.SDM class method*), 2694

F

F (*in module sympy.physics.secondquant*), 1550
f2pyCodeWrapper (*class in sympy.utilities.autowrap*), 2040
faces (*sympy.combinatorics.polyhedron.Polyhedron property*), 333
factor() (*in module sympy.polys.polytools*), 2373

factor() (*sympy.core.expr.Expr method*), 964
factor_list() (*in module sympy.polys.polytools*), 2372
factor_list() (*sympy.polys.polyclasses.DMP method*), 2563
factor_list() (*sympy.polys.polytools.Poly method*), 2393
factor_list_include() (*sympy.polys.polyclasses.DMP method*), 2563
factor_list_include() (*sympy.polys.polytools.Poly method*), 2393
factor_terms() (*in module sympy.core.exprtools*), 1072
Factorable (*class in sympy.solvers.ode.single*), 770
factorial (*class in sympy.functions.combinatorial.factorials*), 434
factorial() (*sympy.polys.domains.FractionField method*), 2548
factorial() (*sympy.polys.domains.GMPYIntegerRing method*), 2528
factorial() (*sympy.polys.domains.GMPYRationalField method*), 2532
factorial() (*sympy.polys.domains.IntegerRing method*), 2526
factorial() (*sympy.polys.domains.PolynomialRing method*), 2547
factorial2 (*class in sympy.functions.combinatorial.factorials*), 436
factorial_moment() (*in module sympy.stats*), 2973
factorial_notation() (*in module sympy.parsing.sympy_parser*), 2129
factoring_visitor() (*in module sympy.utilities.enumerative*), 2061
factorint() (*in module sympy.ntheory.factor_*), 1493
factorrat() (*in module sympy.ntheory.factor_*), 1496
factors() (*sympy.core.numbers.Rational method*), 987
failed (*sympy.testing.runtests.SymPyTestResults attribute*), 2031
FallingFactorial (*class in sympy.functions.combinatorial.factorials*), 436
FBra (*in module sympy.physics.secondquant*), 1550
fcode() (*in module sympy.printing.fortran*), 2147
FCodeGen (*class in sympy.utilities.codegen*), 2049
FCodePrinter (*class in sympy.printing.fortran*), 2149
Fd (*in module sympy.physics.secondquant*), 1550
fdiff() (*sympy.codegen.cfunctions.Cbrt method*), 1144
fdiff() (*sympy.codegen.cfunctions.exp2 method*), 1145
fdiff() (*sympy.codegen.cfunctions.expm1 method*), 1145
fdiff() (*sympy.codegen.cfunctions.fma method*), 1146
fdiff() (*sympy.codegen.cfunctions.hypot method*), 1146
fdiff() (*sympy.codegen.cfunctions.log10 method*), 1147
fdiff() (*sympy.codegen.cfunctions.log1p method*), 1147
fdiff() (*sympy.codegen.cfunctions.log2 method*), 1148
fdiff() (*sympy.codegen.cfunctions.Sqrt method*), 1144
fdiff() (*sympy.core.function.Function method*), 1051
fdiff() (*sympy.functions.elementary.complexes.Abs method*), 385
fdiff() (*sympy.functions.elementary.exponential.exp method*), 412
fdiff() (*sympy.functions.elementary.exponential.LambertW method*), 413
fdiff() (*sympy.functions.elementary.exponential.log method*), 414
fdiff() (*sympy.functions.elementary.hyperbolic.csch method*), 405
fdiff() (*sympy.functions.elementary.hyperbolic.sinh method*), 402
fdiff() (*sympy.functions.special.delta_functions.DiracDelta method*), 452
fdiff() (*sympy.functions.special.delta_functions.Heaviside method*), 455
fdiff() (*sympy.functions.special.singularity_functions.SingularityFunction method*), 458
FDistribution() (*in module sympy.stats*), 2901
Feedback (*class in sympy.physics.control.lti*), 1906
fft() (*in module sympy.discrete.transforms*), 1083
fglm() (*sympy.polys.polytools.GroebnerBasis method*), 2423
fibonacci (*class in*

sympy.functions.combinatorial.numbers), 437
Field (*class in sympy.polys.domains.field*), 2520
field() (*in module sympy.polys.fields*), 2560
field_element() (*sympy.core.numbers.AlgebraicNumber method*), 991
field_isomorphism() (*in module sympy.polys.numberfields.subfield*), 2711
filldedent() (*in module sympy.utilities.misc*), 2111
filter_symbols() (*in module sympy.utilities.iterables*), 2074
find() (*sympy.core.basic.Basic method*), 933
find_DN() (*in module sympy.solvers.diophantine.diophantine*), 728
find_dynamicsymbols() (*in module sympy.physics.mechanics*), 1789
find_executable() (*in module sympy.utilities.misc*), 2111
find_linear_recurrence() (*sympy.series.sequences.SeqBase method*), 633
find_min_poly() (*in module sympy.polys.numberfields.modules*), 2736
finite, **925**
finite_diff_weights() (*in module sympy.calculus.finite_diff*), 242
FiniteDomain (*class in sympy.stats.frv*), 2981
FiniteField (*class in sympy.polys.domains*), 2522
FiniteFormalPowerSeries (*class in sympy.series.formal*), 654
FinitePredicate (*class in sympy.assumptions.predicates.calculus*), 202
FinitePSpace (*class in sympy.stats.frv*), 2981
FiniteRV() (*in module sympy.stats*), 2879
FiniteSet (*class in sympy.sets.sets*), 1197
first_moment_of_area() (*sympy.geometry.polygon.Polygon method*), 2279
FirstExact (*class in sympy.solvers.ode.single*), 771
FirstLinear (*class in sympy.solvers.ode.single*), 776
FisherZ() (*in module sympy.stats*), 2902
fixed_row_vector() (*sympy.stats.DiscreteMarkovChain method*), 2950
FixedBosonicBasis (*class in sympy.physics.secondquant*), 1550
FKet (*in module sympy.physics.secondquant*), 1550
FlagError (*class in sympy.polys.polyerrors*), 2644
FlatMirror (*class in sympy.physics.optics.gaussopt*), 1861
FlatRefraction (*class in sympy.physics.optics.gaussopt*), 1861
flatten() (*in module sympy.utilities.iterables*), 2074
flatten() (*sympy.categories.CompositeMorphism method*), 2746
flatten() (*sympy.core.add.Add class method*), 1017
flatten() (*sympy.core.mul.Mul class method*), 1011
Float (*class in sympy.core.numbers*), 982
FloatBaseType (*class in sympy.codegen.ast*), 1131
FloatType (*class in sympy.codegen.ast*), 1131
floor (*class in sympy.functions.elementary.integers*), 409
fma (*class in sympy.codegen.cfunctions*), 1145
foci (*sympy.geometry.ellipse.Ellipse property*), 2259
FockSpace (*class in sympy.physics.quantum.hilbert*), 1803
FockState (*class in sympy.physics.secondquant*), 1551
FockStateBosonBra (*class in sympy.physics.secondquant*), 1551
FockStateBosonKet (*class in sympy.physics.secondquant*), 1552
FockStateBra (*class in sympy.physics.secondquant*), 1552
FockStateFermionBra (*class in sympy.physics.secondquant*), 1552
FockStateFermionKet (*class in sympy.physics.secondquant*), 1552
FockStateKet (*class in sympy.physics.secondquant*), 1553
focus_distance (*sympy.geometry.ellipse.Ellipse property*), 2259
For (*class in sympy.codegen.ast*), 1132
forcing (*sympy.physics.mechanics.jointsmethod.JointsMeth property*), 1781
forcing (*sympy.physics.mechanics.kane.KanesMethod property*), 1765
forcing (*sympy.physics.mechanics.lagrange.LagrangesMet*

property), 1769
forcing_full (sympy.physics.mechanics.jointsmethod.JointsMethod property), 1781
forcing_full (sympy.physics.mechanics.kane.KanesMethod property), 1765
forcing_full (sympy.physics.mechanics.lagrange.LagrangesMethod property), 1769
form_eoms() (sympy.physics.mechanics.jointsmethod.JointsMethod method), 1782
form_lagranges_equations() (sympy.physics.mechanics.lagrange.LagrangesMethod method), 1769
FormalPowerSeries (class in sympy.series.formal), 647
FormalPowerSeriesCompose (class in sympy.series.formal), 653
FormalPowerSeriesInverse (class in sympy.series.formal), 653
FormalPowerSeriesProduct (class in sympy.series.formal), 653
FortranReturn (class in sympy.codegen.fnodes), 1150
fourier_series() (in module sympy.series.fourier), 643
fourier_series() (sympy.core.expr.Expr method), 964
fourier_transform() (in module sympy.integrals.transforms), 579
FourierSeries (class in sympy.series.fourier), 640
FourierTransform (class in sympy.integrals.transforms), 580
fps() (in module sympy.series.formal), 650
fps() (sympy.core.expr.Expr method), 964
frac (class in sympy.functions.elementary.integers), 410
frac (in module sympy.printing.pretty.pretty_symbology), 2185
frac_field() (sympy.polys.domains.domain.Domain method), 2512
frac_unify() (sympy.polys.polyclasses.DMF method), 2568
FracElement (class in sympy.polys.fields), 2561
FracField (class in sympy.polys.fields), 2561
fraction() (in module sympy.simplify.radsimp), 677
FractionField (class in sympy.polys.domains), 2548
Frechet() (in module sympy.stats), 2903
free_dynamicsymbols() (sympy.physics.vector.vector.Vector method), 1645
free_module() (sympy.polys.domains.ring.Ring method), 2521
free_symbols (sympy.concrete.expr_with_limits.ExprWithLimits property), 606
free_symbols (sympy.core.basic.Basic property), 933
free_symbols (sympy.geometry.curve.Curve property), 2249
free_symbols (sympy.integrals.integrals.Integral property), 603
free_symbols (sympy.matrices.common.MatrixCommon property), 1335
free_symbols (sympy.physics.quantum.operator.DifferentialOperator property), 1808
free_symbols (sympy.physics.units.quantities.Quantity property), 1588
free_symbols (sympy.polys.polytools.Poly property), 2394
free_symbols (sympy.polys.polytools.PurePoly property), 2423
free_symbols (sympy.series.sequences.SeqBase property), 633
free_symbols() (sympy.physics.vector.vector.Vector method), 1645
free_symbols_in_domain (sympy.polys.polytools.Poly property), 2394
FreeModule (class in sympy.polys.agca.modules), 2454
FreeModuleElement (class in sympy.polys.agca.modules), 2456
FreeSpace (class in sympy.physics.optics.gaussopt), 1862
frequency (sympy.physics.optics.waves.TWave property), 1888
fresnel_coefficients() (in module sympy.physics.optics.utils), 1882
fresnelc (class in sympy.functions.special.error_functions), 482
FresnelIntegral (class in sympy.functions.special.error_functions), 480
fresnels (class in sympy.functions.special.error_functions), 480
from_AlgebraicField() (sympy.polys.domains.AlgebraicField method), 2543
from_AlgebraicField() (sympy.polys.domains.domain.Domain method), 2512
from_AlgebraicField() (sympy.polys.domains.FractionField

method), 2548
from_AlgebraicField() (sympy.polys.domains.gaussiandomains.GaussianRing method), 2533
from_AlgebraicField() (sympy.polys.domains.IntegerRing method), 2526
from_AlgebraicField() (sympy.polys.domains.PolynomialRing method), 2547
from_AlgebraicField() (sympy.polys.domains.RationalField method), 2531
from_axis_angle() (sympy.algebras.Quaternion class method), 889
from_ComplexField() (sympy.polys.domains.domain.Domain method), 2512
from_ComplexField() (sympy.polys.domains.FractionField method), 2548
from_ComplexField() (sympy.polys.domains.PolynomialRing method), 2547
from_ddm() (sympy.polys.matrices.sdm.SDM class method), 2694
from_dict() (sympy.polys.polyclasses.DMP class method), 2563
from_dict() (sympy.polys.polytools.Poly class method), 2394
from_dict_sympy() (sympy.polys.matrices.domainmatrix.DomainMatrix class method), 2675
from_expr() (sympy.codegen.ast.Type class method), 1139
from_expr() (sympy.polys.polytools.Poly class method), 2394
from_ExpressionDomain() (sympy.polys.domains.domain.Domain method), 2512
from_ExpressionDomain() (sympy.polys.domains.ExpressionDomain method), 2550
from_ExpressionRawDomain() (sympy.polys.domains.domain.Domain method), 2513
from_FF() (sympy.polys.domains.domain.Domain method), 2513
from_FF() (sympy.polys.domains.FiniteField method), 2524
from_FF() (sympy.polys.domains.IntegerRing method), 2526
from_FF_gmpy() (sympy.polys.domains.domain.Domain method), 2513
from_FF_gmpy() (sympy.polys.domains.FiniteField method), 2524
from_FF_gmpy() (sympy.polys.domains.GMPYIntegerRing method), 2528
from_FF_gmpy() (sympy.polys.domains.IntegerRing method), 2526
from_FF_python() (sympy.polys.domains.domain.Domain method), 2513
from_FF_python() (sympy.polys.domains.FiniteField method), 2524
from_FF_python() (sympy.polys.domains.GMPYIntegerRing method), 2528
from_FF_python() (sympy.polys.domains.IntegerRing method), 2526
from_FractionField() (sympy.polys.domains.domain.Domain method), 2513
from_FractionField() (sympy.polys.domains.ExpressionDomain method), 2550
from_FractionField() (sympy.polys.domains.FractionField method), 2548
from_FractionField() (sympy.polys.domains.PolynomialRing method), 2547
from_GaussianIntegerRing() (sympy.polys.domains.AlgebraicField method), 2543
from_GaussianIntegerRing() (sympy.polys.domains.ExpressionDomain method), 2550
from_GaussianIntegerRing() (sympy.polys.domains.FractionField method), 2548
from_GaussianIntegerRing() (sympy.polys.domains.gaussiandomains.GaussianInt method), 2536
from_GaussianIntegerRing() (sympy.polys.domains.gaussiandomains.GaussianRa method), 2538
from_GaussianIntegerRing() (sympy.polys.domains.PolynomialRing method), 2547
from_GaussianRationalField() (sympy.polys.domains.AlgebraicField method), 2543
from_GaussianRationalField() (sympy.polys.domains.ExpressionDomain method), 2550
from_GaussianRationalField() (sympy.polys.domains.FractionField method), 2548

from_GaussianRationalField() (sympy.polys.domains.gaussiandomains.GaussianInteger method), 2536
from_GaussianRationalField() (sympy.polys.domains.gaussiandomains.GaussianRational method), 2538
from_GaussianRationalField() (sympy.polys.domains.GMPYRationalField method), 2532
from_GaussianRationalField() (sympy.polys.domains.PolynomialRing method), 2547
from_GaussianRationalField() (sympy.polys.domains.RationalField method), 2531
from_GlobalPolynomialRing() (sympy.polys.domains.domain.Domain method), 2513
from_GlobalPolynomialRing() (sympy.polys.domains.PolynomialRing method), 2547
from_hyper() (in module sympy.holonomic.holonomic), 2323
from_index_summation() (sympy.matrices.expressions.MatrixExpr static method), 1371
from_int_list() (sympy.polys.numberfields.modules.ModuleElement class method), 2731
from_inversion_vector() (sympy.combinatorics.permutations.Permutation class method), 268
from_list() (sympy.polys.matrices.domainmatrix.DomainMatrix class method), 2676
from_list() (sympy.polys.matrices.sdm.SDM class method), 2694
from_list() (sympy.polys.polyclasses.DMP class method), 2563
from_list() (sympy.polys.polytools.Poly class method), 2394
from_list_sympy() (sympy.polys.matrices.domainmatrix.DomainMatrix class method), 2676
from_Matrix() (sympy.physics.control.lti.TransferFunctionMatrix class method), 1920
from_Matrix() (sympy.polys.matrices.domainmatrix.DomainMatrix class method), 2675
from_meijerg() (in module sympy.holonomic.holonomic), 2323
from_MonogenicFiniteExtension() (sympy.polys.domains.domain.Domain method), 2513
from_poly() (sympy.polys.polytools.Poly class method), 2394
from_PolynomialRing() (sympy.polys.domains.domain.Domain method), 2513
from_PolynomialRing() (sympy.polys.domains.ExpressionDomain method), 2550
from_PolynomialRing() (sympy.polys.domains.FractionField method), 2548
from_PolynomialRing() (sympy.polys.domains.PolynomialRing method), 2547
from_QQ() (sympy.polys.domains.AlgebraicField method), 2543
from_QQ() (sympy.polys.domains.ExpressionDomain method), 2550
from_QQ() (sympy.polys.domains.FiniteField method), 2524
from_QQ() (sympy.polys.domains.FractionField method), 2548
from_QQ() (sympy.polys.domains.gaussiandomains.GaussianI method), 2533
from_QQ() (sympy.polys.domains.GMPYIntegerRing method), 2528
from_QQ() (sympy.polys.domains.IntegerRing method), 2527
from_QQ() (sympy.polys.domains.PolynomialRing method), 2547
from_QQ() (sympy.polys.domains.RationalField method), 2531
from_QQ_gmpy() (sympy.polys.domains.AlgebraicField method), 2543
from_QQ_gmpy() (sympy.polys.domains.domain.Domain method), 2513
from_QQ_gmpy() (sympy.polys.domains.ExpressionDomain method), 2550
from_QQ_gmpy() (sympy.polys.domains.FiniteField method), 2524
from_QQ_gmpy() (sympy.polys.domains.FractionField method), 2549
from_QQ_gmpy() (sympy.polys.domains.gaussiandomains.GaussianI method), 2533
from_QQ_gmpy() (sympy.polys.domains.GMPYIntegerRing method), 2528
from_QQ_gmpy() (sympy.polys.domains.GMPYRationalField method), 2532
from_QQ_gmpy() (sympy.polys.domains.IntegerRing method), 2527
from_QQ_gmpy() (sympy.polys.domains.PolynomialRing method), 2547
from_QQ_gmpy() (sympy.polys.domains.RationalField method), 2531
from_QQ_python() (sympy.polys.domains.AlgebraicField method), 2543
from_QQ_python() (sympy.polys.domains.domain.Domain

method), 2513
from_QQ_python() (sympy.polys.domains.ExpressionDomain method), 2550
from_QQ_python() (sympy.polys.domains.FiniteField method), 2524
from_QQ_python() (sympy.polys.domains.FractionField method), 2549
from_QQ_python() (sympy.polys.domains.gaussiandomains.GaussianDomain method), 2533
from_QQ_python() (sympy.polys.domains.GMPYIntegerRing method), 2528
from_QQ_python() (sympy.polys.domains.GMPYRationalField method), 2532
from_QQ_python() (sympy.polys.domains.IntegerRing method), 2527
from_QQ_python() (sympy.polys.domains.PolynomialRing method), 2547
from_QQ_python() (sympy.polys.domains.RationalField method), 2531
from_rational_expression() (sympy.physics.control.lti.TransferFunction class method), 1895
from_real() (sympy.sets.fancysets.ComplexRegion class method), 1211
from_RealField() (sympy.polys.domains.AlgebraicField method), 2543
from_RealField() (sympy.polys.domains.domain.Domain method), 2513
from_RealField() (sympy.polys.domains.ExpressionDomain method), 2550
from_RealField() (sympy.polys.domains.FiniteField method), 2524
from_RealField() (sympy.polys.domains.FractionField method), 2549
from_RealField() (sympy.polys.domains.GMPYIntegerRing method), 2528
from_RealField() (sympy.polys.domains.GMPYRationalField method), 2532
from_RealField() (sympy.polys.domains.IntegerRing method), 2527
from_RealField() (sympy.polys.domains.PolynomialRing method), 2547
from_RealField() (sympy.polys.domains.RationalField method), 2531
from_rep() (sympy.polys.matrices.domainmatrix.DomainMatrix class method), 2677
from_rgs() (sympy.combinatorics.partitions.Partition class method), 252
from_rotation_matrix() (sympy.algebras.Quaternion class method), 889
from_sequence() (sympy.combinatorics.permutations.Permutation class method), 268
from_sympy() (sympy.polys.domains.AlgebraicField method), 2544
from_sympy() (sympy.polys.domains.ComplexField method), 2546
from_sympy() (sympy.polys.domains.domain.Domain method), 2513
from_sympy() (sympy.polys.domains.ExpressionDomain method), 2550
from_sympy() (sympy.polys.domains.FiniteField method), 2524
from_sympy() (sympy.polys.domains.FractionField method), 2549
from_sympy() (sympy.polys.domains.gaussiandomains.GaussianDomain method), 2533
from_sympy() (sympy.polys.domains.GMPYIntegerRing method), 2529
from_sympy() (sympy.polys.domains.GMPYRationalField method), 2532
from_sympy() (sympy.polys.domains.IntegerRing method), 2527
from_sympy() (sympy.polys.domains.PolynomialRing method), 2547
from_sympy() (sympy.polys.domains.RationalField method), 2531
from_sympy() (sympy.polys.domains.RealField method), 2545
from_sympy_list() (sympy.polys.polyclasses.DMP class method), 2563
from_ZZ() (sympy.polys.domains.AlgebraicField method), 2543
from_ZZ() (sympy.polys.domains.ExpressionDomain method), 2550
from_ZZ() (sympy.polys.domains.FiniteField method), 2524
from_ZZ() (sympy.polys.domains.FractionField method), 2549
from_ZZ() (sympy.polys.domains.gaussiandomains.GaussianDomain method), 2533
from_ZZ() (sympy.polys.domains.IntegerRing method), 2527
from_ZZ() (sympy.polys.domains.PolynomialRing method), 2547
from_ZZ() (sympy.polys.domains.RationalField method), 2531
from_ZZ_gmpy() (sympy.polys.domains.AlgebraicField method), 2543
from_ZZ_gmpy() (sympy.polys.domains.domain.Domain method), 2513
from_ZZ_gmpy() (sympy.polys.domains.ExpressionDomain method), 2550
from_ZZ_gmpy() (sympy.polys.domains.FiniteField method), 2524
from_ZZ_gmpy() (sympy.polys.domains.FractionField method), 2549

from_ZZ_gmpy() (sympy.polys.domains.gaussiandomains.GaussianIntegerRing method), 2533
from_ZZ_gmpy() (sympy.polys.domains.GMPYIntegerRing method), 2529
from_ZZ_gmpy() (sympy.polys.domains.GMPYRationalField method), 2532
from_ZZ_gmpy() (sympy.polys.domains.IntegerRing method), 2527
from_ZZ_gmpy() (sympy.polys.domains.PolynomialRing method), 2547
from_ZZ_gmpy() (sympy.polys.domains.RationalField method), 2531
from_ZZ_python() (sympy.polys.domains.AlgebraicField method), 2543
from_ZZ_python() (sympy.polys.domains.domain.Domain method), 2513
from_ZZ_python() (sympy.polys.domains.ExpressionDomain method), 2550
from_ZZ_python() (sympy.polys.domains.FiniteField method), 2524
from_ZZ_python() (sympy.polys.domains.FractionField method), 2549
from_ZZ_python() (sympy.polys.domains.gaussiandomains.GaussianIntegerRing method), 2533
from_ZZ_python() (sympy.polys.domains.GMPYIntegerRing method), 2529
from_ZZ_python() (sympy.polys.domains.GMPYRationalField method), 2532
from_ZZ_python() (sympy.polys.domains.IntegerRing method), 2527
from_ZZ_python() (sympy.polys.domains.PolynomialRing method), 2547
from_ZZ_python() (sympy.polys.domains.RationalField method), 2531
fromiter() (sympy.core.basic.Basic class method), 933
fu() (in module sympy.simplify.fu), 712
full_cyclic_form (sympy.combinatorics.permutations.Permutation property), 268
FullRankPredicate (class in sympy.assumptions.predicates.matrices), 210
fully_symmetric() (sympy.tensor.tensor.TensorSymmetry class method), 1421
func (sympy.core.basic.Basic property), 933
func (sympy.physics.vector.dyadic.Dyadic property), 1650
func (sympy.physics.vector.vector.Vector property), 1645
func_field_modgcd() (in module sympy.polys.modulargcd), 2649
func_name() (in module sympy.utilities.misc), 2111
FunctionClass (class in sympy.core.function), 1050
FunctionDefinition (class in sympy.codegen.ast), 1133
FunctionMatrix (class in sympy.matrices.expressions), 1376
FunctionPrototype (class in sympy.codegen.ast), 1134
functions (sympy.geometry.curve.Curve property), 2249
fundamental_matrix() (sympy.stats.DiscreteMarkovChain method), 2950
fwht() (in module sympy.discrete.transforms), 1086

G

G() (in module sympy.printing.pretty.pretty_symbology), 2184
g() (in module sympy.printing.pretty.pretty_symbology), 2184
gamma (class in sympy.functions.special.gamma_functions), 459
Gamma() (in module sympy.stats), 2904
gamma_trace() (in module sympy.physics.hep.gamma_matrices), 1590

GammaInverse() (*in module sympy.stats*), 2905
GammaProcess (*class in sympy.stats*), 2956
gammasimp() (*sympy.core.expr.Expr method*), 964
Gate (*class in sympy.physics.quantum.gate*), 1843
gate (*sympy.physics.quantum.gate.CGate property*), 1842
gate (*sympy.physics.quantum.gate.CNotGate property*), 1843
gate_simp() (*in module sympy.physics.quantum.gate*), 1846
gate_sort() (*in module sympy.physics.quantum.gate*), 1846
gateinputcount() (*in module sympy.logic.boolalg*), 1175
gaunt() (*in module sympy.physics.wigner*), 1568
gauss_chebyshev_t() (*in module sympy.integrals.quadrature*), 613
gauss_chebyshev_u() (*in module sympy.integrals.quadrature*), 614
gauss_gen_laguerre() (*in module sympy.integrals.quadrature*), 612
gauss_hermite() (*in module sympy.integrals.quadrature*), 611
gauss_jacobi() (*in module sympy.integrals.quadrature*), 615
gauss_jordan_solve() (*sympy.matrices.matrices.MatrixBase method*), 1297
gauss_laguerre() (*in module sympy.integrals.quadrature*), 610
gauss_legendre() (*in module sympy.integrals.quadrature*), 609
gauss_lobatto() (*in module sympy.integrals.quadrature*), 616
gaussian_conj() (*in module sympy.physics.optics.gaussopt*), 1867
gaussian_reduce() (*in module sympy.solvers.diophantine.diophantine*), 742
GaussianDomain (*class in sympy.polys.domains.gaussiandomains*), 2533
GaussianElement (*class in sympy.polys.domains.gaussiandomains*), 2533
GaussianInteger (*class in sympy.polys.domains.gaussiandomains*), 2536
GaussianIntegerRing (*class in sympy.polys.domains.gaussiandomains*), 2534
GaussianRational (*class in sympy.polys.domains.gaussiandomains*), 2539
GaussianRationalField (*class in sympy.polys.domains.gaussiandomains*), 2536
gcd() (*in module sympy.polys.polytools*), 2368
gcd() (*sympy.core.numbers.Number method*), 982
gcd() (*sympy.polys.domains.ComplexField method*), 2546
gcd() (*sympy.polys.domains.domain.Domain method*), 2514
gcd() (*sympy.polys.domains.field.Field method*), 2520
gcd() (*sympy.polys.domains.gaussiandomains.GaussianInte method*), 2536
gcd() (*sympy.polys.domains.GMPYIntegerRing method*), 2529
gcd() (*sympy.polys.domains.IntegerRing method*), 2527
gcd() (*sympy.polys.domains.PolynomialRing method*), 2547
gcd() (*sympy.polys.domains.RealField method*), 2545
gcd() (*sympy.polys.monomials.Monomial method*), 2429
gcd() (*sympy.polys.polyclasses.DMP method*), 2563
gcd() (*sympy.polys.polytools.Poly method*), 2394
gcd_list() (*in module sympy.polys.polytools*), 2368
gcd_terms() (*in module sympy.core.exprtools*), 1071
gcdex() (*in module sympy.polys.polytools*), 2365
gcdex() (*sympy.polys.domains.domain.Domain method*), 2514
gcdex() (*sympy.polys.domains.GMPYIntegerRing method*), 2529
gcdex() (*sympy.polys.domains.IntegerRing method*), 2527
gcdex() (*sympy.polys.domains.PolynomialRing method*), 2547
gcdex() (*sympy.polys.polyclasses.DMP method*), 2563
gcdex() (*sympy.polys.polytools.Poly method*), 2395
Ge (*in module sympy.core.relational*), 1023
gegenbauer (*class in*

sympy.functions.special.polynomials), 535
gegenbauer_poly() (*in module sympy.polys.orthopolys*), 2440
gen (*sympy.polys.polytools.Poly property*), 2395
gen (*sympy.series.sequences.SeqBase property*), 634
GeneralizedMultivariateLogGamma() (*in module sympy.stats*), 2938
GeneralizedMultivariateLogGammaOmega() (*in module sympy.stats*), 2939
GeneralPythagorean (*class in sympy.solvers.diophantine.diophantine*), 749
GeneralSumOfEvenPowers (*class in sympy.solvers.diophantine.diophantine*), 750
GeneralSumOfSquares (*class in sympy.solvers.diophantine.diophantine*), 749
generate() (*sympy.combinatorics.perm_groups.PermutationGroup method*), 307
generate_bell() (*in module sympy.utilities.iterables*), 2074
generate_derangements() (*in module sympy.utilities.iterables*), 2076
generate_dimino() (*sympy.combinatorics.perm_groups.PermutationGroup method*), 308
generate_gray() (*sympy.combinatorics.graycode.GrayCode method*), 348
generate_involutions() (*in module sympy.utilities.iterables*), 2076
generate_oriented_forest() (*in module sympy.utilities.iterables*), 2076
generate_schreier_sims() (*sympy.combinatorics.perm_groups.PermutationGroup method*), 309
generator (*sympy.polys.numberfields.modules.PowerBasisElement property*), 2732
generator_product() (*sympy.combinatorics.perm_groups.PermutationGroup method*), 309
generators (*sympy.combinatorics.perm_groups.PermutationGroup property*), 309
generators() (*sympy.liealgebras.weyl_group.WeylGroup method*), 2339
GeneratorsError (*class in sympy.polys.polyerrors*), 2644
GeneratorsNeeded (*class in sympy.polys.polyerrors*), 2644
genocchi (*class in sympy.functions.combinatorial.numbers*), 442
Geometric() (*in module sympy.stats*), 2880
geometric_conj_ab() (*in module sympy.physics.optics.gaussopt*), 1867
geometric_conj_af() (*in module sympy.physics.optics.gaussopt*), 1868
geometric_conj_bf() (*in module sympy.physics.optics.gaussopt*), 1868
GeometricRay (*class in sympy.physics.optics.gaussopt*), 1862
GeometryEntity (*class in sympy.geometry.entity*), 2194
get() (*sympy.core.containers.Dict method*), 1070
get_adjacency_distance() (*sympy.combinatorics.permutations.Permutation method*), 268
get_adjacency_matrix() (*sympy.combinatorics.permutations.Permutation method*), 269
get_basis() (*in module sympy.physics.quantum.represent*), 1816
get_class() (*in module sympy.utilities.source*), 2116
get_comm() (*sympy.tensor.tensor._TensorManager method*), 1422
get_contraction_structure() (*in module sympy.tensor.index_methods*), 1406
get_data() (*sympy.plotting.plot.Line2DBaseSeries method*), 2866
get_default_datatype() (*in module sympy.utilities.codegen*), 2055
get_diag_blocks() (*sympy.matrices.common.MatrixCommon method*), 1335
get_diag_blocks() (*sympy.matrices.expressions.blockmatrix.BlockDiagMatrix method*), 1385
get_domain() (*sympy.polys.polytools.Poly method*), 2395
get_exact() (*sympy.polys.domains.ComplexField method*), 2546
get_exact() (*sympy.polys.domains.domain.Domain method*), 2514
get_exact() (*sympy.polys.domains.RealField method*), 2545
get_field() (*sympy.polys.domains.domain.Domain method*), 2514
get_field() (*sympy.polys.domains.ExpressionDomain*

method), 2550
get_field() (sympy.polys.domains.field.Field method), 2520
get_field() (sympy.polys.domains.FiniteField method), 2525
get_field() (sympy.polys.domains.gaussiandomains.GaussianRing method), 2536
get_field() (sympy.polys.domains.gaussiandomains.GaussianRing method), 2538
get_field() (sympy.polys.domains.IntegerRing method), 2527
get_field() (sympy.polys.domains.PolynomialRing method), 2548
get_free_indices() (sympy.tensor.tensor.TensMul method), 1418
get_gen_sol_from_part_sol() (in module sympy.solvers.ode.riccati), 805
get_indices() (in module sympy.tensor.index_methods), 1408
get_indices() (sympy.tensor.tensor.TensMul method), 1418
get_interface() (sympy.utilities.codegen.FCodeGen method), 2050
get_matrix() (sympy.tensor.tensor.TensExpr method), 1414
get_mod_func() (in module sympy.utilities.source), 2116
get_modulus() (sympy.polys.polytools.Poly method), 2395
get_motion_params() (in module sympy.physics.vector.functions), 1659
get_num_denom() (in module sympy.polys.numberfields.utilities), 2738
get_period() (sympy.functions.special.hyper.meijerg method), 525
get_permuted() (sympy.physics.secondquant.PermutationOperator method), 1560
get_points() (sympy.plotting.plot.LineOver1DRangeSeries method), 2866
get_points() (sympy.plotting.plot.Parametric2DLineSeries method), 2866
get_positional_distance() (sympy.combinatorics.permutations.Permutation method), 270
get_precedence_distance() (sympy.combinatorics.permutations.Permutation method), 270
get_precedence_matrix() (sympy.combinatorics.permutations.Permutation method), 270
get_prototype() (sympy.utilities.codegen.CCodeGen method), 2048
get_prototype() (sympy.utilities.codegen.RustCodeGen method), 2053
get_resource() (in module sympy.utilities.pkgdata), 2115
get_ring() (sympy.polys.domains.AlgebraicField method), 2544
get_ring() (sympy.polys.domains.ComplexField method), 2546
get_ring() (sympy.polys.domains.domain.Domain method), 2514
get_ring() (sympy.polys.domains.ExpressionDomain method), 2550
get_ring() (sympy.polys.domains.field.Field method), 2520
get_ring() (sympy.polys.domains.FractionField method), 2549
get_ring() (sympy.polys.domains.gaussiandomains.GaussianRing method), 2536
get_ring() (sympy.polys.domains.gaussiandomains.GaussianRing method), 2538
get_ring() (sympy.polys.domains.GMPYRationalField method), 2532
get_ring() (sympy.polys.domains.RationalField method), 2531
get_ring() (sympy.polys.domains.RealField method), 2546
get_ring() (sympy.polys.domains.ring.Ring method), 2521
get_segments() (sympy.plotting.plot.MatplotlibBackend static method), 2868
get_subNO() (sympy.physics.secondquant.NO method), 1558
get_subset_from_bitstring() (sympy.combinatorics.graycode method), 351
get_symmetric_group_sgs() (in module sympy.combinatorics.tensor_can), 870
get_sympy_dir() (in module sympy.testing.runtests), 2032
get_target_matrix() (sympy.physics.quantum.gate.Gate method), 1843
get_target_matrix() (sympy.physics.quantum.gate.UGate method), 1845
get_units_non_prefixed() (sympy.physics.units.unitsystem.UnitSystem method), 1587
getn() (sympy.core.expr.Expr method), 964
getO() (sympy.core.expr.Expr method), 964
gf_add() (in module sympy.polys.galoistools), 2607

gf_add_ground() (in module sympy.polys.galoistools), 2606
gf_add_mul() (in module sympy.polys.galoistools), 2608
gf_berlekamp() (in module sympy.polys.galoistools), 2618
gf_cofactors() (in module sympy.polys.galoistools), 2612
gf_compose() (in module sympy.polys.galoistools), 2614
gf_compose_mod() (in module sympy.polys.galoistools), 2614
gf_crt() (in module sympy.polys.galoistools), 2602
gf_crt1() (in module sympy.polys.galoistools), 2602
gf_crt2() (in module sympy.polys.galoistools), 2603
gf_csolve() (in module sympy.polys.galoistools), 2620
gf_degree() (in module sympy.polys.galoistools), 2603
gf_diff() (in module sympy.polys.galoistools), 2613
gf_div() (in module sympy.polys.galoistools), 2609
gf_eval() (in module sympy.polys.galoistools), 2613
gf_expand() (in module sympy.polys.galoistools), 2609
gf_exquo() (in module sympy.polys.galoistools), 2610
gf_factor() (in module sympy.polys.galoistools), 2619
gf_factor_sqf() (in module sympy.polys.galoistools), 2618
gf_from_dict() (in module sympy.polys.galoistools), 2605
gf_from_int_poly() (in module sympy.polys.galoistools), 2605
gf_gcd() (in module sympy.polys.galoistools), 2612
gf_gcdex() (in module sympy.polys.galoistools), 2612
gf_int() (in module sympy.polys.galoistools), 2603
gf_irreducible() (in module sympy.polys.galoistools), 2615
gf_irreducible_p() (in module sympy.polys.galoistools), 2615
gf_LC() (in module sympy.polys.galoistools), 2604
gf_lcm() (in module sympy.polys.galoistools), 2612
gf_lshift() (in module sympy.polys.galoistools), 2610
gf_monic() (in module sympy.polys.galoistools), 2613
gf_mul() (in module sympy.polys.galoistools), 2608
gf_mul_ground() (in module sympy.polys.galoistools), 2607
gf_multi_eval() (in module sympy.polys.galoistools), 2614
gf_neg() (in module sympy.polys.galoistools), 2606
gf_normal() (in module sympy.polys.galoistools), 2605
gf_pow() (in module sympy.polys.galoistools), 2611
gf_pow_mod() (in module sympy.polys.galoistools), 2611
gf_Qbasis() (in module sympy.polys.galoistools), 2617
gf_Qmatrix() (in module sympy.polys.galoistools), 2617
gf_quo() (in module sympy.polys.galoistools), 2610
gf_quo_ground() (in module sympy.polys.galoistools), 2607
gf_random() (in module sympy.polys.galoistools), 2615
gf_rem() (in module sympy.polys.galoistools), 2609
gf_rshift() (in module sympy.polys.galoistools), 2611
gf_shoup() (in module sympy.polys.galoistools), 2618
gf_sqf_list() (in module sympy.polys.galoistools), 2616
gf_sqf_p() (in module sympy.polys.galoistools), 2616
gf_sqf_part() (in module sympy.polys.galoistools), 2616
gf_sqr() (in module sympy.polys.galoistools), 2608
gf_strip() (in module sympy.polys.galoistools), 2604
gf_sub() (in module sympy.polys.galoistools), 2607
gf_sub_ground() (in module sympy.polys.galoistools), 2606
gf_sub_mul() (in module sympy.polys.galoistools), 2608
gf_TC() (in module sympy.polys.galoistools), 2604
gf_to_dict() (in module sympy.polys.galoistools), 2605

gf_to_int_poly() (in module sympy.polys.galoistools), 2606
gf_trace_map() (in module sympy.polys.galoistools), 2614
gf_trunc() (in module sympy.polys.galoistools), 2604
gf_value() (in module sympy.polys.galoistools), 2620
gf_zassenhaus() (in module sympy.polys.galoistools), 2618
gff() (in module sympy.polys.polytools), 2371
gff_list() (in module sympy.polys.polytools), 2371
gff_list() (sympy.polys.polyclasses.DMP method), 2563
gff_list() (sympy.polys.polytools.Poly method), 2396
given() (in module sympy.stats), 2964
gm_private_key() (in module sympy.crypto.crypto), 2797
gm_public_key() (in module sympy.crypto.crypto), 2797
GMPYFiniteField (class in sympy.polys.domains), 2525
GMPYIntegerRing (class in sympy.polys.domains), 2528
GMPYRationalField (class in sympy.polys.domains), 2531
GoldenRatio (class in sympy.core.numbers), 1003
Gompertz() (in module sympy.stats), 2906
gosper_normal() (in module sympy.concrete.gosper), 916
gosper_sum() (in module sympy.concrete.gosper), 917
gosper_term() (in module sympy.concrete.gosper), 917
goto (class in sympy.codegen.cnodes), 1149
GoTo (class in sympy.codegen.fnodes), 1151
gouy (sympy.physics.optics.gaussopt.BeamParameter property), 1858
GradedLexOrder (class in sympy.polys.orderings), 2431
gradient() (in module sympy.physics.vector.fieldfunctions), 1671
gradient() (in module sympy.vector), 1472
gradient() (sympy.vector.deloperator.Del method), 1461
GramSchmidt() (in module sympy.matrices.dense), 1321
gray_to_bin() (sympy.combinatorics.graycode method), 350
GrayCode (class in sympy.combinatorics.graycode), 347
graycode_subsets() (sympy.combinatorics.graycode method), 351
GreaterThan (class in sympy.core.relational), 1024
greek_letters (in module sympy.printing.pretty.pretty_symbology), 2184
groebner() (in module sympy.polys.groebnertools), 2639
groebner() (in module sympy.polys.polytools), 2377
GroebnerBasis (class in sympy.polys.polytools), 2423
ground_roots() (in module sympy.polys.polytools), 2375
ground_roots() (sympy.polys.polytools.Poly method), 2396
group() (in module sympy.utilities.iterables), 2077
group_name() (sympy.liealgebras.weyl_group.WeylGroup method), 2339
group_order() (sympy.liealgebras.weyl_group.WeylGroup method), 2339
grover_iteration() (in module sympy.physics.quantum.grover), 1849
gruntz() (in module sympy.series.gruntz), 623
Gt (in module sympy.core.relational), 1023
Gumbel() (in module sympy.stats), 2907

H

H (in module sympy.physics.quantum.gate), 1844
H (sympy.matrices.common.MatrixCommon property), 1327
HadamardGate (class in sympy.physics.quantum.gate), 1844
HadamardPower (class in sympy.matrices.expressions), 1374
HadamardProduct (class in sympy.matrices.expressions), 1373
Half (class in sympy.core.numbers), 996
half_gcdex() (in module sympy.polys.polytools), 2364
half_gcdex() (sympy.polys.domains.domain.Domain method), 2514
half_gcdex() (sympy.polys.polyclasses.DMP method), 2563

half_gcdex() (*sympy.polys.polytools.Poly method*), 2396
half_per() (*sympy.polys.polyclasses.DMF method*), 2568
half_wave_retarder() (*in module sympy.physics.optics.polarization*), 1872
handler (*sympy.assumptions.assume.Predicate attribute*), 196
handler (*sympy.assumptions.predicates.calculus.FinitePredicate attribute*), 203
handler (*sympy.assumptions.predicates.calculus.InfinitePredicate attribute*), 203
handler (*sympy.assumptions.predicates.common.CommutativePredicate attribute*), 202
handler (*sympy.assumptions.predicates.common.IsTruePredicate attribute*), 202
handler (*sympy.assumptions.predicates.matrices.ComplexElementsPredicate attribute*), 213
handler (*sympy.assumptions.predicates.matrices.DiagonalPredicate attribute*), 210
handler (*sympy.assumptions.predicates.matrices.FullRankPredicate attribute*), 210
handler (*sympy.assumptions.predicates.matrices.IntegerElementsPredicate attribute*), 212
handler (*sympy.assumptions.predicates.matrices.InvertiblePredicate attribute*), 205
handler (*sympy.assumptions.predicates.matrices.LowerTriangularPredicate attribute*), 209
handler (*sympy.assumptions.predicates.matrices.NormalPredicate attribute*), 214
handler (*sympy.assumptions.predicates.matrices.OrthogonalPredicate attribute*), 206
handler (*sympy.assumptions.predicates.matrices.PositiveDefinitePredicate attribute*), 208
handler (*sympy.assumptions.predicates.matrices.RealElementsPredicate attribute*), 212
handler (*sympy.assumptions.predicates.matrices.SingularPredicate attribute*), 214
handler (*sympy.assumptions.predicates.matrices.SquarePredicate attribute*), 211
handler (*sympy.assumptions.predicates.matrices.SymmetricPredicate attribute*), 204
handler (*sympy.assumptions.predicates.matrices.TriangularPredicate attribute*), 215
handler (*sympy.assumptions.predicates.matrices.UnitaryPredicate attribute*), 207
handler (*sympy.assumptions.predicates.matrices.UnitTriangularPredicate attribute*), 216
handler (*sympy.assumptions.predicates.matrices.UpperTriangularPredicate attribute*), 208
handler (*sympy.assumptions.predicates.ntheory.CompositePredicate attribute*), 218
handler (*sympy.assumptions.predicates.ntheory.EvenPredicate attribute*), 216
handler (*sympy.assumptions.predicates.ntheory.OddPredicate attribute*), 217
handler (*sympy.assumptions.predicates.ntheory.PrimePredicate attribute*), 218
handler (*sympy.assumptions.predicates.order.NegativePredicate attribute*), 220
handler (*sympy.assumptions.predicates.order.NonNegativePredicate attribute*), 224
handler (*sympy.assumptions.predicates.order.NonPositivePredicate attribute*), 223
handler (*sympy.assumptions.predicates.order.NonZeroPredicate attribute*), 222
handler (*sympy.assumptions.predicates.order.PositivePredicate attribute*), 219
handler (*sympy.assumptions.predicates.order.ZeroPredicate attribute*), 221
handler (*sympy.assumptions.predicates.sets.AlgebraicPredicate attribute*), 232
handler (*sympy.assumptions.predicates.sets.AntihermitianPredicate attribute*), 231
handler (*sympy.assumptions.predicates.sets.ComplexPredicate attribute*), 230
handler (*sympy.assumptions.predicates.sets.ExtendedRealPredicate attribute*), 228
handler (*sympy.assumptions.predicates.sets.HermitianPredicate attribute*), 229
handler (*sympy.assumptions.predicates.sets.ImaginaryPredicate attribute*), 231
handler (*sympy.assumptions.predicates.sets.IntegerPredicate attribute*), 225
handler (*sympy.assumptions.predicates.sets.IrrationalPredicate attribute*), 226
handler (*sympy.assumptions.predicates.sets.RationalPredicate attribute*), 225
handler (*sympy.assumptions.predicates.sets.RealPredicate attribute*), 228
handler (*sympy.assumptions.predicates.sets.TranscendentalPredicate attribute*), 232
hankel1 (*class in sympy.functions.special.bessel*), 500
hankel2 (*class in sympy.functions.special.bessel*), 500
hankel_transform() (*in module sympy.integrals.transforms*), 584
HankelTransform (*class in sympy.integrals.transforms*), 585
harmonic (*class in sympy.functions.combinatorial.numbers*), 439
has() (*sympy.core.basic.Basic method*), 933
has() (*sympy.matrices.common.MatrixCommon

method), 1335
has_assoc_Field (*sympy.polys.domains.domain.Domain attribute*), 2514
has_assoc_Ring (*sympy.polys.domains.domain.Domain attribute*), 2514
has_dups() (*in module sympy.utilities.iterables*), 2077
has_empty_sequence (*sympy.concrete.expr_with_intlimits.ExprWithIntLimits property*), 912
has_finite_limits (*sympy.concrete.expr_with_limits.ExprWithLimits property*), 607
has_free() (*sympy.core.basic.Basic method*), 934
has_integer_powers() (*sympy.physics.units.dimensions.Dimension method*), 1584
has_only_gens() (*sympy.polys.polytools.Poly method*), 2396
has_q_annihilators (*sympy.physics.secondquant.NO property*), 1559
has_q_creators (*sympy.physics.secondquant.NO property*), 1559
has_reversed_limits (*sympy.concrete.expr_with_limits.ExprWithLimits property*), 607
has_variety() (*in module sympy.utilities.iterables*), 2077
HBar (*class in sympy.physics.quantum.constants*), 1796
Heaviside (*class in sympy.functions.special.delta_functions*), 454
height (*sympy.categories.diagram_drawing.DiagramGrid property*), 2755
height (*sympy.physics.optics.gaussopt.GeometricRay property*), 1863
height() (*sympy.polys.agca.ideals.Ideal method*), 2462
height() (*sympy.printing.pretty.stringpict.stringPict method*), 2187
hermite (*class in sympy.functions.special.polynomials*), 541
Hermite() (*in module sympy.stats*), 2881
hermite_normal_form() (*in module sympy.matrices.normalforms*), 1386
hermite_normal_form() (*in module sympy.polys.matrices.normalforms*), 2700
hermite_poly() (*in module sympy.polys.orthopolys*), 2440
hermitian, **925**
HermitianOperator (*class in sympy.physics.quantum.operator*), 1809
HermitianPredicate (*class in sympy.assumptions.predicates.sets*), 228
hessian() (*in module sympy.matrices.dense*), 1320
heurisch() (*in module sympy.integrals.heurisch*), 596
HeuristicGCDFailed (*class in sympy.polys.polyerrors*), 2643
highest_root() (*sympy.liealgebras.type_a.TypeA method*), 2329
HilbertSpace (*class in sympy.physics.quantum.hilbert*), 1804
hobj() (*in module sympy.printing.pretty.pretty_symbology*), 2185
HolonomicFunction (*class in sympy.holonomic.holonomic*), 2314
holzer() (*in module sympy.solvers.diophantine.diophantine*), 742
hom() (*sympy.categories.Diagram method*), 2750
homogeneous_order() (*in module sympy.solvers.ode*), 763
homogeneous_order() (*sympy.polys.polyclasses.DMP method*), 2564
homogeneous_order() (*sympy.polys.polytools.Poly method*), 2397
HomogeneousCoeffBest (*class in sympy.solvers.ode.single*), 772
HomogeneousCoeffSubsDepDivIndep (*class in sympy.solvers.ode.single*), 773
HomogeneousCoeffSubsIndepDivDep (*class in sympy.solvers.ode.single*), 774
HomogeneousGeneralQuadratic (*class in sympy.solvers.diophantine.diophantine*), 748
HomogeneousTernaryQuadratic (*class in sympy.solvers.diophantine.diophantine*), 748
HomogeneousTernaryQuadraticNormal (*class in sympy.solvers.diophantine.diophantine*), 747
homogenize() (*sympy.polys.polyclasses.DMP method*), 2564
homogenize() (*sympy.polys.polytools.Poly*

method), 2397
homomorphism() (*in module sympy.polys.agca.homomorphisms*), 2469
HomomorphismFailed (*class in sympy.polys.polyerrors*), 2643
horner() (*in module sympy.polys.polyfuncs*), 2425
hradius (*sympy.geometry.ellipse.Ellipse property*), 2259
hstack() (*sympy.matrices.common.MatrixCommon class method*), 1336
hstack() (*sympy.polys.matrices.ddm.DDM method*), 2690
hstack() (*sympy.polys.matrices.domainmatrix.DomainMatrix method*), 2678
hstack() (*sympy.polys.matrices.sdm.SDM method*), 2695
hyper (*class in sympy.functions.special.hyper*), 520
hyper_algorithm() (*in module sympy.series.formal*), 658
hyper_re() (*in module sympy.series.formal*), 656
HyperbolicFunction (*class in sympy.functions.elementary.hyperbolic*), 402
hyperexpand() (*in module sympy.simplify.hyperexpand*), 687
hyperfocal_distance() (*in module sympy.physics.optics.utils*), 1883
Hypergeometric() (*in module sympy.stats*), 2879
hypersimilar() (*in module sympy.simplify.simplify*), 667
hypersimp() (*in module sympy.simplify.simplify*), 667
hypot (*class in sympy.codegen.cfunctions*), 1146

I

ibin() (*in module sympy.utilities.iterables*), 2078
Ideal (*class in sympy.polys.agca.ideals*), 2461
ideal() (*sympy.polys.domains.ring.Ring method*), 2521
Identity (*class in sympy.matrices.expressions*), 1378
identity (*sympy.combinatorics.perm_groups.PermutationGroup property*), 309
identity_hom() (*sympy.polys.agca.modules.FreeModule method*), 2454
identity_hom() (*sympy.polys.agca.modules.Module method*), 2453
identity_hom() (*sympy.polys.agca.modules.QuotientModul method*), 2465
identity_hom() (*sympy.polys.agca.modules.SubModule method*), 2457
IdentityFunction (*class in sympy.functions.elementary.miscellaneous*), 420
IdentityGate (*class in sympy.physics.quantum.gate*), 1844
IdentityMorphism (*class in sympy.categories*), 2746
IdentityOperator (*class in sympy.physics.quantum.operator*), 1809
idiff() (*in module sympy.geometry.util*), 2201
Idx (*class in sympy.tensor.indexed*), 1400
ifft() (*in module sympy.discrete.transforms*), 1084
ifwht() (*in module sympy.discrete.transforms*), 1087
igcd() (*in module sympy.core.numbers*), 994
ignore_warnings() (*in module sympy.utilities.exceptions*), 2067
ilcm() (*in module sympy.core.numbers*), 994
ild_moment (*sympy.physics.continuum_mechanics.beam.Be property*), 1956
ild_reactions (*sympy.physics.continuum_mechanics.beam property*), 1956
ild_shear (*sympy.physics.continuum_mechanics.beam.Bea property*), 1956
im (*class in sympy.functions.elementary.complexes*), 383
image() (*sympy.polys.agca.homomorphisms.ModuleHomom method*), 2470
ImageSet (*class in sympy.sets.fancysets*), 1206
imageset() (*in module sympy.sets.sets*), 1193
imaginary, **924**
ImaginaryPredicate (*class in sympy.assumptions.predicates.sets*), 230
ImaginaryUnit (*class in sympy.core.numbers*), 1000
ImmutableDenseMatrix (*class in sympy.matrices.immutable*), 1369
ImmutableDenseNDimArray (*class in sympy.tensor.array*), 1392
ImmutableMatrix (*in module sympy.matrices.immutable*), 1369
ImmutableSparseMatrix (*class in*