



Benjamin Jones <benjaminfjones@gmail.com>

[sage-devel] Sage 5.0 released

Jeroen Demeyer <jdemeyer@cage.ugent.be>

Wed, May 16, 2012 at 2:30 PM

Reply-To: sage-devel@googlegroups.com

To: sage-announce@googlegroups.com, sage-devel <sage-devel@googlegroups.com>

Sage 5.0 was released on 14 May 2012. It is available in source and binary form from:

* <http://www.sagemath.org/download.html>

Sage (<http://www.sagemath.org/>) is developed by volunteers and combines over 90 open source packages. For instructions about installing Sage, see

* <http://www.sagemath.org/doc/installation>

The following page lists the platforms on which Sage should work:

* <http://wiki.sagemath.org/SupportedPlatforms>

If you have any questions and/or problems, please report them to any of these Google groups:

* sage-support: <http://groups.google.com/group/sage-support>

* sage-devel: <http://groups.google.com/group/sage-devel>

You can also drop by in #sagemath on freenode or post your questions at <http://ask.sagemath.org/>

The following 126 people contributed to this release. Of those, 22 made their first contribution to Sage:

- Alex Ghitza
- Alexander Dreyer
- Aly Deines
- Anders Buch [first contribution]
- Andrey Novoseltsev
- André Apitzsch
- Anne Schilling
- Aran Carmon [first contribution]
- Benjamin Jones
- Benjamin Lundell [first contribution]
- Burcin Erocal
- Cassie Williams [first contribution]
- Chris Wuthrich
- Christian Stump
- Christopher Swenson [first contribution]
- Craig Citro
- Dan Drake
- Daniel Krenn
- David Coudert
- David Eklund
- David Kirkby
- David Kohel
- David Loeffler

- David Roe
- Dmitrii Pasechnik
- Douglas McNeil
- Ege Sertçetin [first contribution]
- Emil Widmann
- Fidel Barrera-Cruz
- Florent Hivert
- Francis Clarke
- Franco Saliola
- François Bissey
- Frederic Han [first contribution]
- Fredrik Johansson
- Fredrik Stromberg [first contribution]
- Frithjof Schulze
- Frédéric Chapoton
- Georg S. Weber
- Harald Schilly
- Hartmut Monien [first contribution]
- Hugh Thomas
- Itai Bar-Natan [first contribution]
- Ivan Andrus
- Ivo Hedtke
- Jaap Spies
- Jan Vonk [first contribution]
- Jason Grout
- Javier López Peña
- Jean-Pierre Flori
- Jennifer Balakrishnan
- Jeroen Demeyer
- Jim Stark [first contribution]
- Joal Heagney [first contribution]
- Johan Bosman
- Johannes Klaus Fichte [first contribution]
- John Cremona
- John Palmieri
- John Perry
- Jonathan Bober
- Julian Rueth
- Julien Puydt
- Justin Walker
- Karen T. Kohl [first contribution]
- Karl-Dieter Crisman
- Kelvin Li
- Kenneth Smith
- Keshav Kini
- Kiran Kedlaya
- Kwankyu Lee
- Leif Leonhardy
- Luca De Feo
- Luis Felipe Tabera Alonso
- Lukáš Lánský
- Maarten Derickx
- Marc Masdeu [first contribution]
- Marc Mezzarobba
- Marco Streng
- Mariah Lenox
- Mario Pernici
- Mark Shimozone [first contribution]
- Marshall Hampton
- Martin Albrecht
- Martin Raum

- Michael Boratko [first contribution]
- Michael Brickenstein
- Michael Orlitzky
- Michiel Kusters
- Mike Hansen
- Minh Van Nguyen
- Moritz Minzlaff
- Nathan Carter
- Nathann Cohen
- Nicolas Borie
- Nicolas M. Thiéry
- Niels Ranosch
- Niles Johnson
- Nils Bruin
- Oleksandr Motsak
- Paul Zimmermann
- Peter Story
- Punarbasu Purkayastha
- R. Andrew Ohana
- Rob Beezer
- Robert Bradshaw
- Robert Miller
- Ron Evans
- Ryan Grout
- Sebastian Pancratz
- Simon King
- Sonseeahray Rucker [first contribution]
- Stepan Starosta
- Steven Trogdon
- Sébastien Labbé
- Thierry Monteil
- Timo Jolivet
- Tom Boothby
- Travis Scrimshaw [first contribution]
- Valentin Féray
- Vincent Delecroix
- Viviane Pons
- Volker Braun
- Wilfried Huss
- William Stein
- Xavier Caruso [first contribution]
- Özge Çelik [first contribution]

* Release manager: Jeroen Demeyer.

* We closed 506 tickets in this release. For details, see

<http://boxen.math.washington.edu/home/release/sage-5.0/tickets.html>

Closed tickets:

- #1159: [reported upstream] Bug in python range [Reviewed by Jason Grout]
- #10139: Problem found in graphs.is_planar() when the graph has no edges.
[Reviewed by Nathann Cohen]
- #10970: Do not generate pipestatus from spkg/install [Reviewed by Jeroen Demeyer]
- #11470: Re-enable at symbol in notebook username [Reviewed by Karl-Dieter Crisman]
- #12001: performance of dimension of cusp forms for Gamma(N) is insanely slow [Reviewed by David Loeffler]
- #12219: Dan Drake: loading a worksheet from a https url gives poor error

message when SSL not available [Reviewed by Keshav Kini]
#12237: erf of complex arguments [Reviewed by Jeroen Demeyer]
#12238: a bug in taking $n()$ of a definite integral [Reviewed by Volker Braun]
#12277: Warnings in `plot_slope_field` [Reviewed by Karl-Dieter Crisman, Andrey Novoseltsev]
#9630: Python ints should have a conversion to Maxima [Reviewed by Michael Orlitzky, Burcin Erocal]
#1158: mathematical functions should remain symbolic [Reviewed by Karl-Dieter Crisman]
#8148: looking at the dual of a poset: `IndexError` [Reviewed by Lukáš Lánský]
#8175: update installation guide for SPARC Solaris 10 [Reviewed by Karl-Dieter Crisman]
#9819: Add a default `gcd` and `lcm` methods for fields [Reviewed by Marco Streng]
#11694: Unlabelled edges are doubled when creating multiedge graph [Reviewed by Ivan Andrus, Nathann Cohen]
#12256: if `x=var('x')` and `n` is an integer then `n.binomial(x)` should return `binomial(SR(n),x)` [Reviewed by Burcin Erocal]
#10459: serious troubles with `gcd` [Reviewed by Luis Felipe Tabera Alonso, Douglas McNeil]
#10808: `atlas-3.8.3.p16` doesn't build on ARM [Reviewed by Julien Puydt, Dmitrii Pasechnik]
#11594: Symbolic integration of `abs()` failure [Reviewed by Karl-Dieter Crisman, Michael Orlitzky]
#12042: Emil Widmann: Update the documentation how to use the VM image, especially to avoid confusion about Virtualbox and VM Player [Reviewed by Marco Streng]
#12320: install `cephes` on the ARM platform [Reviewed by Julien Puydt, Dmitrii Pasechnik]
#9162: `cygwin/ARM:pynac.pyx` use double precision special functions instead of long double (REVISITED) [Reviewed by Burcin Erocal]
#10111: `random_prime` is badly documented. [Reviewed by Francis Clarke]
#11656: Imaginary part of symbolic variable disappears in `simplify_full()` [Reviewed by Burcin Erocal]
#11842: `substitute_function` doesn't work as expected in many cases [Reviewed by Burcin Erocal]
#6810: improve doctest coverage in `schemes/homset.py` [Reviewed by Volker Braun, Andrey Novoseltsev]
#10289: Convenient history fetch facilities [Reviewed by Kwankyu Lee]
#12154: broken doctests in `magma.py` for integers in `QQ` and conversion of number field elements [Reviewed by Marco Streng]
#12294: Failures in `sage0` pexpect interface with specific length of `$DOT_SAGE` using a "screen" terminal [Reviewed by Jeroen Demeyer]
#12301: Conventions for Coding SEEALSO format [Reviewed by Florent Hivert]
#12546: Inequalities in `MixedIntegerLinearProgram` are not properly handled [Reviewed by Dmitrii Pasechnik, Punarbasu Purkayastha]
#4258: switch multiplication of dense matrices over finite prime fields to `LinBox` [Reviewed by Martin Albrecht]
#5397: [with patch, needs work] `SmallGroups` library can't be used in Sage-3.3 [Reviewed by Simon King]
#7766: Jaap Spies, Ivan Andrus: Upgrade optional `spkg_valgrind` to `valgrind-3.7.0` [Reviewed by Jean-Pierre Flori]
#11326: make ATLAS respect `CC` environment variable [Reviewed by Volker Braun]
#12422: `CFBundle.h` on OS X 10.6 uses `__attribute__((format_arg))` improperly [Reviewed by Jeroen Demeyer]
#12457: Problems with C++ exception handling on OS X with custom GCC [Reviewed by Jeroen Demeyer]
#12578: `sage-list-packages` script needs write permissions to `SAGE_ROOT/tmp` [Reviewed by John Palmieri, R. Andrew Ohana]

#12593: Bring algebras/free_algebra_quotient.py to 100% coverage [Reviewed by Javier López Peña]
#2999: Some packages don't respect the CC environment variable [Reviewed by Michael Orlitzky, R. Andrew Ohana]
#3000: Some packages don't respect the CXX environment variable [Reviewed by Michael Orlitzky, R. Andrew Ohana]
#3631: Delete *.pyc files when building Sage specific spkgs like extcode [Reviewed by Jeroen Demeyer]
#7626: delete PBUILD code in local/bin/sage-sage script [Reviewed by Jeroen Demeyer]
#11303: Fix the documentation of attach [Reviewed by Florent Hivert]
#3306: Shared library for symmetrica [Reviewed by François Bissey]
#12427: make f2c respect global CC flag [Reviewed by R. Andrew Ohana]
#12429: make flint respect global CC and CXX flags [Reviewed by R. Andrew Ohana]
#12431: make palp respect global CC flag [Reviewed by R. Andrew Ohana]
#1386: Implement splitting fields [Reviewed by Jeroen Demeyer]
#3517: "sage -upgrade" does not upgrade \$SAGE_ROOT/sage [Reviewed by Jeroen Demeyer]
#3898: [with spkg, needs work] Make an optional, self contained gcc 4.3.4 spkg [Reviewed by Jonathan Bober, David Roe]
#6365: bug in constructing extensions of finite fields [Reviewed by Jennifer Balakrishnan]
#7066: sympow ignores CC and uses gcc even when CC is set to Sun's compiler [Reviewed by R. Andrew Ohana]
#12184: Change example in doc/bordeaux/elliptic_curves.rst [Reviewed by R. Andrew Ohana]
#12712: John Palmieri: update optional spkg 'database_gap' [Reviewed by Jeroen Demeyer, Dmitrii Pasechnik]
#6375: Run sage once as part of install process to generate sage-flags.txt [Reviewed by Jeroen Demeyer]
#6494: sage should *never* ever import numpy by default on startup. Yet again it does! [Reviewed by Mike Hansen]
#9894: Simon King: Group cohomology spkg, version 2.1.2 [Reviewed by Karl-Dieter Crisman, John Palmieri]
#11329: make f2c spkg respect CC environment variable [Reviewed by R. Andrew Ohana]
#11906: PolyBoRi 0.7.1 should obey some standard environment variables [Reviewed by Jeroen Demeyer, Alexander Dreyer]
#12621: use bash for prereq install file [Reviewed by Jeroen Demeyer]
#12704: Restore doctesting of non-library files [Reviewed by Francis Clarke]
#12754: Fix scoping / name look-up issue in PolyBoRi 0.8.1 and support flags from the environment [Reviewed by Alexander Dreyer, Leif Leonhardy, Martin Albrecht, Burcin Erocal]
#12758: Jeroen Demeyer: update optional spkg 'gap_packages' [Reviewed by Dmitrii Pasechnik]
#2102: add incoming/outgoing wrappers to HG objects (like hg_sage) [Reviewed by Mike Hansen]
#4780: relative number field constructor -- error message when given poly of degree < 1 is bad [Reviewed by Mike Hansen, David Loeffler]
#7038: ratpoints 2.1.2.p2 ignores CC and uses gcc whatever [Reviewed by Leif Leonhardy]
#8125: problem with "text" in matplotlib [Reviewed by John Palmieri]
#11702: interfaces/magma.py test fails [Reviewed by Marco Streng, David Loeffler]
#11875: Correct general brokenness of Farey symbols [Reviewed by David Loeffler]
#12004: copying a linear program using Coin solver consumes enormous amounts of memory [Reviewed by Nathann Cohen]
#11909: Merging fixes for PolyBoRi 0.7.1 into 0.8 spkg [Reviewed by Alexander Dreyer, Leif Leonhardy]

#12435: lcalc does not respect global CXX flag [Reviewed by Leif Leonhardy]
 #12441: singular does not respect global cxx flag [Reviewed by Leif Leonhardy]
 #12700: stopgap for #11832 [Reviewed by John Palmieri]
 #12710: Stopgap for 11358 [Reviewed by Michael Orlitzky]
 #2732: cython in Debian build doesn't have the right include paths [Reviewed by Jeroen Demeyer]
 #5943: Sage 3.4.2.a0: len(prime_range(2^{50})) segfaults [Reviewed by Michael Orlitzky, Keshav Kini, Volker Braun]
 #11844: Race condition in building MPIR/yasm [Reviewed by Leif Leonhardy]
 #12315: OS X Lion: pari fails self tests [Reviewed by John Palmieri]
 #12319: OS X Lion: gsl fails self tests [Reviewed by John Palmieri]
 #12424: OS X Lion: symmetrica doesn't work [Reviewed by John Palmieri]
 #12765: MPIR doesn't compile with GCC-4.7.0 on ia64 [Reviewed by Jeroen Demeyer]
 #12782: When building GCC, build MPIR without the C++ interface [Reviewed by Jeroen Demeyer]
 #10810: singular-3-1-1-4.p3 doesn't build on ARM [Reviewed by Julien Puydt]
 #11881: Metaticket: build Sage on OS X 10.7 Lion [Reviewed by John Palmieri]
 #12459: Interrupt test failures on OS X 10.7 [Reviewed by Jeroen Demeyer]

Merged in sage-5.0.beta0:

#2956: Michael Orlitzky: generic multivariate polynomials are buggy on exponent overflow [Reviewed by Paul Zimmermann]
 #5048: David Loeffler: congruence subgroups are not integrated into the coercion model [Reviewed by Johan Bosman, Georg S. Weber]
 #6777: Michael Orlitzky: segfault with univariate polynomial, realfield, complexfield [Reviewed by Mike Hansen]
 #9138: Simon King: Categories for all rings [Reviewed by Volker Braun]
 #9361: Jeroen Demeyer: Maxima timeout on Mac OS X 10.4 (Tiger) [Reviewed by Karl-Dieter Crisman]
 #9958: François Bissey, Steven Trogdon, Jeroen Demeyer: Upgrade python to 2.7.x [Reviewed by John Palmieri, Karl-Dieter Crisman, Jason Grout, Jeroen Demeyer, Steven Trogdon, Leif Leonhardy, Sébastien Labbé, François Bissey]
 #10596: Sebastian Pancratz, André Aplitzsch: Misc improvements to integer.pyx [Reviewed by Aly Deines, John Cremona]
 #10757: Nathan Carter: normalized laplacian throws an error if the graph has an isolated vertex [Reviewed by Karl-Dieter Crisman]
 #10785: Nathann Cohen: Setting solver-specific options [Reviewed by Johannes Klaus Fichte]
 #11073: Volker Braun, Jeroen Demeyer: remove the spkg/base repo! [Reviewed by John Palmieri, William Stein]
 #11115: Simon King: Rewrite cached_method in Cython [Reviewed by Nicolas M. Thiéry, Andrey Novoseltsev, Volker Braun]
 #11513: Burcin Erocal: add is_trivial_zero() method to symbolic expressions [Reviewed by Benjamin Jones, Paul Zimmermann]
 #11900: Simon King: Serious regression caused by #9138 [Reviewed by Jeroen Demeyer, Nicolas M. Thiéry, Simon King, Jason Grout]
 #11915: Jason Grout: upgrade matplotlib to 1.1.0 [Reviewed by François Bissey, Jeroen Demeyer, Karl-Dieter Crisman]
 #11942: Nathann Cohen, Keshav Kini, Jeroen Demeyer: segfault on Graph().connected_component_containing_vertex("") [Reviewed by Keshav Kini, David Coudert, Nathann Cohen]
 #11986: Jeroen Demeyer: inconsistent integer hashing on 64bit systems with python 2.7 [Reviewed by François Bissey]
 #12084: David Roe: Restores a test in sage/tests/french_book/number_theory.py [Reviewed by David Loeffler]
 #12153: William Stein: Make series of data available on sage_timeit return objects [Reviewed by Nils Bruin]

#12155: Nathann Cohen: Bug when taking complement of bipartite graph.
[Reviewed by Rob Beezer]
#12182: Michiel Kosters: Calculate the trace dual of an order in a number field [Reviewed by Johan Bosman]
#12218: Michiel Kosters: Content of general polynomial not defined.
[Reviewed by David Loeffler]
#12221: Jeroen Demeyer: Failures in gp pexpect interface with specific length of `$DOT_SAGE` using a "screen" terminal [Reviewed by Georg S. Weber]
#12243: Rob Beezer: Girth of a graph fails for non-integer vertices
[Reviewed by Nathann Cohen]
#12244: Nathann Cohen: Empty graphs and new distance computations
[Reviewed by David Coudert]
#12247: Volker Braun: `var(['x','y'])` should work but doesn't [Reviewed by Burcin Erocal]
#12286: Peter Story: docstring for factorial function mentions unsupported algorithm keyword [Reviewed by Karl-Dieter Crisman]
#12304: Jeroen Demeyer: Singular build failure on OS X 10.4 when directory name is long [Reviewed by Karl-Dieter Crisman]
#12305: Martin Albrecht: interreduced basis shouldn't crash on all zero ideal [Reviewed by Burcin Erocal]
#12307: William Stein: fix typo in docstring in `cm.py` (cm elliptic curves) [Reviewed by John Cremona]

Merged in sage-5.0.beta1:

#4539: Michael Brickenstein, Burcin Erocal, Oleksandr Motsak, Alexander Dreyer, Simon King: plural wrapper [Reviewed by Simon King, Alexander Dreyer]
#5014: Michael Orlitzky: matrix rank should call `echelon_form` over `*fraction field*` [Reviewed by Andrey Novoseltsev]
#7965: Michael Orlitzky: `quo_rem` attribute error (probably easy to fix?)
[Reviewed by Marco Streng, Michael Orlitzky]
#8046: Kenneth Smith, John Palmieri: Add `matrix/matrix_double_dense.py` to documentation [Reviewed by John Palmieri, Karl-Dieter Crisman]
#9393: Michael Orlitzky: symbolic sum cannot handle python ints
[Reviewed by Burcin Erocal]
#10489: Ryan Grout, Jason Grout, Nathan Carter: `plot_slope_field` broken
[Reviewed by Aly Deines, Ryan Grout, Benjamin Jones]
#10546: Ron Evans, David Loeffler: implement a custom `cusps()` method for principal congruence subgroups $\Gamma(N)$ [Reviewed by Jan Vonk]
#10658: David Loeffler: Compute local components of modular forms
[Reviewed by Martin Raum]
#10953: Lukáš Lánský, Jeroen Demeyer: `is_regular` yields `StopIteration` error on empty graph [Reviewed by Michael Orlitzky]
#11068: Simon King: Basic implementation of one- and twosided ideals of non-commutative rings, and quotients by twosided ideals [Reviewed by John Perry]
#11313: Keshav Kini: Animated GIF plots should repaint bgcolor after each frame [Reviewed by John Palmieri]
#11375: William Stein, Craig Citro: speed up computation of level one eisenstein series [Reviewed by Craig Citro, William Stein]
#11461: Mike Hansen: make `@parallel` work with class/instance methods
[Reviewed by Karl-Dieter Crisman, Niles Johnson]
#11462: Nathan Carter: Improve `@parallel` documentation to give examples of functions with multiple arguments [Reviewed by Karl-Dieter Crisman]
#11487: Peter Story, John Palmieri: Add graph plotting to reference manual [Reviewed by Karl-Dieter Crisman]
#11575: Alexander Dreyer: Update PolyBoRi to release 0.8.0 [Reviewed by Martin Albrecht]
#11601: David Loeffler: Generic congruence subgroups [Reviewed by Johan Bosman]

#11606: John Perry: simplify constraints in linear programs [Reviewed by Nathann Cohen]
 #11673: Johan Bosman: is_unit not properly implemented for algebraic integers [Reviewed by David Loeffler]
 #11780: Simon King: Creating a polynomial ring over a number field results in a non-unique polynomial ring over the rationals [Reviewed by Martin Albrecht, David Loeffler]
 #11819: John Palmieri: don't use the deprecated 'new' module [Reviewed by Julian Rueth]
 #11822: Aly Deines: Wraps E.reduction(p)(P) so you can call P.reduction(p) [Reviewed by William Stein, Cassie Williams, Jeroen Demeyer]
 #11879: Niels Ranosch: Intersection for more than two ideals [Reviewed by Julian Rueth]
 #12044: William Stein: improve doctest coverage of algebras/free_algebra_quotient*: (add about 30 tests) [Reviewed by Mike Hansen]
 #12045: Peter Story: Add gsl/interpolation.pyx to the reference manual [Reviewed by Karl-Dieter Crisman]
 #12210: Jeroen Demeyer: GF(p) constructor should check primality of p only once [Reviewed by Marco Streng]
 #12239: Nils Bruin: Better conversion to/from ECL bignums [Reviewed by Burcin Erocal]
 #12246: David Coudert: Wiener index without dictionary [Reviewed by Nathann Cohen]
 #12265: William Stein: massively optimize f.change_ring(QQ) for f in ZZ['x'] [Reviewed by Sebastian Pancratz]
 #12323: William Stein, John Palmieri: make docbuild cache corruption error message usable [Reviewed by John Palmieri, William Stein]
 #12330: Jeroen Demeyer: Increase eval_using_file_cutoff for gp interface [Reviewed by Georg S. Weber]

Merged in sage-5.0.beta2:

#6442: Sebastian Pancratz, Michael Orlitzky: Random(?) index error with determinant method [Reviewed by Paul Zimmermann]
 #6569: Michael Orlitzky: sparse integer matrix doesn't raise an error on non-integer index [Reviewed by William Stein]
 #6804: Michael Orlitzky: Permutation.weak_excedences inconsistency [Reviewed by Nathann Cohen]
 #7952: Michael Orlitzky: broken binomial sum (fixed in maxima) [Reviewed by Karl-Dieter Crisman]
 #9054: William Stein, Robert Bradshaw, Maarten Derickx, Moritz Minzlaff, Julian Rueth: create a class for basic function_field arithmetic for Sage [Reviewed by Maarten Derickx, Julian Rueth]
 #10135: Lukáš Lánský: eulerian_circuit() of Graph can't handle multiple edges [Reviewed by Nathann Cohen]
 #10333: Mike Hansen, Anders Buch, Nicolas M. Thiéry, Anne Schilling: An interface to Anders Buch's Littlewood-Richardson Calculator ``lrcalc`` [Reviewed by Nicolas M. Thiéry, Anne Schilling]
 #10899: Lukáš Lánský: is_chordal can raise TypeError [Reviewed by Paul Zimmermann]
 #10959: Lukáš Lánský: BipartiteGraph adding edges between new nodes ignores partition [Reviewed by Nathann Cohen]
 #11235: Maarten Derickx: Make the ipython edit magic command edit the right file and show both files when doing ?? [Reviewed by Marco Streng]
 #11429: Volker Braun: Count integral points without PALP [Reviewed by Andrey Novoseltsev, Jeroen Demeyer]
 #11485: Ege Sertçetin, Ivo Hedtke, Jeroen Demeyer: Turkish Translation of "A Tour of Sage" [Reviewed by Jan Vonk, Julian Rueth, Özge Çelik, Michael Orlitzky]
 #11614: Volker Braun: Make Cython libcpp usable [Reviewed by Jeroen

Demeyer, John Perry]

#11677: Karl-Dieter Crisman, Kenneth Smith, Peter Story: Polygon fill doesn't work [Reviewed by Peter Story, Kenneth Smith, Karl-Dieter Crisman]

#11977: Jason Grout: matrix plots are missing tick marks on one of top or bottom [Reviewed by Karl-Dieter Crisman]

#12068: Florent Hivert, Burcin Erocal: Numerator for symbolic expression shouldn't use maxima [Reviewed by Burcin Erocal, Florent Hivert, Karl-Dieter Crisman]

#12094: Michael Orlitzky: Upgrade Maxima to 5.24.0 [Reviewed by Karl-Dieter Crisman]

#12134: Lukáš Lánský: is_planar(set_pos=True) doesn't work with small graphs [Reviewed by Nathann Cohen]

#12150: Stepan Starosta: upgrade defect() of a finite word [Reviewed by Vincent Delecroix]

#12172: John Palmieri: R doctest starts X11 on OSX [Reviewed by Karl-Dieter Crisman]

#12235: Nathann Cohen: Slow computation of strongly connected components [Reviewed by David Coudert]

#12267: Dan Drake: multiply defined labels when using sagetex with multiline [Reviewed by Dmitrii Pasechnik]

#12309: John Perry: GLPK crashes or hangs on certain inputs [Reviewed by Nathann Cohen]

#12314: Travis Scrimshaw: Latex method for partitions and cores [Reviewed by Anne Schilling]

#12329: Jeroen Demeyer: Remove unneeded dependencies of the Sage library [Reviewed by François Bissey]

#12332: Punarbasu Purkayastha: MixedIntegerLinearProgram().new_variable docs don't mention nonnegativity [Reviewed by Dmitrii Pasechnik]

#12390: William Stein: the documentation for number_of_partitions mentions a bug in PARI that was fixed long, long ago. Delete this. [Reviewed by David Roe]

#12396: David Roe: A few whitespace changes [Reviewed by Robert Bradshaw]

Merged in sage-5.0.beta3:

#7509: William Stein, Wilfried Huss: notebook -- make it possible to debug Python code in the notebook, e.g., something like pdb that works in the notebook [Reviewed by David Roe]

#8458: Lukáš Lánský: iterator for graphs() doesn't return independent graphs [Reviewed by Nathann Cohen]

#8879: Michael Orlitzky: Clean up whitespace in padic hyperelliptic curve file [Reviewed by Karl-Dieter Crisman]

#10175: Volker Braun: symmetric and exterior powers of characters [Reviewed by David Roe]

#10441: Lukáš Lánský: Error creating an empty multi-edge (di)graph [Reviewed by Nathann Cohen]

#10628: Maarten Derickx, Simon King: initialization of matrices from vectors or list of lists can be way faster [Reviewed by Simon King]

#10868: Michael Orlitzky: A wrong (easy) limit [Reviewed by Aly Deines]

#10916: Lukáš Lánský: Multiple loops and edges are lost upon pickling [Reviewed by Nathann Cohen]

#10923: Thierry Monteil, Michael Orlitzky: Bad sign in integral() [Reviewed by Benjamin Jones, Karl-Dieter Crisman]

#10940: Frederic Han: giac interface [Reviewed by David Kohel]

#11483: Michael Orlitzky, Jason Grout: enable abs_integrate package from maxima [Reviewed by Karl-Dieter Crisman]

#11591: Michael Orlitzky: Incorrect results for integrals involving exponential functions [Reviewed by Aly Deines]

#11739: Lukáš Lánský: add_vertex w/o params should return the new vertex [Reviewed by Paul Zimmermann]

#11920: Jeroen Demeyer: Sympow needs to disable fused-multiply-add and

should create datafiles [Reviewed by Leif Leonhardy, Volker Braun]
 #11981: Daniel Krenn: map_coefficients (of multivariate polynomial ring) cannot change base_ring [Reviewed by Julian Rueth]
 #12105: Johan Bosman: RuntimeError: Segmentation fault with nth_root [Reviewed by Karl-Dieter Crisman]
 #12144: William Stein: better document a technical confusing point in the Hidden Markov Model code [Reviewed by Jason Grout]
 #12261: David Roe: Bring Doctest coverage for element_ext_pari.py to 100% [Reviewed by Karl-Dieter Crisman, Aly Deines]
 #12317: Francis Clarke: printing factorisations [Reviewed by Robert Bradshaw]
 #12325: Lukáš Lánský: Eulerian circuits/paths for (di)graphs [Reviewed by Nathann Cohen]
 #12328: François Bissey: GMP_BITS_PER_MP_LIMB is deprecated in gmp/mpir [Reviewed by Robert Bradshaw]
 #12370: Javier López Peña: Change is_singular to use rank instead of determinant [Reviewed by Keshav Kini]
 #12378: Joal Heagney, Nathann Cohen: Graph chromatic_number documentation [Reviewed by Karl-Dieter Crisman]
 #12386: Julien Puydt: [ARM] pickling issues in the matrix_mod2_dense code [Reviewed by Martin Albrecht]
 #12389: Nathann Cohen: Rounding error in graph coloring [Reviewed by David Coudert]
 #12395: David Roe: Change some random variable indexes that cause doctest failures if doctests are run in a different order. [Reviewed by Karl-Dieter Crisman]
 #12412: Jim Stark: TypeError when creating a zero map from a zero dimensional vector space to a positive dimensional vector space [Reviewed by Aly Deines]

Merged in sage-5.0.beta4:

#4498: Karen T. Kohl, Burcin Erocal: Implement a symbolic version of the arg function [Reviewed by Karl-Dieter Crisman, Burcin Erocal]
 #6581: John Perry: Groebner basis not working over symbolic ring [Reviewed by Martin Albrecht]
 #10807: David Loeffler: Modular Symbols trouble restoring saved objects [Reviewed by Marco Streng]
 #10998: Frédéric Chapoton, Christian Stump, Nicolas M. Thiéry: Categories for posets [Reviewed by Franco Saliola, Christian Stump, Nicolas M. Thiéry, Florent Hivert]
 #11003: Mike Hansen: Improve support for lazy_import inside classes [Reviewed by Nicolas M. Thiéry, Florent Hivert]
 #11118: Florent Hivert: Add a cache for .list() method in FiniteEnumeratedSet [Reviewed by Nicolas M. Thiéry]
 #11250: Florent Hivert: Fix link in coercion.rst [Reviewed by Nicolas M. Thiéry]
 #11257: Nicolas Borie: Avoid a coercion when computing an element to the power of 0 [Reviewed by Nathann Cohen]
 #11967: John Palmieri: os x 10.7 Lion -- Sage segfaults on startup when initializing GiNaC [Reviewed by Jeroen Demeyer]
 #12006: William Stein: sage-4.8 and magma-2.18 not playing well together [Reviewed by Marco Streng]
 #12034: William Stein: improve doctest coverage of matrix/benchmark.py from 0% to 100% [Reviewed by Martin Albrecht, Karl-Dieter Crisman]
 #12135: Lukáš Lánský: Multiple loops handling in c_graph [Reviewed by Nathann Cohen]
 #12318: Lukáš Lánský: **kwds in the Graph constructor is confusing [Reviewed by Nathann Cohen]
 #12336: Martin Albrecht: The optional doctests in sage/databases/symbolic_data.py are misformatted so they are never run

[Reviewed by Michael Orlitzky]
 #12344: Martin Albrecht: Interface to GINV [Reviewed by Dmitrii Pasechnik]
 #12353: David Roe: wrong comparison between RealIntervalField and RealField [Reviewed by Paul Zimmermann]
 #12363: Jeroen Demeyer: Upgrade PARI to 2.5.1 [Reviewed by John Palmieri]
 #12366: Jeroen Demeyer: In mpfr, delete old libraries *after* build [Reviewed by Michael Orlitzky]
 #12367: Jeroen Demeyer: Add a script to check whether the compiler supports a certain flag [Reviewed by R. Andrew Ohana]
 #12373: Sonseeahray Rucker, William Stein: Possible typo in Units Module Avogadro constant [Reviewed by William Stein]
 #12385: Keshav Kini: Questionable semantics of DiGraph().all_simple_paths [Reviewed by Nathann Cohen]
 #12416: Jeroen Demeyer: Mercurial assumes that any system with XCode *installed* will use XCode to *build* Mercurial [Reviewed by R. Andrew Ohana]
 #12430: R. Andrew Ohana, Jeroen Demeyer: Add -fwrapv cflag when building Python [Reviewed by R. Andrew Ohana]
 #12464: Florent Hivert, Nicolas M. Thiéry: Improved uniqueness for combinatorial free modules [Reviewed by Nicolas M. Thiéry, Florent Hivert]
 #12474: Jean-Pierre Flori: Doc fix for UniqueRepresentation class [Reviewed by Nicolas M. Thiéry]
 #12478: Andrey Novoseltsev: Typo in an error message of Fan constructor [Reviewed by Volker Braun]
 #12481: Jeroen Demeyer: Fix branch_current_hg() [Reviewed by André Apitzsch]
 #12483: Nicolas M. Thiéry: Workaround #12482 causing history-dependent behaviour of Family [Reviewed by Viviane Pons]
 #12490: Florent Hivert: Create a role :trac: to link to trac ticket in sphinx [Reviewed by Nathann Cohen, Jeroen Demeyer]
 #12492: Keshav Kini: Polyhedron().radius() is nonsensical [Reviewed by Punarbasu Purkayastha]
 #12500: John Palmieri: sagetex: fix self-tests on OpenSolaris [Reviewed by Jeroen Demeyer]

Merged in sage-5.0.beta5:

#4949: John Palmieri: Optionally build spkgs in \$SAGE_BUILD_DIR [Reviewed by Mariah Lenox, Leif Leonhardy, Maarten Derickx, Jeroen Demeyer]
 #8983: Benjamin Jones: erf(0) should return 0 [Reviewed by Burcin Erocal, Douglas McNeil]
 #9362: Lukáš Lánský: Invalidate None as a vertex label. [Reviewed by Paul Zimmermann]
 #9714: Lukáš Lánský, Robert Miller: Graph(..., format='incidence_matrix') doesn't work with graphs that have loops, but G.incidence_matrix() does. So? [Reviewed by Nathann Cohen]
 #10347: Christian Stump: Implementation of is_(skew_symmetrizable) for matrices [Reviewed by Hugh Thomas]
 #10670: Frédéric Chapoton, Florent Hivert: Mobius matrices of posets are integer matrices [Reviewed by Florent Hivert, Nicolas M. Thiéry]
 #11382: Florent Hivert: Speedup subposet and _vertex_to_element [Reviewed by Nicolas M. Thiéry]
 #11384: Volker Braun: Construct the complex of a fan [Reviewed by Andrey Novoseltsev]
 #11603: Rob Beezer: Deprecate eigenspaces for matrices over RDF/CDF [Reviewed by Punarbasu Purkayastha]
 #12025: William Stein: get doctest coverage of monoids/monoid.py to 100% [Reviewed by Michael Orlitzky, Thierry Monteil, Karl-Dieter Crisman]
 #12223: Jeroen Demeyer: the 'sage.rings.complex_mpc' optional extension is broken in sage-4.8.alpha3 and over [Reviewed by François Bissey]
 #12306: Nathann Cohen: Static sparse graphs for fast low-level computations [Reviewed by David Coudert]

- #12356: John Cremona, William Stein: many missing class number 2 orders in CM j-invariant function over quadratic fields [Reviewed by John Cremona, William Stein]
- #12368: Jeroen Demeyer: Make "ratpoints" check whether -fnested-functions is supported by the compiler [Reviewed by R. Andrew Ohana]
- #12423: Jeroen Demeyer: Numpy wrongly assumes that any non-i386 OS X system is PowerPC [Reviewed by William Stein]
- #12475: Sébastien Labbé: Define WordMorphism.__ne__ [Reviewed by Timo Jolivet]
- #12477: Nathann Cohen: Graph.relabel modifies the dictionary given as an input [Reviewed by Nicolas M. Thiéry]
- #12484: Nicolas M. Thiéry: CombinatorialFreeModule's: customizing the order of terms in the output of elements [Reviewed by Florent Hivert]
- #12488: Jeroen Demeyer: Make sage-make_devel_packages not fail if there is nothing to commit [Reviewed by Volker Braun]
- #12489: Nicolas M. Thiéry: Fix equality of combinatorial free module on non totally ordered basis [Reviewed by Florent Hivert]
- #12501: Jeroen Demeyer: Fix packages wanting to run autoconf [Reviewed by Volker Braun]
- #12506: William Stein: fix typo in debug() docstring [Reviewed by Aran Carmon]
- #12507: Benjamin Jones: Mark random symbolic expression doctests with #random [Reviewed by Burcin Erocal]
- #12511: Robert Bradshaw: Unable to take numeric powers of I [Reviewed by Burcin Erocal]
- #12517: William Stein: EllipticCurve(E.a_invariants()) doesn't work [Reviewed by Robert Bradshaw]
- #12522: Jeroen Demeyer: Check assignment of SAGE_ROOT in \$SAGE_ROOT/sage [Reviewed by Volker Braun]
- #12530: Nicolas M. Thiéry: Improve the sage-combinat script to support guards for developpers versions of Sage [Reviewed by Florent Hivert]

Merged in sage-5.0.beta6:

- #7027: R. Andrew Ohana: clean up f2c spkg [Reviewed by Michael Orlitzky]
- #8718: Marc Mezzarobba, Julian Rueth: Polynomial.apply_map() [Reviewed by Daniel Krenn]
- #9130: Karen T. Kohl, Burcin Erocal, Karl-Dieter Crisman: Access to beta function [Reviewed by Benjamin Jones, Burcin Erocal, Karl-Dieter Crisman]
- #9469: Nicolas M. Thiéry: Category membership, without arguments [Reviewed by Florent Hivert]
- #9744: Jason Grout, Michael Boratko, Benjamin Jones: implicit_plot fill option fills entire plot [Reviewed by Karl-Dieter Crisman, Benjamin Jones]
- #10192: Leif Leonhardy, Punarbasu Purkayastha: SageNB broken when SAGE_PATH contains flavours of '.' during installation [Reviewed by Florent Hivert, Jeroen Demeyer]
- #10349: Christian Stump: Implementation of mutations for matrices [Reviewed by Hugh Thomas]
- #10603: Florent Hivert: DisjointUnionEnumeratedSets should not always define Element and _element_constructor_ [Reviewed by Nicolas M. Thiéry]
- #11256: Mario Pernici: Update big_oh for use with multivariate power series [Reviewed by Niles Johnson]
- #11400: Andrey Novoseltsev: Add PointCollection [Reviewed by Volker Braun]
- #11754: Nathann Cohen: Computation of rank-decompositions in Sage [Reviewed by David Coudert, Jeroen Demeyer]
- #12078: Florent Hivert: Add an example of SEE ALSO section in the dev-guide [Reviewed by Nicolas M. Thiéry]
- #12107: John Palmieri: animate: a*b, a+b broken some of the time [Reviewed by Kelvin Li]
- #12161: Ivan Andrus: Make Sage App on Mac work right all the time on OS

X 10.7 Lion, and OS X 10.6 Snow Leopard also [Reviewed by Georg S. Weber]
 #12171: Mike Hansen, Paul Zimmermann, Jean-Pierre Flori: Update MPFI to 1.5.1 [Reviewed by François Bissey]
 #12241: Volker Braun: exp, log, derivative of multivariate power series [Reviewed by Niles Johnson]
 #12280: Volker Braun: Incorrect saturation of integer matrix [Reviewed by William Stein]
 #12333: Francis Clarke: Restore --grep and --grepdoc command line options [Reviewed by William Stein, John Palmieri]
 #12425: Jeroen Demeyer: Twisted uses non-standard C generated by old Pyrex [Reviewed by Volker Braun]
 #12456: Jeroen Demeyer: Numerical noise on OS X 10.7 [Reviewed by Robert Bradshaw, John Palmieri]
 #12476: Florent Hivert, Nathann Cohen: Little fixes for a major speedup of join/meet matrices for FiniteLatticePoset [Reviewed by Florent Hivert, Nicolas M. Thiéry]
 #12487: Jeroen Demeyer: sdist in /tmp/sage-sdist-\$\$/sage-VERSION [Reviewed by Volker Braun]
 #12528: Nicolas M. Thiéry: Little optimizations in CombinatorialFreeModule [Reviewed by Florent Hivert, John Palmieri]
 #12539: David Coudert: graphs and digraphs distances distribution [Reviewed by Nathann Cohen]
 #12548: Jeroen Demeyer: In MPFR, don't delete old libraries [Reviewed by John Palmieri]
 #12558: Volker Braun: Numerical noise in hmm.pyx [Reviewed by Jeroen Demeyer]
 #12563: Jeroen Demeyer: Don't "import site" in sympy's installer [Reviewed by William Stein]
 #12574: John Palmieri: python spkg: don't use xcodebuild to check Xcode version [Reviewed by Jeroen Demeyer]

Merged in sage-5.0.beta7:

#5491: Michael Orlitzky: sylow_subgroup gives syntax error [Reviewed by Daniel Krenn]
 #7071: R. Andrew Ohana: palp spkg ignores global CC and CFLAGS variables [Reviewed by Volker Braun]
 #10075: Karen T. Kohl, Karl-Dieter Crisman: Make log gamma symbolic [Reviewed by Karl-Dieter Crisman, Benjamin Jones]
 #11666: Mike Hansen, Jean-Pierre Flori, Volker Braun: Upgrade MPFR to 3.1.0 [Reviewed by Paul Zimmermann, Jean-Pierre Flori, Volker Braun, Jeroen Demeyer]
 #11683: Julian Rueth, John Cremona: ell_curve_isogeny initialization [Reviewed by Julian Rueth, Frithjof Schulze]
 #11910: Nathann Cohen: Connectivity of complete graphs [Reviewed by Jason Grout, David Coudert]
 #12013: Punarbasu Purkayastha: Fix entropy function in devel/sage/sage/coding [Reviewed by Daniel Krenn]
 #12055: Volker Braun: Upgrade PALP [Reviewed by Andrey Novoseltsev, Jeroen Demeyer, R. Andrew Ohana]
 #12413: Martin Albrecht: Sage crashes in matrix/vector multiplication with zero extents [Reviewed by Volker Braun]
 #12471: Burcin Erocal: real evaluation of symbolic expressions with complex coefficients [Reviewed by Daniel Krenn]
 #12479: Jeroen Demeyer: Clean up sage-spkg [Reviewed by John Palmieri]
 #12495: Karl-Dieter Crisman: Bring plot.py to 100% coverage [Reviewed by John Palmieri]
 #12570: Jeroen Demeyer: remove xcodebuild check from Mercurial [Reviewed by Dmitrii Pasechnik, John Palmieri]
 #12572: Jeroen Demeyer: Add extra memory to pdflatex to build PDF manuals [Reviewed by Minh Van Nguyen]

#12579: John Palmieri: Mechanism to skip self-tests (spkg-check) for certain packages [Reviewed by Jeroen Demeyer]
#12594: William Stein: fix some trivial noise issues on some architecture with hidden markov models [Reviewed by John Cremona]
#12599: Jeroen Demeyer: setuptools: make spkg-install executable [Reviewed by Jean-Pierre Flori]
#12604: Benjamin Lundell: A patch adding .dimensions() to a matrix. [Reviewed by William Stein, Daniel Krenn]
#12608: Jeroen Demeyer: Remove "Dependencies check" from ppl [Reviewed by Volker Braun]
#12611: Marc Masdeu: Add optional argument 'p' in valuation() and ordp() methods for padics [Reviewed by David Roe]

Merged in sage-5.0.beta8:

#9128: Florent Hivert: Sphinx should be aware of all.py to find its links [Reviewed by Andrey Novoseltsev, Nicolas M. Thiéry]
#10296: Simon King: Singular interface wasting time by waiting for the prompt too often [Reviewed by Martin Albrecht]
#10682: Dmitrii Pasechnik: Upgrade maxima to 5.26 [Reviewed by Jean-Pierre Flori, Nils Bruin]
#10817: Christian Stump: implementation of the generalized associahedron as a polyhedral complex [Reviewed by Frédéric Chapoton, Nicolas M. Thiéry]
#10976: Christopher Swenson: computing order of a certain subgroup of a permutation group is double dog slow (compared to Magma) [Reviewed by William Stein]
#12202: Sebastian Pancratz, David Loeffler: Bug in hecke_operator_on_basis [Reviewed by Jan Vonk]
#12392: David Roe: Doctest fix in sage/categories/modules_with_basis.py [Reviewed by Jim Stark]
#12397: David Roe: Change doctests to remove trailing backslashes [Reviewed by Jim Stark]
#12405: Jeroen Demeyer: Add \$SAGE_LOCAL/lib64 to LD_LIBRARY_PATH [Reviewed by Volker Braun]
#12470: Jeroen Demeyer: Remove scripts related to the Debian distribution [Reviewed by Punarbasu Purkayastha]
#12480: David Roe: NTL segfault on OS X 10.7 [Reviewed by William Stein, Jeroen Demeyer]
#12519: Jeroen Demeyer: cvxopt should not add -lcbblas and -latlas on Darwin [Reviewed by Dmitrii Pasechnik]
#12562: Jeroen Demeyer: In Singular spkg-install, disable -pipe on SunOS [Reviewed by John Palmieri]
#12564: Daniel Krenn: documentation of SR wildcard: n instead of i [Reviewed by David Loeffler]
#12581: Karl-Dieter Crisman: Fix contour and other plot default aspect ratio [Reviewed by Benjamin Jones, David Loeffler]
#12585: Hugh Thomas: Bring matrix/matrix0.pyx to 100% coverage [Reviewed by David Loeffler, Karl-Dieter Crisman]
#12616: Nathann Cohen: The LP are not deallocated because of cyclic references ! [Reviewed by Simon King]
#12618: Jeroen Demeyer: Don't delete dist/sage-rsync directory in sage-rsyncdist script [Reviewed by David Roe]
#12625: David Roe: Conversion of pari elements to Sage fails on some negative valuation elements [Reviewed by Xavier Caruso]
#12626: David Coudert: Kautz, Imase and Itoh, and Generalized de Bruijn digraph generators [Reviewed by Nathann Cohen]
#12629: Jeroen Demeyer: Completely disable the LinBox commentator [Reviewed by Martin Albrecht]
#12632: David Loeffler: bug comparing trivial Dirichlet characters [Reviewed by Jonathan Bober]
#12633: Nils Bruin: Fix doc of attach [Reviewed by Justin Walker]

#12635: Jeroen Demeyer: Remove pbuild files [Reviewed by Punarbasu Purkayastha]
#12637: John Palmieri: Follow-up to #4949: don't delete the current working directory [Reviewed by Jeroen Demeyer]
#12642: Nils Bruin: magma_free interface is broken [Reviewed by William Stein]
#12645: Simon King: Fix rst markup for sage/combinat/sf/sf.py (and add to manual) and sage/structure/dynamic_class.py [Reviewed by Nicolas M. Thiéry]

Merged in sage-5.0.beta9:

#8096: Tom Boothby, Robert Bradshaw, Simon King: Speed up parent creation for multiplication of square matrices [Reviewed by Simon King, David Loeffler]
#8241: David Roe: p-adic fields should have Witt Frobenius [Reviewed by Kiran Kedlaya, David Loeffler]
#9367: Michael Orlitzky: S_unit return type is incorrect [Reviewed by David Loeffler]
#9770: Douglas McNeil: SphericalDistribution() is not random [Reviewed by Jason Grout, Jeroen Demeyer]
#11104: Rob Beezer: Add check for normal matrices [Reviewed by David Loeffler]
#11208: Douglas McNeil: Remove numpy warnings in slope field [Reviewed by David Loeffler, Karl-Dieter Crisman]
#11306: Rob Beezer: Upgrade unitary check for RDF/CDF matrices [Reviewed by David Loeffler]
#11464: Marc Masdeu: Maximal orders in QuaternionAlgebra of prime discriminant has a bug [Reviewed by David Loeffler]
#11599: Volker Braun: Wrap fan morphism in toric morphism [Reviewed by Andrey Novoseltsev]
#11709: Hartmut Monien: FareySymbol [Reviewed by Martin Raum, Leif Leonhardy, David Loeffler]
#11790: John Palmieri, Jeroen Demeyer: `sage --sh -c ...` shouldn't print [that many] messages [Reviewed by Jeroen Demeyer, John Palmieri]
#11954: John Palmieri, David Loeffler: improve the documentation of sage/misc/cython.py [Reviewed by David Loeffler, John Palmieri]
#12093: André Aplitzsch: Replace __getslice__ with functionality in __getitem__ in several files (part 2) [Reviewed by François Bissey, David Loeffler]
#12119: André Aplitzsch: Replace remaining __getslice__ with functionality in __getitem__ (part 3) [Reviewed by David Loeffler]
#12151: Johan Bosman, John Cremona: Bug in global_integral_model for elliptic curves over number fields [Reviewed by David Loeffler]
#12159: Volker Braun: Placing triangulation and normal cones [Reviewed by Marshall Hampton]
#12290: Simon King: Fix the hash of matrix spaces and improve its performance [Reviewed by David Loeffler]
#12351: David Loeffler: AttributeError raised by method __eq__ of poset element [Reviewed by Nicolas M. Thiéry, Simon King]
#12362: David Coudert: Improvement of GNP generators for graphs and digraphs [Reviewed by Nathann Cohen]
#12384: David Roe: sage.combinat.e_one_star uses MS-DOS style line breaks [Reviewed by David Loeffler]
#12491: Karl-Dieter Crisman: Bring three more plot3d files to 100% coverage [Reviewed by David Loeffler, John Palmieri]
#12527: Nicolas M. Thiéry: Use cached_method for FractionField.is_exact [Reviewed by David Loeffler]
#12538: Andrey Novoseltsev: Remove NEFPartition [Reviewed by David Loeffler]
#12647: Jeroen Demeyer: Add support for a "sagerc" script [Reviewed by John Palmieri]

#12651: Douglas McNeil, Michael Orlitzky: Don't add each piece of piecewise functions to the legend [Reviewed by Karl-Dieter Crisman]
#12656: Alexander Dreyer: Fix inconsistencies in the PolyBoRi interface [Reviewed by Martin Albrecht]
#12675: William Stein: bug in is_cyclic for abelian groups [Reviewed by Karl-Dieter Crisman]
#12680: Leif Leonhardy: Fix (a single) hardcoded 'g++' in Singular 3-1-3-3 [Reviewed by R. Andrew Ohana]
#12681: Leif Leonhardy: Fix hardcoded 'g++' in Lcalc 1.23 [p9] [Reviewed by R. Andrew Ohana]
#12682: Leif Leonhardy: Fix "hardcoded" 'gcc' in ratpoints 2.1.3 [p2] [Reviewed by R. Andrew Ohana]

Merged in sage-5.0.beta10:

#6588: Nicolas M. Thiéry: Categories for root systems and many misc improvements [Reviewed by Anne Schilling, Mark Shimozone, Florent Hivert]
#10492: Jeroen Demeyer: Rework spkg/install, spkg/standard/deps, spkg/standard/newest_version [Reviewed by John Palmieri]
#11585: Luca De Feo, Florent Hivert: Make deprecated_function_alias print the whole module path when it differs from the original [Reviewed by Rob Beezer]
#11586: David Roe: bug in p-adic extension norm method [Reviewed by Jennifer Balakrishnan]
#11615: John Palmieri: optional doctests: clean up and document "known bug", "optional: requires PKG" [Reviewed by Karl-Dieter Crisman]
#11634: Volker Braun: Base Polyhedron on PPL (by default) [Reviewed by Marshall Hampton, David Loeffler, Andrey Novoseltsev]
#11921: Peter Story, Burcin Erocal: Allow Sympy conversion sign/sgn [Reviewed by Karl-Dieter Crisman]
#12018: R. Andrew Ohana: sage-list-packages will fail if user can't write to SAGE_ROOT [Reviewed by John Palmieri]
#12062: David Roe: FiniteField_ntl_gf2e to Python [Reviewed by David Loeffler]
#12355: Nathann Cohen: Bug in Graph.girth [Reviewed by David Coudert, Jeroen Demeyer]
#12499: Punarbasu Purkayastha: The density() function of a sparse matrix looks at every matrix entry [Reviewed by Rob Beezer]
#12512: Vincent Delecroix: fixed point and periodic point of word morphism [Reviewed by Timo Jolivet]
#12541: Andrey Novoseltsev: Remove Sequence test in span [Reviewed by Rob Beezer]
#12602: Jeroen Demeyer: Rework download/extract code in sage-spkg [Reviewed by John Palmieri]
#12609: John Palmieri, Jeroen Demeyer: Update developer guide for SPKGs [Reviewed by Jeroen Demeyer, John Palmieri]
#12617: R. Andrew Ohana: Update Cremona's table of elliptic curves [Reviewed by John Cremona, Jennifer Balakrishnan]
#12640: William Stein: some special cases of dimension_new_cusp_forms are broken [Reviewed by Jennifer Balakrishnan]
#12644: R. Andrew Ohana: redundant source in elliptic_curves spkg [Reviewed by Jennifer Balakrishnan]
#12670: John Palmieri: Store lazy import caches in .sage/cache/ rather than in .sage [Reviewed by Florent Hivert]
#12678: Nicolas M. Thiéry: Extract a method to get the name of the .rst file corresponding to a python module, and doctest it. [Reviewed by Mike Hansen]
#12689: William Stein: Segfault in solve_left for sparse matrices over ZZ [Reviewed by Douglas McNeil]
#12691: David Roe, William Stein: Create a stopgap warning [Reviewed by R. Andrew Ohana]

#12694: Keshav Kini: Fix four SPKGs with irregular directory structures [Reviewed by R. Andrew Ohana]
 #12698: Jeroen Demeyer: Add a warning not to install packages using the Sage shell [Reviewed by John Palmieri]
 #12701: Jennifer Balakrishnan: Stopgap for 6667 [Reviewed by R. Andrew Ohana]
 #12702: John Palmieri: document "stopgaps" [Reviewed by R. Andrew Ohana]

Merged in sage-5.0.beta11:

#1013: Mike Hansen: Matrix_real_double_dense overrides parent numpy() method with less-functional version [Reviewed by David Loeffler]
 #5646: William Stein: vectors over CDF allow a coercion from scalars [Reviewed by Johan Bosman]
 #7980: Nicolas M. Thiéry: Implement generic support for parents with (multiple) realizations [Reviewed by Simon King, Florent Hivert]
 #8791: Fredrik Johansson, Harald Schilly, David Loeffler: improve doctest coverage of libs/mpmath/ext_main.pyx [Reviewed by David Loeffler, Jeroen Demeyer]
 #11372: William Stein: nasty side effect of a failed simon_two_descent search [Reviewed by Jennifer Balakrishnan]
 #11445: Michael Orlitzky: symbolic integration fails on a very simple test case [Reviewed by Karl-Dieter Crisman]
 #11584: Nathann Cohen: DegreeSequences class ! [Reviewed by David Coudert]
 #11766: Robert Bradshaw: fast_callable always segfaults when input is a polynomial of large degree [Reviewed by Tom Boothby]
 #11800: David Eklund: Problem with points at infinity in hyperelliptic curves [Reviewed by Marco Streng]
 #12069: John Palmieri: fix doctesting of .sage files [Reviewed by Francis Clarke]
 #12102: Jeroen Demeyer: Make bzip2 a standard (instead of base) package [Reviewed by John Palmieri]
 #12262: David Roe, David Loeffler: Bring Doctest coverage for sage/rings/finite_rings to 100% [Reviewed by David Loeffler]
 #12311: John Palmieri: In spkgs, run testcc.sh and testcxx.sh without explicit path [Reviewed by Jeroen Demeyer]
 #12371: Julien Puydt: The graph_decompositions/ code seems to have bounds issues [Reviewed by Nathann Cohen, Jeroen Demeyer]
 #12382: David Roe: Output of a two functions in sage.plot.plot3d.base is nondeterministic due to use of set [Reviewed by Karl-Dieter Crisman]
 #12461: André Aplitzsch: Replace some deprecated python functions in sage/algebras [Reviewed by David Loeffler]
 #12497: Punarbasu Purkayastha: GeneralDiscreteDistribution can segv sage [Reviewed by David Loeffler]
 #12653: Nicolas M. Thiéry: Add support for DiGraph(<dictionary of iterables>) [Reviewed by David Loeffler]
 #12658: David Loeffler: Use the matrix displayhook hack for arithmetic subgroup elements [Reviewed by Martin Raum]
 #12662: David Loeffler: Improve doctest coverage for sage.rings.qqbar [Reviewed by Jim Stark]
 #12665: Mike Hansen: Coercion problem with QQbar [Reviewed by David Loeffler]
 #12667: Mark Shimozono: category root lattice realization issue: infinite loop while trying to reflect to the positive chamber [Reviewed by Anne Schilling]
 #12669: Mike Hansen: Conductor of trivial Dirichlet character has type int [Reviewed by David Loeffler]
 #12674: Valentin Féray: permutation length and size [Reviewed by Mike Hansen]
 #12677: Nicolas M. Thiéry: Make the doctests of sage.misc.sageinspect.sage_getargspec independent of ``Poset`` [Reviewed

by Anne Schilling]

#12684: Mike Hansen: Rename sage/graphs/graph_decompositions/rankwidth/

[Reviewed by David Coudert]

#12687: Jeroen Demeyer: Fix Singular doctest error on OpenSolaris

[Reviewed by Simon King]

#12692: David Roe, Jennifer Balakrishnan: Stopgap for 12509 [Reviewed by R. Andrew Ohana]

#12714: Jeroen Demeyer: Remove f2c [Reviewed by François Bissey]

#12727: William Stein: AA minpoly bug [Reviewed by David Loeffler]

#12742: Jeroen Demeyer: matplotlib must be a dependency of cvxopt

[Reviewed by Julien Puydt]

Merged in sage-5.0.beta12:

#7711: Alex Ghitza: integral() does not reduce coefficients in finite field [Reviewed by Paul Zimmermann]

#7926: Robert Bradshaw, Jennifer Balakrishnan, David Loeffler: Bring coverage of monsky_washnitzer up to 50% [Reviewed by Paul Zimmermann, Jeroen Demeyer]

#11238: Michael Orlitzky: failing calculation of a symbolic integral [Reviewed by Karl-Dieter Crisman]

#11358: William Stein: matrix multiplication over ZZ sometimes gives incorrect results [Reviewed by Douglas McNeil]

#11832: John Palmieri: bug fixes for profile functions for the Steenrod algebra [Reviewed by William Stein]

#11958: Nathann Cohen, Jason Grout: cplex needs another symbolic link [Reviewed by David Coudert]

#11995: Jeroen Demeyer: Length argument for PARI Vec() [Reviewed by Aly Deines]

#12080: Chris Wuthrich: manin constant [Reviewed by William Stein]

#12136: Johannes Klaus Fichte: FVS function in DiGraph returns [0] instead of [] if already directed acyclic [Reviewed by David Coudert]

#12381: David Roe: Typo in sage.combinat.sf.classical [Reviewed by Nathann Cohen, Nicolas M. Thiéry, David Loeffler]

#12638: Jeroen Demeyer: Add some patches to the PARI sources [Reviewed by Johan Bosman]

#12739: Jeroen Demeyer: Put prereq under revision control [Reviewed by John Palmieri]

#12747: Jim Stark: is_R_algebra is useless and wrong and should be deleted [Reviewed by David Loeffler]

#12749: Jim Stark: Raise algebras/free_algebra.py coverage to 100% [Reviewed by David Loeffler]

#12750: Alexander Dreyer: Fix scoping / name look-up issue in PolyBoRi 0.8.0 and support flags from the environment [Reviewed by Leif Leonhardy]

#12755: Jeroen Demeyer: Make coverage remove return types from Cython functions [Reviewed by Mike Hansen]

#12757: David Loeffler: Clean up dead links in sage/modular/ documentation [Reviewed by Alex Ghitza]

#12763: R. Andrew Ohana: elliptic_curves spkg is broken for system installs [Reviewed by François Bissey]

#12764: Rob Beezer: Remove ill-advised doctest for testing normal matrices [Reviewed by John Palmieri]

#12771: David Roe: Kodaira symbol latex is wrong [Reviewed by Mike Hansen]

#12772: William Stein: bug in compact_system_of_eigenvalues for level 1 modular symbols [Reviewed by Fredrik Stromberg]

#12775: David Roe: Small Kodaira symbols typo [Reviewed by David Eklund, Kiran Kedlaya]

#12779: William Stein: customization hook for modular symbols spaces [Reviewed by David Loeffler]

#12788: Nils Bruin: Provide Integer class with a __format__ method [Reviewed by Mike Hansen]

#12793: Jeroen Demeyer: Fix `__cmp__` tests in
 sage/combinat/root_system/type_dual.py [Reviewed by Nicolas M. Thiéry]

Merged in sage-5.0.beta13:

#9563: Mike Hansen: Remove the English-language tutorial's Makefile
 [Reviewed by Jeroen Demeyer]
 #12011: Jeroen Demeyer, John Palmieri: cvxopt: fix illegal BLAS call and
 fix Solaris build [Reviewed by Jeroen Demeyer, John Palmieri]
 #12112: John Palmieri, Jeroen Demeyer: Update the prereq script
 [Reviewed by Jeroen Demeyer, David Kirkby]
 #12220: John Perry, Nathann Cohen: Updated CBC spkg [Reviewed by John
 Perry, Nathann Cohen]
 #12369: Jeroen Demeyer: Add a gcc package [Reviewed by Simon King]
 #12515: Jeroen Demeyer: Upgrade mpc and make it a standard package
 [Reviewed by Jean-Pierre Flori, Volker Braun]
 #12576: John Palmieri: OS X Lion: don't require setting SAGE_PORT
 [Reviewed by Jeroen Demeyer]
 #12613: John Palmieri: Add option "-c" to sage-spkg to run the
 test-suite [Reviewed by Jeroen Demeyer]
 #12631: Jeroen Demeyer: Get rid of spkg/base/dir-0.1-install [Reviewed
 by John Palmieri]
 #12655: Alexander Dreyer: Update PolyBoRi to release 0.8.1 [Reviewed by
 Martin Albrecht, Jeroen Demeyer, Leif Leonhardy]
 #12668: David Loeffler: Delete sage/rings/coerce_python.py [Reviewed by
 Jeroen Demeyer]
 #12713: John Palmieri: Excise MoinMoin [Reviewed by Jeroen Demeyer]
 #12784: John Palmieri: Add comment to deps explaining dependency of
 cvxopt on matplotlib [Reviewed by Karl-Dieter Crisman]
 #12799: Alexander Dreyer: Fix PolyBoRi's dependencies in
 `module_list.py` [Reviewed by Leif Leonhardy]
 #12805: John Palmieri: Do not create SAGE_TESTDIR/tmp [Reviewed by Leif
 Leonhardy]
 #12814: Jeroen Demeyer: Add prereq-0.9-install to .hgignore [Reviewed by
 John Palmieri]

Merged in sage-5.0.beta14:

#8577: Martin Albrecht: Fix ETuple.eadd_p [Reviewed by Mike Hansen]
 #8720: Jason Grout, Mike Hansen, Paul Zimmermann: CC and CDF do not
 display numeric 0 [Reviewed by Paul Zimmermann, Karl-Dieter Crisman]
 #9826: Johan Bosman, Michael Orlitzky: Memory corruption in polynomial
 complex_roots() method [Reviewed by Michael Orlitzky, Johan Bosman,
 Volker Braun]
 #10281: William Stein: Multimodular echelon form over cyclotomic fields
 fails [Reviewed by Martin Raum]
 #10328: Julien Puydt: Flint-1.5.2 with ARM 32-bits [Reviewed by Dmitrii
 Pasechnik]
 #10901: Alex Ghitza: segfault in roots() in wrong ring [Reviewed by
 Michael Orlitzky]
 #10914: Michael Orlitzky: Integration involving abs gives wrong result
 [Reviewed by Karl-Dieter Crisman]
 #11625: John Palmieri: speed up "remove_faces" for simplicial complexes
 [Reviewed by Mike Hansen]
 #12169: Fidel Barrera-Cruz: Adding Harary graphs to graph generators.
 [Reviewed by David Coudert, Nathann Cohen]
 #12347: Punarbasu Purkayastha: make install broken in Sage 4.8 [Reviewed
 by Jeroen Demeyer, Paul Zimmermann]
 #12493: John Palmieri: tol and optional in doctests don't play well
 together [Reviewed by Marco Streng]
 #12536: Anne Schilling, Nicolas M. Thiéry: Implementation of class for

Linear Extensions of a finite Poset [Reviewed by Nicolas M. Thiéry, Anne Schilling]

#12551: Julian Rueth: characteristic() does not work for extensions for function field [Reviewed by Jeroen Demeyer]

#12568: Itai Bar-Natan, Jean-Pierre Flori: make doesn't work properly for targets 'test' and 'micro_release' [Reviewed by Jeroen Demeyer]

#12596: Benjamin Jones: poor documentation of elliptic integrals in functions/special.py [Reviewed by Karl-Dieter Crisman, Jeroen Demeyer]

#12597: Mike Hansen: Error in creating a Permutation Group [Reviewed by Daniel Krenn]

#12620: Karl-Dieter Crisman: problems with bezier3d command [Reviewed by Michael Orlitzky]

#12636: Johan Bosman: 0.is_squarefree() raises a PariError [Reviewed by Jeroen Demeyer]

#12717: Florent Hivert: Add \NN to standard latex constant, fixes a few glitches in LaTeX/HTML output [Reviewed by Nicolas M. Thiéry]

#12766: David Roe: Better plotting for elliptic curves [Reviewed by Kiran Kedlaya]

#12769: David Roe: Better error message when looking up an elliptic curve by nonexistent label [Reviewed by Mike Hansen]

#12791: David Coudert: Running time improvements of some (di)graphs products [Reviewed by Nathann Cohen]

#12796: Nils Bruin: Allow more general evaluation of FDerivativeOperator [Reviewed by Michael Orlitzky]

#12800: Jeroen Demeyer: Upgrade zlib to 1.2.6 [Reviewed by Michael Orlitzky, Julien Puydt, Leif Leonhardy]

#12801: Nils Bruin: substitute_function misses some substitutions [Reviewed by Michael Orlitzky]

#12820: Jeroen Demeyer: OS X Lion: use "clang" as default C compiler [Reviewed by Leif Leonhardy]

#12825: Jeroen Demeyer: Fine-tune auto-detection of whether to install GCC [Reviewed by Dan Drake, Leif Leonhardy]

#12829: Paul Zimmermann, Jeroen Demeyer: Remove <object> cast in real_mpf.pyx [Reviewed by François Bissey]

#12849: Florent Hivert, Jeroen Demeyer: The argspecs of extension function/methods is broken in the Sphinx documentation [Reviewed by Mike Hansen]

#12853: Andrey Novoseltsev: Severe slow-down in elliptic_curve integral_points() [Reviewed by Jeroen Demeyer]

Merged in sage-5.0.rc0:

#5859: Michael Orlitzky: sage -coverageall fails on directories with zero tests [Reviewed by André Apitzsch]

#8119: Robert Bradshaw: Rename change the hash value of some objects [Reviewed by Florent Hivert, Nicolas M. Thiéry, Nicolas Borie]

#11616: Leif Leonhardy, Jeroen Demeyer: Upgrade MPIR to a more recent upstream release [Reviewed by Jeroen Demeyer, Leif Leonhardy, Volker Braun]

#12272: Jeroen Demeyer: More # long time additions [Reviewed by Georg S. Weber]

#12812: Andrey Novoseltsev: Bug in summation of toric divisors [Reviewed by Volker Braun]

#12830: Leif Leonhardy: Work around GCC 4.7.0 bug on ia64 and improve the GMP-ECM spkg [Reviewed by Jeroen Demeyer]

#12833: Nathann Cohen: Crashes and doctests problems with Gurobi [Reviewed by John Perry]

#12837: Leif Leonhardy: MPFR doesn't compile with GCC-4.7.0 on ia64 [Reviewed by Volker Braun]

#12857: Jeroen Demeyer: Split off Graphics class from plot.py [Reviewed by Benjamin Jones, Florent Hivert]

#12888: David Coudert: Set new default parameters for RandomGNP

[Reviewed by Nathann Cohen]

Merged in sage-5.0.rc1:

#12898: Jeroen Demeyer: Update top-level README.txt [Reviewed by William Stein, Karl-Dieter Crisman, David Kirkby, Martin Raum]

#12899: Jeroen Demeyer: Update the "Install from Source Code" docs for sage-5.0 [Reviewed by Nathann Cohen]

#12909: Robert Bradshaw, Jeroen Demeyer: gdm module: don't use /sw and /usr/local paths [Reviewed by Volker Braun]

—

To post to this group, send an email to sage-devel@googlegroups.com

To unsubscribe from this group, send an email to sage-devel+unsubscribe@googlegroups.com

For more options, visit this group at <http://groups.google.com/group/sage-devel>

URL: <http://www.sagemath.org>