

INDEX OF DEFINED TERMS

- algebraic number
 - interval representation, 11
 - order representation, 10
 - real, 7
 - sign representation, 11
- AND-OR tree 15
- atomic formula 2
- auxiliary polynomial 12
- Betti number
 - higher-order, 7
- Betti number 7
- BKR-algorithm 9
- CAD 7, 12, 13
- cell 6
 - $\delta(i)$ -cell, 6
 - decomposition, 6
 - dimension, 6
- cellular decomposition 6
- Collins's algorithm 14
- configuration space 17
- cylindrical algebraic decomposition 7, 12, 13
- decomposition
 - cellular, 6
 - cylindrical algebraic, 7, 12, 13
 - semialgebraic, 6
 - sum-of-squares, 19
 - univariate, 11
- degree
 - of real algebraic number, 8
- discriminant 12
- envelope method 17
- first-order theory of reals 1
 - decision problem, 1, 3
 - existential problem, 3
 - quantifier elimination, 1
- footprint 17
- formal derivative 9
- formula
 - atomic, 2
 - quantifier-free, 2
- Fourier sequence 10
- free space 17
- gate 11
- global nonnegativity problem 18
- invariant 6
- map
 - semialgebraic, 5
- matrix 2
- multivariate decomposition 12
- offset
 - surface, 17
- polynomial for α 8
 - minimal, 8
- prefix 2
- prenex Tarski formula 2
- principal subresultant coefficient 12
- Puiseux series 14
- quantifier elimination problem 3
- real algebraic number 7, 8
 - degree of, 8
- real algebraic set 5
- resultant 12
- roadmap 17
- sample point 6
- section 12
- sector 12
- semialgebraic decomposition 6
- semialgebraic map 5
- semialgebraic set 5
 - connected component of, 6
 - decomposition of, 6
- semidefinite programming (SDP) 19
- sign 6
 - assignment, 6
 - class, 6
 - invariant region, 10
 - variations in, 8
- space
 - free, 17

Sturm sequence 8
Sturm-Sylvester theorem 9
surface
 offset, 17

Tarski formula 2
 extension, 2
 prenex form, 2
Tarski sentence 2
Tarski's theorem 1
Tarski-Seidenberg theorem 6
term 2
theorem proving, geometric 18
Thom's lemma 10
tree
 AND-OR, 15

univariate decomposition 11

variable
 bound, 2
 free, 2

well-parallelizable 11