

Mathcad[®]: Version Comparison Chart

Mathcad is the industry-standard software for solving, documenting, sharing and reusing vital engineering calculations. Its easy-to-use live mathematical notation, powerful communication capabilities and open architecture allow engineers and organizations to optimize their critical design and engineering processes. Mathcad Prime 2.0, the latest version of Mathcad software, is the most advanced and robust version yet, while still allowing users to reuse older worksheets. Mathcad Prime 2.0 combines ease-of-use with superior performance and powerful capabilities.

CAPABILITY	Mathcad 13.0	Mathcad 14.0	Mathcad 15.0	Mathcad Prime 2.0
USER INTERFACE				
Ribbon user interface based on Microsoft [®] Fluent UI				●
WYSIWYG document editing, including headers and footers				●
Alignment grid (fine and standard sizes) for easy alignment of equations and regions				●
Customizable Quick Access Toolbar				●
Drop-down menu user interface with customizable toolbars	●	●	●	
DOCUMENT FEATURES				
Open XML-based file format				●
Batch worksheet converter for MCD and XMCD files				●
Save to XPS				●
Literal subscripts in the middle of variable name				●
Separate overlapping regions command: choice of vertically or horizontally				●
Tab to next or previous math region				●
Add and delete rows and columns in matrices from ribbon				●
Specification tables with multiple variable definitions				●
Header and footer formatting	●	●	●	●
Collapsible and movable areas for sectioning content	●	●	●	●
Region nudging and alignment guides	●	●	●	●
Full Unicode support		●	●	●
Compressed images and files	●	●	●	●
Calculated results saved in XML	●	●	●	●
Print to PDF		●	●	●
NUMERICS AND SYMBOLIC MATH				
New equation editor based on order of operations and precedence				●
Direct Lagrange's notation for derivatives				●
Labels to distinguish variables, constants, functions and units				●
Integration of numerics and symbolics	●	●	●	●



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NUMERICS AND SYMBOLIC MATH (continued)				
New and enhanced symbolic capabilities, including vectorization, solve fully, piecewise integral solutions, new and enhanced keywords and modifiers	●	●	●	●
Explicit substitution of values before symbolic calculation	●	●	●	●
In-line definition and evaluation		●	●	●
Live symbolic (algebraic) evaluation, including expansion, factorization and transforms with keywords and modifier	●	●	●	●
Error tracing	●	●	●	●
UNITS				
Dynamic unit checking				●
Mixed units in matrices, tables and plots				●
Visual distinction between units, constants, functions and variables				●
Full unit support for all applicable functions				●
Temperature and non-multiplicative scaling units (dB, FIF, DMS, etc.)	●	●	●	●
Automatic unit tracking and conversion	●	●	●	●
OPERATORS AND FUNCTIONS				
New file access functions				●
Improved performance of discrete Fourier functions				●
Improved unit support				●
Intel Math Kernel Library (MKL) for numerics, upgraded for improved numeric performance				●
Multithreading for optimized performance				●
Newly designed Excel® Component				●
Support for 64-bit architecture				●
Fully integrated Signal, Image Processing and Data Analysis Extension Pack functions				●
Row operator for matrices				●
Linear and circular convolution operators				●
Polar operator				●
Two derivative operators combined into one operator with multiple placeholders				●
Square root and ⁿ th root operator combined into one operator				●
Two product operators combined into one operator with multiple placeholders				●
Two summation operators combined into one operator with multiple placeholders				●
Scalar operator				●
Improved performance for computational signal and image functions				●
Advanced linear algebra functions based on BLAS/LAPACK libraries	●	●	●	●
New file access functions				●
30 new Design of Experiments (DoE) functions			●	●
Programming operators (loops, assignments)	●	●	●	●
Searchable Function dropdown with functions arranged by categories and alphabetically	●	●	●	●



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OPERATORS AND FUNCTIONS (continued)				
New solvers for ODEs		●	●	●
Operator/Operand highlighting during math editing				●
Jacob function		●	●	
Indefinite integration and limits	●	●	●	●
PLOTTING AND GRAPHING				
More than two markers per plot axis				●
Contour plots	●	●	●	●
3D scatter, curve and surface plots with unit support				●
3D plots: Spin, pan, zoom and reset	●	●	●	●
Axis number formatting		●	●	●
Full color palette for traces, symbols and markers	●	●	●	●
PROGRAMMING AND SOLVERS				
New KNITRO multithreaded optimization solvers for nonlinear optimization				●
Solve block inputs and outputs labeled for easier use				●
Movable solve block construct with local variables				●
Programming operators can be typed in directly				●
New if-then-else programming operators				●
New and improved ODE algorithms (Adams, BDF)		●	●	●
Statespace function		●	●	●
Fast ODE solver for stiff systems and differential algebraic systems (Radau)		●	●	●
Systems of ODEs in solve blocks	●	●	●	●
CUSTOMIZATION, INTEGRATION AND INTEROPERABILITY				
Included (referenced) worksheets can be cached for portability				●
Multilevel included (referenced) worksheets	●	●	●	●
Support for PTC Windchill® 9.1			●	●
Knovel® Math: Mathcad-enabled worksheets and Electronic Books*		●	●	●
PTC Creo® Parametric integration (formerly Pro/ENGINEER®)	●	●	●	●
File I/O component for multiple file formats, importing data as strings and selecting specified columns or rows	●	●	●	●
Microsoft Excel Component	●	●	●	●
Binary file read and write	●	●	●	●
Enhanced Excel data exchange and integration	●	●	●	●
READEXCEL and WRITEEXCEL supporting Excel 2003, 2007 and 2010 file formats			●	●



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RESOURCES, HELP AND SUPPORT				
Mathcad blog	●	●	●	●
Engineering Resources website: Mathcad examples and worksheets by industry			●	●
Help and Documentation translated to ten languages*			●	●
FLEXlm license management	●	●	●	●
References tables, key formulas and constants	●	●	●	●
PlanetPTC® Community – Mathcad Web-based forum	●	●	●	●
Technical support*		●	●	●
Online tutorials and discipline-specific examples	●	●	●	●
Easy-to-use online Help	●	●	●	●
Adaptable examples demonstrating standard analyses and tasks	●	●	●	●
Programming tutorial	●	●	●	●
Mathcad on-site training courses		●	●	●
Web-based training courses		●	●	●
Home use license	●	●	●	●
SUPPORTED SYSTEMS AND REQUIREMENTS				
Microsoft Windows® 7 support			●	●
Microsoft Windows XP support	●	●	●	●
Microsoft Windows Vista® support		●	●	●
Microsoft Office® 2007 and 2010 support			●	●
Microsoft Office 2003 compatibility	●	●	●	●
Supported in ten languages: English, French, German, Italian, Japanese, Korean, Russian, Simplified Chinese, Spanish, Traditional Chinese			●	●
Licensing with maintenance	●	●	●	●
PTC Gold Maintenance Support		●	●	●

To learn more, please visit PTC.com/product/mathcad/

* Maintenance entitlements

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