

Mathcad 15.0 Upgrade Feature Comparison Chart

MATH FORMATS & DISPLAY				VEI	RSION				
	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
SI, MKS, U.S. and CGS unit-balancing with user- defined units	*	*	*	*	*	*	*	*	*
Temperature and non-multiplicative scaling units (dB, FIF, DMS, etc.)							*	*	*
User-defined default units dialog showing base and derived units							*	*	*
Real, imaginary and complex number support	*	*	*	*	*	*	*	*	*
Decimal, binary, octal and hexadecimal display and import	*	*	*	*	*	*	*	*	*
Explicit substitution of values before calculation							*	*	*
In-line statement definition and evaluation								*	*
Math operator display options for assignment, partial derivatives and multiplication		*	*	*	*	*	*	*	*
Operator display options for symbolic evaluations							*	*	*
Engineering and Scientific Notation Display		*	*	*	*	*	*	*	*

BUILT-IN FUNCTIONS	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
80+ core mathematical functions and 10 discrete transform functions	*	*	*	*	*	*	*	*	*
Advanced linear algebra functions based on BLAS/LAPACK libraries							*	*	*
110+ statistics, probability and data analysis functions	*	*	*	*	*	*	*	*	*
18 differential equation and partial differential equation solvers	*	*	*	*	*	*	*	*	*
Root-finding functions	*	*	*	*	*	*	*	*	*
47 matrix creation, lookup, and characteristics functions	*	*	*	*	*	*	*	*	*
28 file access functions	*	*	*	*	*	*	*	*	*
14 expression-type and string functions	*	*	*	*	*	*	*	*	*
18 finance functions		*	*	*	*	*	*	*	*
Complex arguments for Bessel/Hankel and truncation functions					*	*	*	*	*
Enhanced data fitting functions					*	*	*	*	*
New data fitting algorithm and automatic derivatives							*	*	*
1D and 2D Correlation						*	*	*	*
Logarithmically-spaced point generators						*	*	*	*
Until function for iteration	*					*	*	*	*
Jacob function								*	*
30 Design of Experiments functions									*

BUILT-IN OPERATORS	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
35+ arithmetic, vector and matrix operators	*	*	*	*	*	*	*	*	*
1st and n th derivative, definite and indefinite integration, and limits	*	*	*	*	*	*	*	*	*
9 evaluation operators	*	*	*	*	*	*	*	*	*
10 boolean operators		*	*	*	*	*	*	*	*
User-defined operators		*	*	*	*	*	*	*	*
Programming operators (loops, assignments, etc.)	*	*	*	*	*	*	*	*	*
Namespace operator						*	*	*	*
Del operator (gradients)								*	*

SOLVING CAPABILITIES	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
Define and evaluate variables and functions numerically or symbolically	*	*	*	*	*	*	*	*	*
Linear and non-linear system solving and optimization solve blocks	*	*	*	*	*	*	*	*	*
Solve systems with hundreds of variables and constraints, in matrix or individual equation notation		*	*	*	*	*	*	*	*
Fast ODE solver for stiff systems and differential algebraic systems (Radau)				*	*	*	*	*	*
Systems of ODEs in solve blocks			*	*	*	*	*	*	*
New and improved ODE algorithms (Adams, BDF)								*	*
Statespace function								*	*
1D PDE solvers in solve blocks					*	*	*	*	*
Live symbolic (algebraic) evaluation, including expansion, factorization, transforms	*	*	*	*	*	*	*	*	*
New and enhanced symbolics capabilities, including vectorization, solve fully, piecewise integral solutions, new and enhanced keywords, etc.								*	*
Multiple root-finding algorithms, including symbolic methods		*	*	*	*	*	*	*	*
Local functions in programs						*	*	*	*

APPLICATION CUSTOMIZATION & EXTENSIBILITY	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
User-defined functions created in C, C++ or FORTRAN	*	*	*	*	*	*	*	*	*
Embed or link any OLE-compliant application or ActiveX control	*	*	*	*	*	*	*	*	*
Use OLE Automation & Visual Basic [®] to call Mathcad	*	*	*	*	*	*	*	*	*
Software Development Kit (SDK) for building custom components			*	*	*	*	*	*	*
Mathcad Custom Controls			*	*	*	*	*	*	*
Scriptable object component for reuse and deployment of components			*	*	*	*	*	*	*
Automation interface for scripting Mathcad worksheets				*	*	*	*	*	*
Mathcad Automation access from internal scriptable objects					*	*	*	*	*
Automation access to XML Metadata and region content						*	*	*	*
Web controls (scriptless, save state)						*	*	*	*
Previous version compatibility switches							*	*	*

GRAPHING &VISUALIZATION	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
Bar charts, x-y, polar, vector, contour, scatter, and surface plots	*	*	*	*	*	*	*	*	*
Animation capabilities	*	*	*	*	*	*	*	*	*
Trace & Zoom	*	*	*	*	*	*	*	*	*
2D and 3D QuickPlot™ and plot annotation		*	*	*	*	*	*	*	*
Open GL™ 3-D graphs	*	*	*	*	*	*	*	*	*
Image Viewer with support for BMP, GIF, JPG, PCX, TARGA, PGM, TIFF			*	*	*	*	*	*	*
2nd Y-axis for 2D plots						*	*	*	*
Positionable legends for 2D plots						*	*	*	*
Grid and marker color selectors						*	*	*	*
Full color palette for traces, new symbols, symbol frequency							*	*	*
Axis number formatting			-					*	*
Negative radii on polar plots								*	*
Box plots									*
Effects plots									*
Pareto plots									*
FILE FORMATS, PUBLISHING & WEB SUPPORT	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
Save as XML						*	*	*	*
Compressed images and files						*	*	*	*
Calculated results saved in XML						*	*	*	*
Save as HTML	*	*	*	*	*	*	*	*	*
HTTP File Open support					*	*	*	*	*
Save files in older file formats			*	*	*	*	*	*	*
Save to RTF, retaining region positioning for MS Word					*	*	*	*	*

DOCUMENT/TEXT EDITING FEATURES	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
Customizable spell checker with technical terms	*	*	*	*	*	*	*	*	*
Document templates and style sheets	*	*	*	*	*	*	*	*	*
Hyperlinking	*	*	*	*	*	*	*	*	*
Advanced Find and Replace in text and math	*	*	*	*	*	*	*	*	*
Region layering, bordering and alignment controls		*	*	*	*	*	*	*	*
Document ruler with indenting support		*	*	*	*	*	*	*	*
Text and equation highlighting, bordering and color selection		*	*	*	*	*	*	*	*
Header and footer formatting		*	*	*	*	*	*	*	*
Hidden, collapsed, and locked areas		*	*	*	*	*	*	*	*
Live math within text regions		*	*	*	*	*	*	*	*
Indexing and hyperlink-checking for e-books			*	*	*	*	*	*	*
Document protection				*	*	*	*	*	*
Region nudging and alignment guides					*	*	*	*	*
Metadata, automatic provenance, annotations						*	*	*	*
Autofilled delete lines						*	*	*	*
Custom characters toolbar							*	*	*
Longarea names, change referenced files in Properties							*	*	*
Full Unicode support								*	*
Comprehensive math font								*	*

USABILITY FEATURES	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
Automatic unit tracking and conversion	*	*	*	*	*	*	*	*	*
Automatic recalculation	*	*	*	*	*	*	*	*	*
Autosave							*	*	*
Program debugging							*	*	*
Visual comparison of worksheets								*	*
Customizable toolbars and interface	*	*	*	*	*	*	*	*	*
Easy-to-use equation editor	*	*	*	*	*	*	*	*	*
Error Tracing					*	*	*	*	*
Unit-specific error messages							*	*	*
Function dialog box with functions arranged in categories		*	*	*	*	*	*	*	*
Algorithm AutoSelect for integration, optimization, and ODE solve blocks		*	*	*	*	*	*	*	*
Multi-region property settings				*	*	*	*	*	*
Multi-region Undo					*	*	*	*	*
Redefinition warnings					*	*	*	*	*
Mathcad User's Guide on Start menu					*	*	*	*	*
Available in English, French, German, Japanese	*	*	*	*	*	*	*	*	*
Available in Italian, Spanish, Korean, Chinese (Simplified, Traditional)								*	*

CONNECTIVITY WITH OTHER APPLICATIONS	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
Support for Microsoft SharePoint Server					*	*	*	*	*
Pro/ENGINEER [®] Integration							*	*	*
MathWorks MATLAB® 4 - 6.5	*	*	*	*	*	*	*	*	*
Autodesk [®] AutoCAD 2000/2001i/2002		*	*	*	*				
Microsoft [®] Excel		*	*	*	*	*	*	*	*
Intergraph [®] SmartSketch 4				*	*	*	*	*	*
Support for Windchill 9.1								*	*
Support for Windchill ProductPoint								*	*
Knovel Math									*
Kornucopia software									*
Truenumber									*

DATA EXCHANGE FEATURES	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
Data filters for .mat files, Excel files, Lotus 1-2- 3, ASCII & others	*	*	*	*	*	*	*	*	*
Mixed format import, cut and paste (strings, complex, engineering notation, real numbers, Excel) to matrices					*	*	*	*	*
Real-time data acquisition from National Instruments [®] and Measurement Computing analog boards			*	*	*	*	*	*	*
Microsoft [®] Access, FoxPro and SQL-supported databases			*	*	*	*	*	*	*
WAV file read, write and information functions			*	*	*	*	*	*	*
File I/O component for multiple file formats, importing data as strings, and selecting specified columns or rows					*	*	*	*	*
Support for UserEFI strings					*	*	*	*	*
Improved APPENDPRN function					*	*	*	*	*
Binary file read and write					*	*	*	*	*
Enhanced Excel data exchange and integration					*	*	*	*	*
Data Wizard component with preview, text, binary and Excel import settings						*	*	*	*
Function to read Excel and fixed-width files						*	*	*	*
READEXCEL and WRITEEXCEL supporting Excel 2007 file format									*
READCSV and WRITECSV using csv format									*

RESOURCES	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
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 with Search and Index		*	*	*	*	*	*	*	*
Adaptable QuickSheets demonstrating standard analyses and tasks		*	*	*	*	*	*	*	*
New Solving and Optimization E-book								*	*
Localized Help and Documentation								*	*
Online Developer's Reference			*	*	*	*	*	*	*
FLEXIm license management								*	*
Programming tutorial							*	*	*
Rewritten, reorganized and reformatted Help						*	*	*	*

MICROSOFT STANDARDS AND OS SUPPORT	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
Microsoft [®] Windows 95	*	*	*						
Microsoft® Windows NT 4 (Service Pack 6 or higher)	*	*	*	*	*				
Microsoft® Windows 98 (Service Pack 2)	*	*	*	*	*				
Microsoft® Windows XP support				*	*	*	*	*	*
Microsoft® Windows ME support			*	*	*				
Microsoft® Office 2000 compatibility			*	*	*	*	*		
Microsoft® Office 2003 compatibility							*	*	*
Microsoft® Windows XP/Office XP support				*	*	*	*	*	*
Microsoft® Windows Vista support								*	*
Microsoft® Windows 7 support									*
Microsoft® Office 2007 support									*
ActiveX support		*	*	*	*	*	*	*	*

ADDITIONAL TOOLS AVAILABLE	8	2000	2001	2001 <i>i</i>	11	12	13	14.0	15.0
Civil, Electrical, and Mechanical Engineering Libraries	*	*	*	*	*	*	*	*	*
Knovel Math –comprehensive Roark's and Hicks' reference content									*
Data Analysis Extension Pack					*	*	*	*	*
Signals, Image Processing, and Wavelets Extension Packs	*	*	*	*	*	*	*	*	*
Solving and Optimization Extension Pack	*	*	*	*	*	*	*		
Licensing with maintenance	*	*	*	*	*	*	*	*	*
PTC Gold Maintenance Support	*	*	*	*	*	*	*	*	*
Mathcad On-site Training Courses					*	*	*	*	*
Web-based Training Courses		*	*	*	*	*	*	*	*
VisSim Plus					*	*	*		