

# Mathcad® Prime 1.0

## THE STANDARD FOR ENGINEERING CALCULATIONS

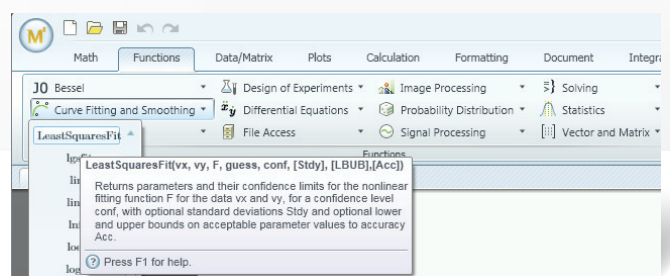
Mathcad, a PTC product, is the industry standard software for engineering calculations. Its easy-to-use, units-aware, live mathematical notation, powerful capabilities and open architecture allow engineers and organizations to streamline critical design processes. Mathcad presents calculations, text and images in an understandable format enabling knowledge capture, reuse and design verification which results in improved product quality and faster time-to-market.

The newest edition, Mathcad Prime 1.0, provides an enhanced, task-based interface for intuitive usability. Mathcad Prime 1.0 delivers a document-centric calculations environment, that enables users to create complex, professional engineering design documents quickly and easily. Plus, the new Mathcad Prime 1.0 allows advanced engineering math exploration, along with access to over 600 functions, so users can display, manipulate, analyze and plot data with full units support throughout the application. Additionally, Mathcad Prime 1.0 offers seamless integration with other PTC products, such as Creo™ Elements/Pro™ and Windchill®, delivering increased productivity, improved process efficiency, and better collaboration between individuals and groups.

### How Mathcad Prime 1.0 works

Mathcad Prime 1.0 lets you type equations just as you would write them on a blackboard or in a reference book. There's no difficult programming language or syntax to learn; you simply type in your equations and see the results. You can use Mathcad Prime 1.0 equations to solve just about any math problem you can think of. And, you can place text anywhere on the worksheet to document your work.

Mathcad Prime 1.0 lets you easily set your preferred unit system, and freely mix units of measure, ultimately maintaining dimensional integrity and preventing unit mistakes. You can work in your preferred unit system, or switch to another system for a particular set of equations.



Mathcad Prime 1.0 features the new task ribbon for intuitive usability.

Mathcad Prime 1.0 simplifies and streamlines calculations documentation, which is critical to optimizing the design process and meeting product requirements and quality assurance standards. It combines equations, text and graphics in a presentable format, making it easy to keep track of the most complex calculations for verification and validation. And, when used in conjunction with PTC's Windchill Product Lifecycle Management (PLM) software, engineering calculations can be easily managed, standardized and shared across the organization.

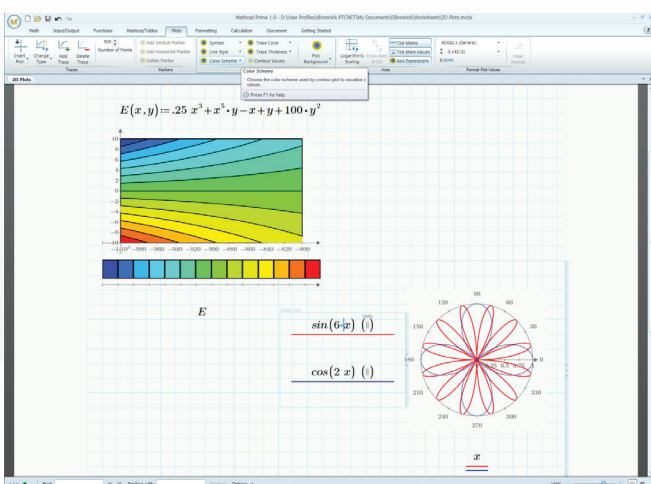
### Key features and benefits

#### Math editing

- Use of standard math notation
- Improved Equation Editor – easy to learn and intuitive (type what you see) Equation Editor
- Menu/palette-driven entry

#### Calculation

- Numeric evaluation
- Automatic update of results
- Support for real and complex numbers



Complex plots and graphs can be accomplished with the task ribbon in Mathcad Prime 1.0.

#### Programming

- 12 programming operators
- Seamless integration of programming operators and equations

#### Document creation and editing

- Document-centric, WYSIWYG approach
- Text boxes, blocks, images, tables, plots and equations combined in single document
- Engineering paper-like grid for easy alignment of text and equations
- WYSIWYG editing of headers and footers
- Find/replace in text and equations
- Document view and draft view
- Save as XPS

#### Functions and operators

- 10 arithmetic operators
- 8 calculus operators
- 10 comparison operators
- 2 definition and evaluation operators
- 4 engineering operators
- 10 vector and matrix operators
- 40 Bessel functions
- 5 complex number functions
- 24 curve fitting and smoothing functions
- 21 statistics
- 19 data analysis functions
- 28 Design of Experiments (DoE) functions

### Functions and operators (continued)

- 18 differential equation functions
- 7 solving functions
- 5 expression type functions
- 33 file access functions
- 70 image processing functions
- 18 finance functions
- 11 Fourier transform functions
- 4 graphing functions
- 12 hyperbolic functions
- 17 interpolation and prediction functions
- 5 log and exponential functions
- 47 vector and matrix functions
- 5 number theory/combinatorics functions
- 6 piecewise continuous functions
- 17 probability density functions
- 35 probability distribution functions
- 19 random numbers functions
- 61 signal processing functions
- 4 sorting functions
- 11 string functions
- 19 special functions
- 15 trigonometric functions
- 8 truncation and round-off functions
- 6 wavelet functions

“The tutorials are simply brilliant...they are easy to follow and quickly invoke relevant software capabilities. The new matrix selection and setup is vastly superior to the previous Mathcad releases. Easy, user-friendly and intuitive. The plot/graphing is also brilliant.”

– Martin Van Wyck, Project Manager  
Metallurgical Processing, Bureau Veritas

### Units

- Comprehensive unit support in operator, functions, solve blocks, tables, vectors/matrices, and plots
- Automatic unit checking and conversion
- Automatic unit resignation and highlighting
- 185 predefined units
- Support for SI, USGS and CGS unit systems

### Plotting and graphing

- XY plots: line, column, bar, stem, waterfall, error, box, effects
- Polar plots
- Contour plots
- Extensive formatting options

### Solving

- Textbook-like Solve Block Format for solving systems of linear and non-linear equations
- Solve Blocks for systems of ordinary differential equations
- Solve Blocks for solving optimization problems
- NUMOL function for systems of partial differential equations

### Vectors and matrices

- 10 operators and 27 functions
- Automatic, element-wise application for many functions and operators
- Easy and intuitive editing of vectors and matrices

### Data

- Tabular form for defining parameters and constants
- 33 file access functions

### User Interface

- Ribbon-base user interface (Microsoft Office Fluent UI)
- Extensive tooltips for all available functionality

### Integration and interoperability

- Creo Elements/Pro 5.0
- Windchill 9.1
- Windchill ProductPoint® 1.1
- Mathcad 7 through Mathcad 15.0 to Mathcad Prime 1.0 Worksheet Converter

### Resources, help and support

- Integrated Help with live examples
- Integrated access to LearningConnector
- PTC Standard and Sustained Maintenance Support Program
- PlanetPTC™ Online Community

To understand the differences in capabilities between Mathcad Prime 1.0 and Mathcad 15.0, please visit the [Mathcad compare page](#), so you can choose the engineering calculations software that best meets your needs.

### Specifications

- Windows XP (SP3), Windows Vista®, Windows 7 (32/64 bit)
- Available in English, French, German, Japanese, Italian, Spanish, Korean, and Chinese (Simplified and Traditional)
- Microsoft Excel® 2003, 2007
- Supports Microsoft Office (2007 only)
- Converts .mcd and .xmcd file types to new .mcdx type
- Supports OpenXML format .mcdx files only.
- Easier license acquisition and management

### Learn more about Mathcad

For more information on Mathcad, visit [www.ptc.com/go/mathcad](http://www.ptc.com/go/mathcad)

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