ptc mathcad prime 5.0®

Mathcad Prime 5.0: Plotting Your Success

Engineering calculations help drive excellence in product design. They predict your design's behavior, driving critical parameters and dimensions. You and your team need a single tool that allows you to do accurate calculations easily, enhance the visualization of your data with 2D plotting, and then protects your intellectual property (IP). With PTC Mathcad, it's easy.

PTC Mathcad has all your engineering notebook's ease-of-use and familiarity with live mathematical notation and units intelligence. Most importantly, the calculation capabilities produce far more accurate results than a spreadsheet can provide. And you can present your calculations with plots, graphs, text, and images in a single, professionally-formatted document. Nobody needs specialized skills to understand PTC Mathcad data.

Take advantage of PTC Mathcad's Prime's exciting capabilities in helping to protect your intellectual property, interoperability with third-party applications, and usability enhancements such as equation breaking, 2D plot visualization, and improved document performance.

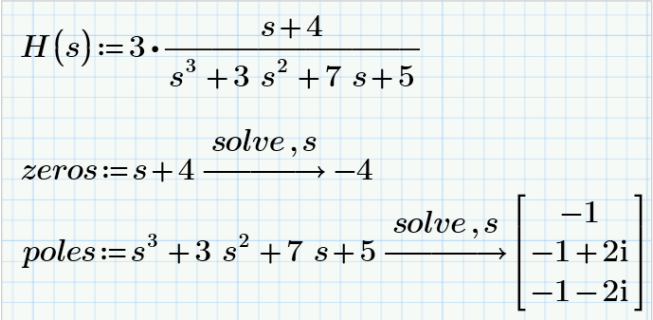
When your intellectual property is shareable, easily readable, and lives in one place, you've moved from managing information to making it a source of competitive advantage.

Key Benefits

- Securely communicate design intent and engineering knowledge
- Intuitively construct calculations using standard math notation
- Author professional quality documents supported by live math, plots, text and images
- Repurpose standardized calculations to streamline next generation product development and avoid the need to recreate calculations
- Increase productivity with full units support throughout calculations
- Get instant access to comprehensive learning materials and tutorials from within the product to get productive faster

Calculation

- Calculate using standard operators for algebra, calculus, logic, linear algebra, and more
- Evaluate, solve & manipulate expressions symbolically
- Support for various data types including:
  - Scalar, vectors and matrices
  - Complex numbers



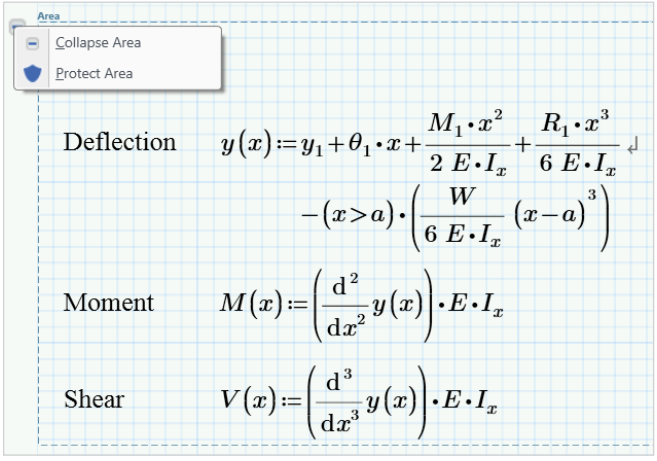
Units management system

- Comprehensive unit support for numeric and symbolic calculations, functions, solve blocks, tables, vectors/matrices, and plots
- Automatic unit checking and conversion
- Leverage hundreds of predefined units
- Define custom units

$$\begin{bmatrix} 125\ Pa \\ 9.8\ \frac{m}{s^2} \\ 20.2\ A \end{bmatrix} \cdot \begin{bmatrix} 25\ m^2 \\ 4.75\ s \\ 16\ V \end{bmatrix} = \begin{bmatrix} 3125\ N \\ 47\ \frac{m}{s} \\ 323\ W \end{bmatrix}$$

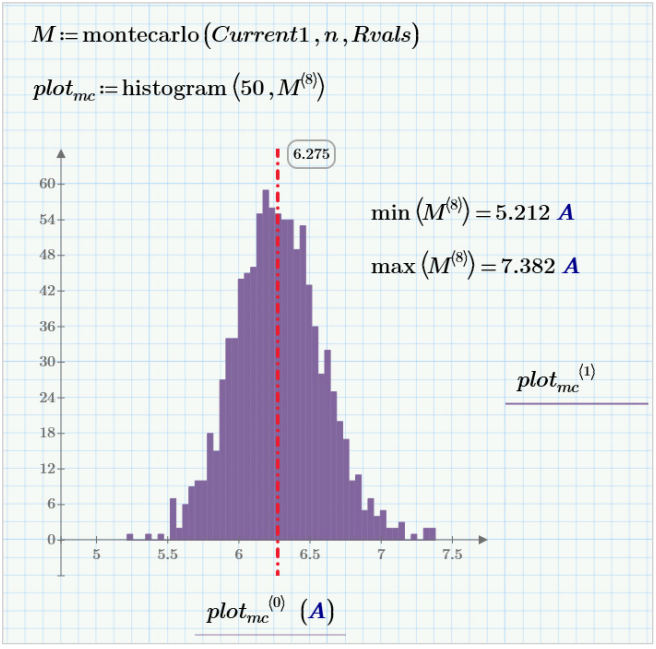
Content protection

- Prevent accidental or intentional modification of specified calculations with password protection
- Lock content to prevent viewing and hide proprietary information



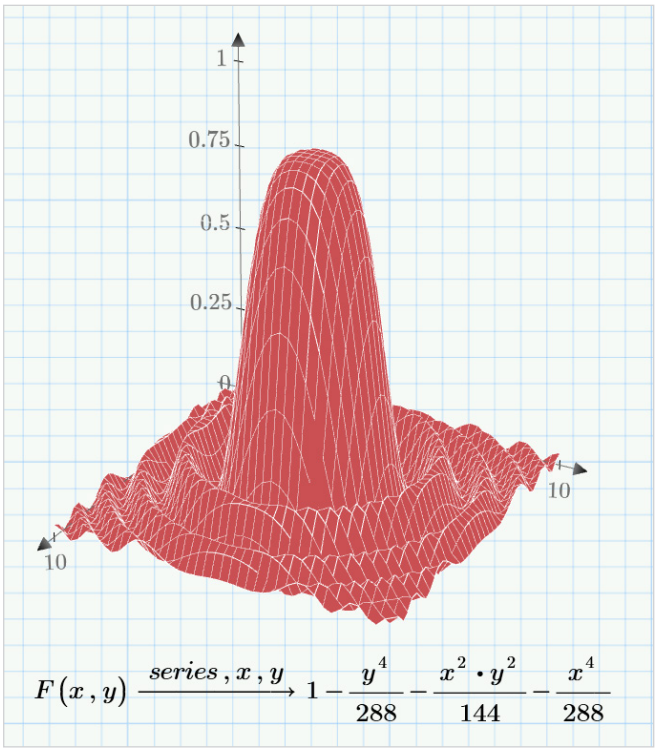
Functions

- Curve fitting and smoothing
- Data analysis and statistics
- Design of experiments
- Signal and image processing
  - Fourier transforms
  - Digital filtering
- File Access
- And hundreds more



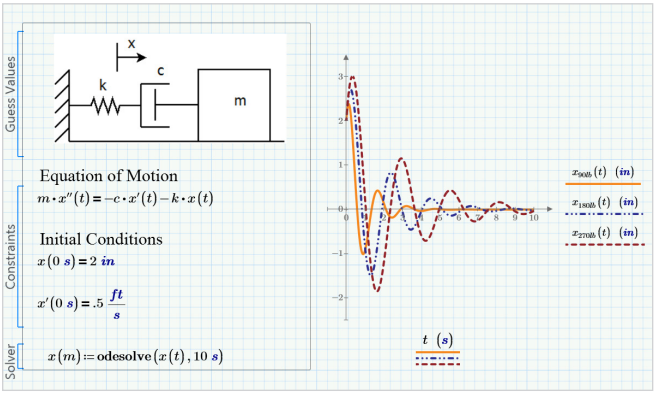
Plotting and graphing

- X Y plots
  - scatter, line, column, bar, stem, waterfall, error, box, and effects
- 3-D plots
- Polar plots
- Contour plots



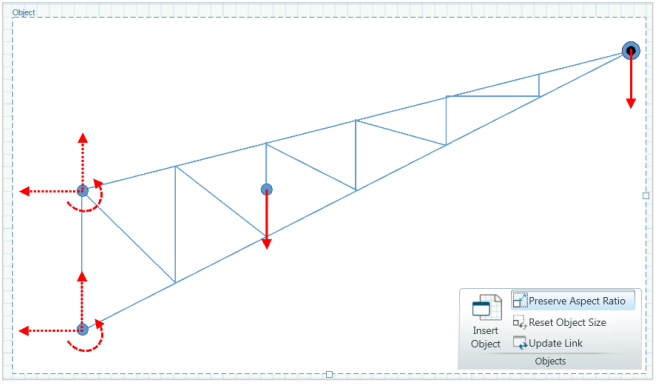
Solving

- Solvers for linear and nonlinear systems of algebraic and differential equations
- Optimize constrained systems using the robust and powerful KNITRO® engine
- Display symbolic solutions to systems of equations



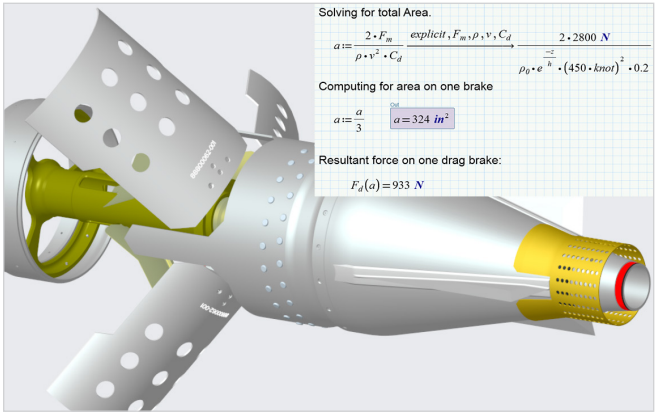
Data

- Integrate Microsoft® Excel® component to enable bidirectional data passing with PTC Mathcad worksheet content
- Connect to external data files using read and write functions for various file formats including:
  - Text (.txt)
  - Excel (.xlsx, .xls, .csv)
  - Image (.bmp, .jpg)
- Incorporate embedded content from external applications (OLE)



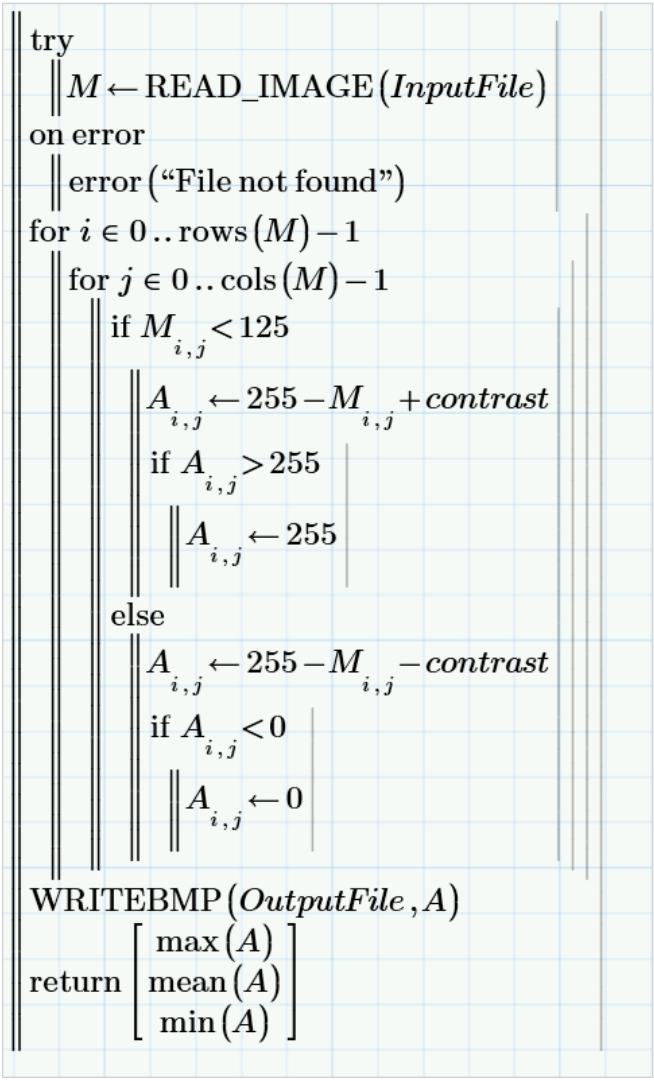
Engineering Notebook, Powered by PTC Mathcad

- Document design intent by embedding PTC Mathcad worksheets directly within a PTC Creo part or assembly
- Drive PTC Creo models from PTC Mathcad results
- Reference PTC Creo parameters as inputs to PTC Mathcad calculations



Programming

- Add logic using familiar programming operators and natural math notation
- Loops (for, while)
- Conditional statements (if, else if, else)
- Error catching (try/on error)
- Build recursive functions



Please visit the PTC Support page for the most up-to-date platform support and system requirements.

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