



PTC® Mathcad® Prime® 3.0 FAQs

1. What is PTC Mathcad Prime 3.0?

PTC Mathcad Prime 3.0 is the latest release of PTC Mathcad, 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. Unlike spreadsheets, word processing, and presentation software, PTC Mathcad has the ability to easily display calculations, text, data, and images in a single worksheet—enabling knowledge capture, data reuse, and design verification. The result improves product quality with faster time-to-market and easier compliance with regulations.

PTC Mathcad Prime 3.0 has significantly enhanced calculation capability to allow more complex problems to be solved faster. Building on the industry leading capabilities in the previous release, such as providing 3-D graphing, integration with Microsoft® Excel®, collapsible areas, and symbolic (CAS) capabilities, it provides a document-centric environment where users can create complex, professional engineering design documents quickly and easily with full units support.

PTC Mathcad Prime 3.0 offers hundreds of built-in mathematical functions along with the unlimited ability to define your own. It provides the ability to solve equations both numerically and symbolically, to solve complex systems of equations, as well as offering enhancements in knowledge capture, standardized templates and formatting, and extended integration with PTC Creo and PTC Windchill. The result is increased productivity, improved process efficiency, and better collaboration between individuals and teams.

2. What new capabilities have been added to PTC Mathcad Prime 3.0?

PTC Mathcad Prime 3.0 represents a significant upgrade with powerful new capabilities, offering users overall enhancements in the following areas:

- **Documentation enhancements – Supports adherence to standards for calculations and documentation, making it easier to reuse calculation workflows**
 - Templates
 - Math in text
 - Math formatting
 - Copy/Paste to external apps
- **Custom Functions – Reuse existing algorithms already coded in C++, C, Fortran, etc., and extend PTC Mathcad functionality beyond what is provided ‘out of the box’**
- **Global Definition operator – Define constants and parameters that can be used anywhere in the worksheet**
- **Numeric enhancements – New matrix decomposition and surface interpolation functions that are up to 100 times faster and provide extended capabilities**
- **Improved conversion fidelity – Ensures accuracy when converting worksheets from previous versions**
- **Usability improvements – More options to give the user better control over their calculations**
 - Overtyping math editing
 - Contour plot improvements
 - Matrices plotted as a waterfall by default



3. What are the key benefits and details of PTC Mathcad?

PTC Mathcad brings enhanced capabilities and benefits building on each of the previous releases. Here are the key ones from each release that increase the power of PTC Mathcad.

Key capabilities of PTC Mathcad	Benefits to user	Benefits to organization
Global Definition New in PTC Mathcad Prime 3.0	Allows you to define and evaluate a variable anywhere in your worksheet without having to worry about calculation order.	This makes both worksheet management and documentation presentation easier – constants and parameters can be defined as ‘true’ throughout your worksheet and can be placed close to the end result of the calculation to support ‘what if’ analyses, as well as for clear and concise presentation of your work.
Math in Text New in PTC Mathcad Prime 3.0	PTC Mathcad allows math and text to be seamlessly integrated to provide a natural text flow that increases the readability of your worksheet definitions, design notes and explanatory text. Live math can be inserted, pasted and moved anywhere within text to augment worksheet presentation with content that will update on upstream changes in calculation.	By enabling math within text, you have much greater scope with your worksheet presentation.
Templates New in PTC Mathcad Prime 3.0	Create a template that includes all of the content you want to use and simply reuse that as the basis for every new worksheet you create. Documents can be standardized, IP can be captured and your desired format can be reused as often as you need. PTC supplies several default templates as examples that can be used as is or as a basis for your own templates.	Templates save you time and effort by providing the ability to define and organize desired content in such a way as to allow simple and structured re-use in creating new worksheets. Users can create, edit and store personal or company defined templates in locations easy to configure and access through the software.
Math Formatting New in PTC Mathcad Prime 3.0	Math font, font size, color and highlight can be changed to suit personal, company or industry standard documentation expectations. You can now do things such as direct reader focus by highlighting important results, separate specific calculation elements by assigning them different colors and match text formatting to produce a more coherent reading experience for users of your worksheet.	With live math formatting capability, PTC Mathcad allows even greater worksheet documentation flexibility. With both text and math formatting you get the full suite of formatting options for all your documentation needs.
Custom Functions New in PTC Mathcad Prime 3.0	There are hundreds of built-in functions that cover a multitude of engineering disciplines. With Custom Functions you can now write and integrate your own functions, customizing your working environment to suit whatever engineering needs you have.	Whether you need specialized niche-market engineering content, use personally modified versions of existing functions or have an idea for a new function to optimize whatever engineering problem you may be working on, Custom Functions allows you to write and install those functions with the PTC Mathcad environment so you can access them in the worksheet and use them alongside existing content.
Numeric Enhancements New in PTC Mathcad Prime 3.0	New matrix decompositions functions, LU, QR and Cholesky replace the old lu, qr and cholesky counterparts. The new functions are up to 100 times faster, provide extended capability (such as pivoting, and complex number support) and return the result in easier to work with format.	Continuous improvement in calculation capability allows users to evaluate a greater number of and more complex and computationally demanding cases in less time, ultimately leading to more optimal designs.



Key capabilities of PTC Mathcad	Benefits to user	Benefits to organization
Excel component	Users will enjoy easier interaction and tighter integration with Microsoft Excel, allowing them to access and utilize data from existing spreadsheets.	Allows for seamless use with existing spreadsheets, for better productivity and visibility, as well as better integration with legacy systems. There is no need to convert data when introducing PTC Mathcad.
Symbolic algebra/calculation (CAS)	Often formulas must be manipulated before they can be applied to a specific case. PTC Mathcad's symbolic calculation functionality automates this process, allowing users to set up the right form of the formula before plugging in the numbers. Patented live update of mixed symbolic and numeric calculations helps users keep documents up-to-date as the input parameters and/or formulas change.	PTC Mathcad is as powerful generating results as it is communicating them. Symbolic calculation lets users put derivation steps that are often done on paper right in the document. Such documents are easier to read, understand, and verify. Whether part of knowledge transfer, setting up standard calculations, or verifying and validating a design, documents with explicit derivation and calculations make the process more effective and less error-prone.
3-dimensional (3-D) plots	Users often need to get a quick qualitative and quantitative understanding of their models or data. This is most effectively achieved using plots. Complex models require 3-dimensional views to better understand them.	A 3-D plot effectively communicates both qualitative and quantitative information about the complex models and data. Documents enhanced with 3-D plots improve collaboration and communication within an engineering organization.
Collapsible areas	In working with large analyses, computations can stretch for tens of pages. Engineers often focus on one segment of the computation at a time, while still leveraging prior calculations. Collapsible areas allow users to manage complex content better by collapsing (i.e., placing out of view) details that are not essential at the moment, thus improving productivity and quality.	A design document is often intended for multiple audiences. PTC Mathcad's collapsible areas allow better organization of content by hiding details and highlighting the important aspects of the document. When printed or exported to XPS and PDF, the collapsed areas are not visible, so the document can be shared while hiding sensitive or potentially irrelevant information.
Computational improvements: <ul style="list-style-type: none"> • Faster performance • 64-bit support • Optimization solver (KNITRO®) • Multithreading 	Greater computational power allows engineers to explore more in less time. Leveraging 64-bit architecture, engineers can solve highly complex problems and process larger datasets without running out of memory. Multithreading allows better leveraging of the multiprocessor machines.	Removing limitations of data set size and reducing computation time is important for shifting more calculation work from specialized high-end tools that, while faster, do not document processes and methods used. By allowing users to work with larger problems in PTC Mathcad, more exploration can be done in the concept phase. More design approaches can be evaluated with higher confidence reducing errors and problems that occur later in detailed design.



Key capabilities of PTC Mathcad	Benefits to user	Benefits to organization
Improved usability and productivity	<p>New users will spend less time learning how to use the software.</p> <p>Existing users will be able to complete more tasks with less effort.</p>	<p>Reduced training time allows new users to get up and running quickly.</p> <p>Enables faster adoption of the software, which translates into improved efficiency and increased productivity.</p>
Document centric calculation environment	<p>Reduces the time required to develop a design worksheet, since PTC Mathcad combines math, text and images on one document. User will also spend less time editing and formatting the worksheet.</p> <p>Documented worksheets make it easy to share calculations and design work without having to translate the programming language or include design intent.</p>	<p>Improves overall productivity, since users spend more time creating engineering content and less time formatting the worksheet.</p> <p>Enables the use of validated, standard worksheets throughout the organization, for better collaboration between colleagues and groups.</p>
Advanced math exploration	<p>Users can quickly and easily create calculations for testing before committing them to a design.</p> <p>Reduces the amount of rework to be done in the design process.</p>	<p>Improves overall process efficiency by reducing the amount of potential rework during product design. This translates into higher-quality products with faster time-to-market.</p>
Numeric functions library	<p>Ready-to-use functions enable users to tackle any computational problem, ultimately saving time and effort and resulting in faster project completion.</p>	<p>Enables access to existing library of numeric functions to be reused, saving significant time and effort, with consistency across the organization.</p>
Dynamic units checking	<p>Users will experience full support for units throughout all calculations. This translates into reduced errors and more accurate results, which improve process efficiency in product development.</p>	<p>Use of explicit units reduces the risk of making incorrect assumptions regarding which units have been used in calculations. This is a particularly important issue when products are developed globally.</p>
Backward compatibility	<p>You can use engineering worksheets saved in previous versions of PTC Mathcad. PTC Mathcad Prime 3.0 can convert most data in older Mathcad worksheets back to version 7.0, minimizing any work to recreate calculations and worksheets. Instant feedback by the converter provides a summary of each worksheet brought into the application and flags any specific compatibility issues where functionality is not matched.</p>	<p>Enables access to existing library of calculations and allows designs to be reused, saving significant time and effort.</p>
WYSIWYG Equation Editor	<p>Users can express problem constraints and solutions in natural mathematical notation. Users can focus on the calculations and spend less time manipulating the document.</p>	<p>Using standard mathematical notation instead of a specialized programming language makes PTC Mathcad documents readable to engineers who are not either users or experts of the software.</p>
Design of Experiments (DoE)	<p>Save time, effort and expense by creating fewer, more intelligent experiments.</p>	<p>Reducing design costs by accelerating the design process; reducing late engineering design changes; and reducing product material and labor complexity.</p>



4. What is included in PTC Global Support?

PTC Mathcad Prime 3.0 provides the value-added benefits of our Global Support service, including:

- Free second PTC Mathcad license—enjoy the freedom to work outside the office when needed, with a second Mathcad home-use license.
- The Support Advisor—a support alert sent exclusively to Support customers every six weeks.
- 24/7 online access to the award-winning, [eSupport portal](#) that includes a vast knowledgebase, PTC Mathcad technical support subscriptions, and a case logger.
- Ongoing PTC Mathcad software updates, productivity enhancements, and maintenance releases.
- Access to expert tips and techniques through Tech Tips demos and live webinars.
- 24-hour phone access to a team of experts Monday through Friday.

5. What is PTC's product support program policy for PTC Mathcad?

Please see the [product support calendar](#) for standard and sustained support.

6. What are the system requirements?

To learn about system requirements, please [visit this site](#) for the most up-to-date platform support information. PTC forms relationships with its hardware partners to provide our customers with software and hardware compatibility, as well as the highest level of support, quality, and performance.

7. Can I use my old PTC Mathcad worksheets with PTC Mathcad Prime 3.0?

Yes. You can easily convert worksheets from any previous version of PTC Mathcad into PTC Mathcad Prime 3.0. Differences in files will be listed in the conversion process and in the converted file for the user's review. A detailed Migration Guide is included with the product.

8. Can I use PTC Mathcad 15.0 and PTC Mathcad Prime 3.0 with the same license file?

Yes. When you install PTC Mathcad Prime 3.0, you can install PTC Mathcad 15.0 and point it to your PTC Mathcad Prime 3.0 license. The converter requires PTC Mathcad 15.0 to be installed so that you can convert any worksheets from past versions of PTC Mathcad.

9. Are training courses available for PTC Mathcad Prime 3.0?

Yes. You can learn more about available training for PTC Mathcad and other PTC products on [PTC University Learning Exchange](#).

10. How do I get the software?

Existing PTC Mathcad customers who are active on Global Support can order or download the software on the [customer support site on PTC.com](#). To purchase a single installation of PTC Mathcad Prime 3.0 or the Student Edition, please visit the [PTC Web Store](#). To purchase multiple installations of PTC Mathcad Prime 3.0 or a floating license, please contact a [PTC Sales Representative](#).



11. Where can I see a demonstration of PTC Mathcad Prime 3.0?

You can visit the [PTC Mathcad product page](#) to watch a demonstration of PTC Mathcad Prime 3.0. You can also reserve a space for our live PTC Mathcad [demonstration series](#).

12. Are there any additional resources for PTC Mathcad users?

Yes. One such resource is “[Engineering Resources, powered by PTC Mathcad](#)”—an online resource center that lets you explore hundreds of engineering design and applied math resources, created by experts from around the world who use the software for their product design calculations. In addition, PTC Mathcad Prime 3.0 provides easy in-product access to online help, tutorials, migration guide, and other tools and resources to optimize your experience.

13. Is there an online user community?

Yes. The [PTC Community](#) is an online community for PTC customers and everyone dedicated to product development excellence. Connect with users, create a blog, enter competitions, ask and answer questions, and learn about PTC Mathcad.

14. Can I try the software before I buy it?

Yes. You can try PTC Mathcad Prime 3.0 by downloading [PTC Mathcad Express](#), a free-for-life version of the software that comes with full functionality for the first 30 days.

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