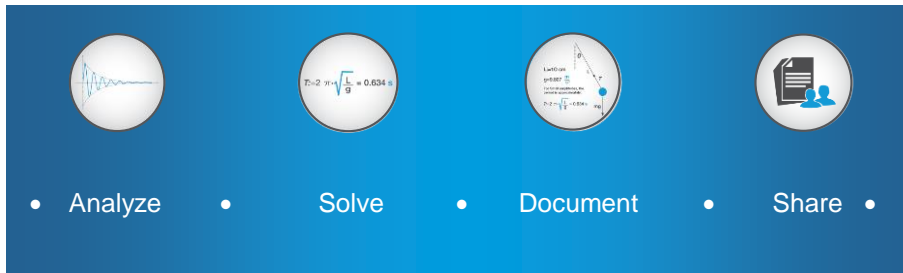


A **digital engineering notebook** to perform your engineering **calculations** and manage your **design intent**

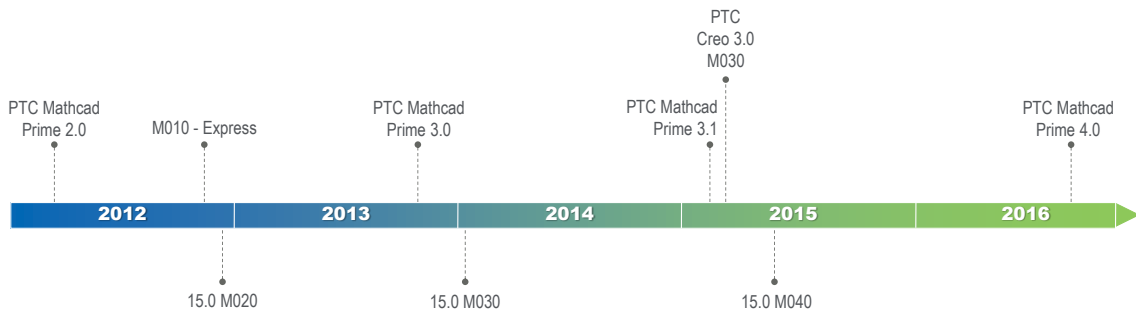


PTC Mathcad combines the ease and familiarity of an **engineering notebook** with a powerful **mathematical engine**

3

PTC Mathcad Prime x.0

- Major releases with new functionality
- Maintenance releases to address customer-reported issues when necessary



PTC Mathcad 15.0

- Maintenance releases to address customer-reported issues, platform and/or technology changes
- No new features
- Discontinue only when full migration to Prime x.0 can take place for majority of customers

4

PTC Mathcad Prime 3.1

PTC Mathcad Prime 3.1

Released March 2nd, 2015

- **Functionality**

- New PTC Creo integration
 - 3 use cases for CAD engineer
 - Document design intent
 - Analysis driven design
 - Verification and validation
- API

Re-written to be cleaner and more efficient

Extensive SDK with a dozen code examples including source code to SolidWorks integration

Large data handling

For 64-bit architectures, data set sizes are no longer limited to 2 gigabyte ceiling

Connectivity with third party tools

Prode® physical properties, CoolProp® fluid properties, ODBC-compliant databases

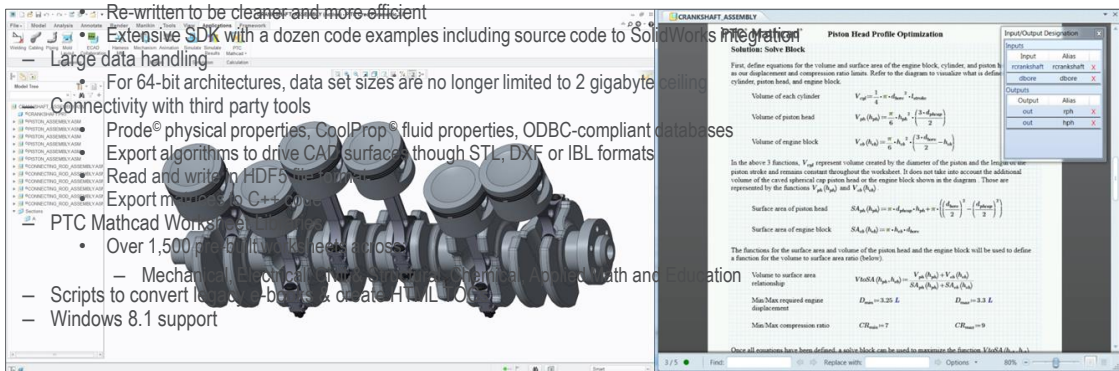
Export algorithms to drive CAD surfaces through STL, DXF or IBL formats

Read and write in HDF5 format

Export models to C++ code

PTC Mathcad Workbooks

- Over 1,500 pre-built workbooks across
 - Mechanical Engineering
 - Chemical Engineering
 - Physics
 - Mathematics
 - Economics
 - Education
- Scripts to convert legacy workbooks to create HTML ODT
- Windows 8.1 support

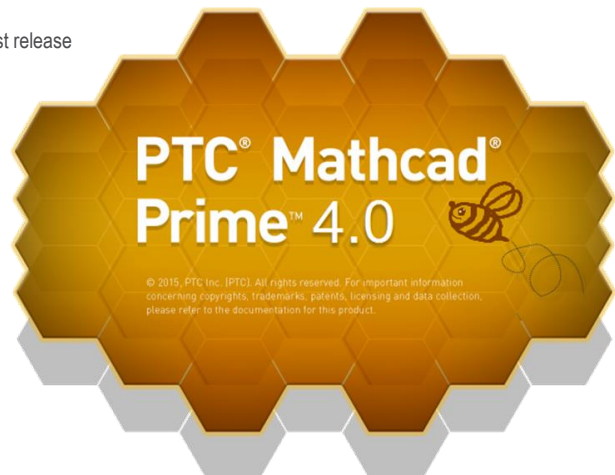


PTC Mathcad Roadmap

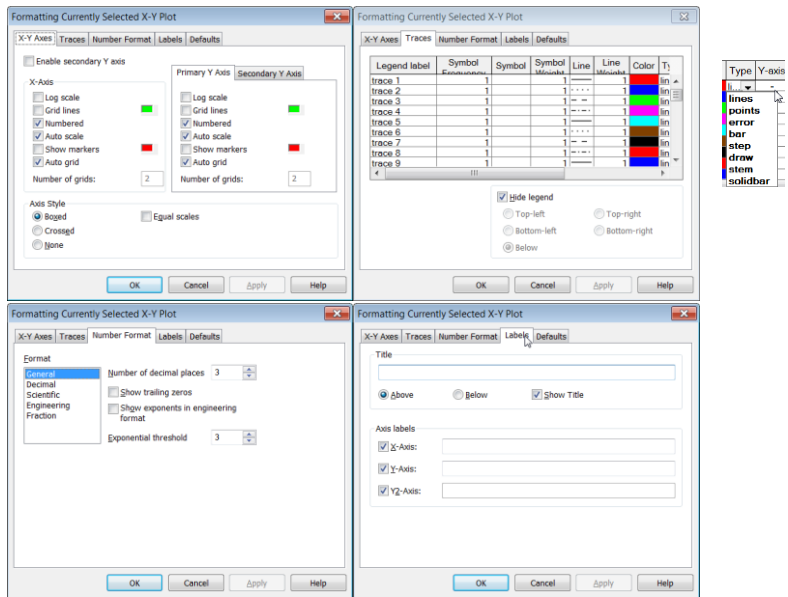
PTC Mathcad Roadmap

PTC Mathcad Prime 4.0

- Performance improvements in document manipulation
- Plot enhancements
 - Embed 3rd party tool to match PTC Mathcad 15.0 plots on first release
- Worksheet content protection
 - Area protection
 - Area locking
- Improved external app interoperability
 - Copy multiple regions to clipboard
- Equation wrapping
- Mathcad as an OLE container
- Computational enhancements
- Calculation Server

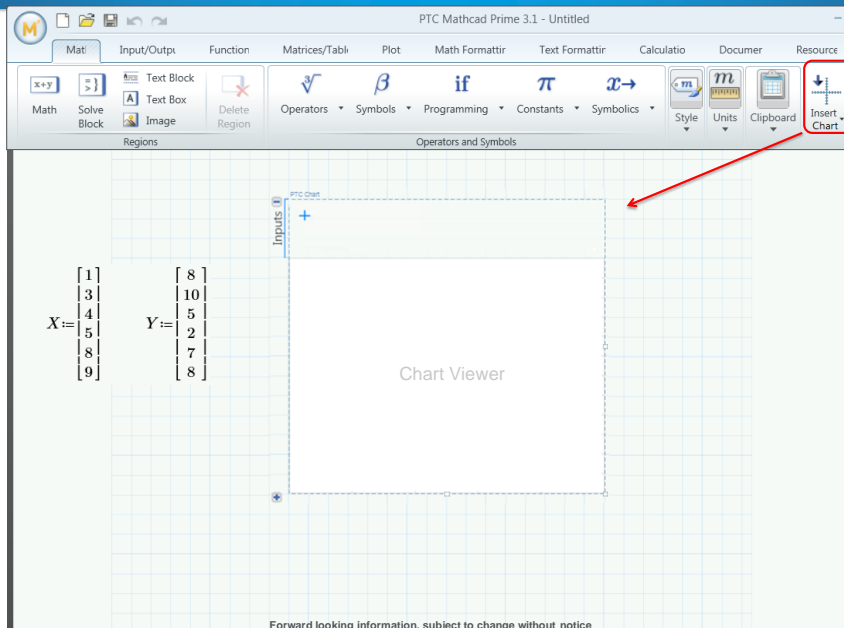


Mathcad 15.0 X-Y Plots



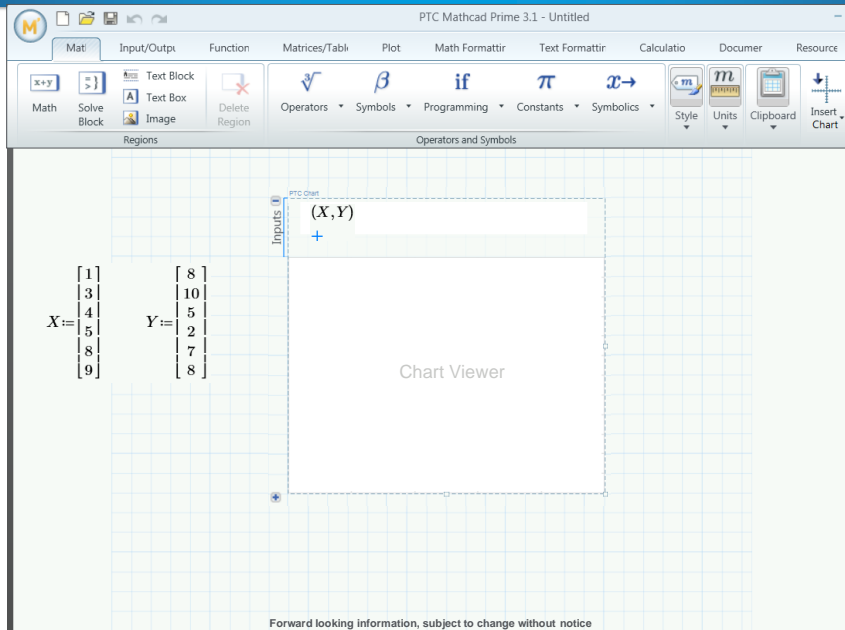
Forward looking information, subject to change without notice

1) Insert Chart object:

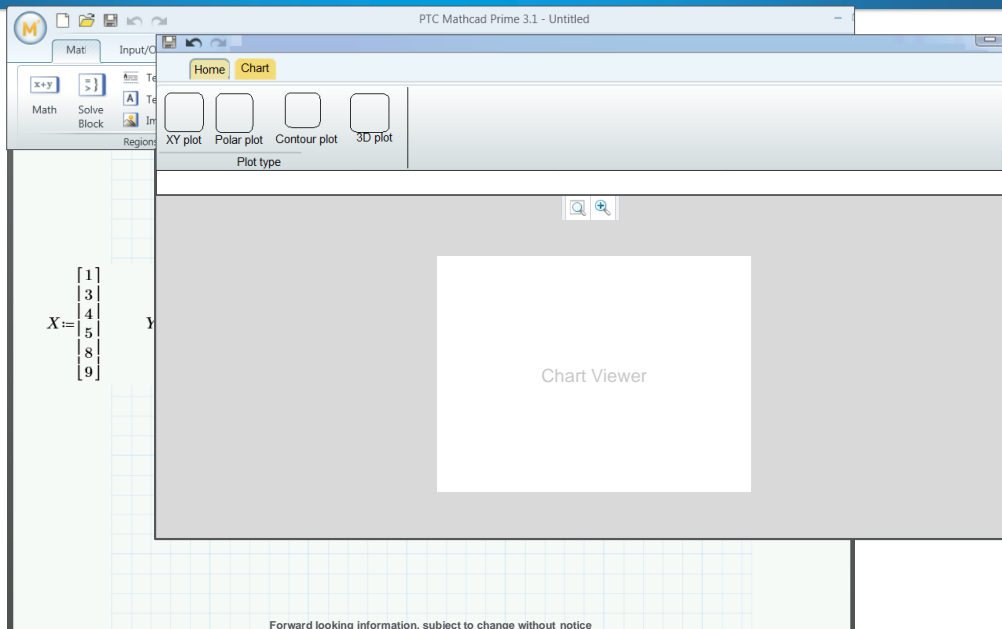


Forward looking information, subject to change without notice

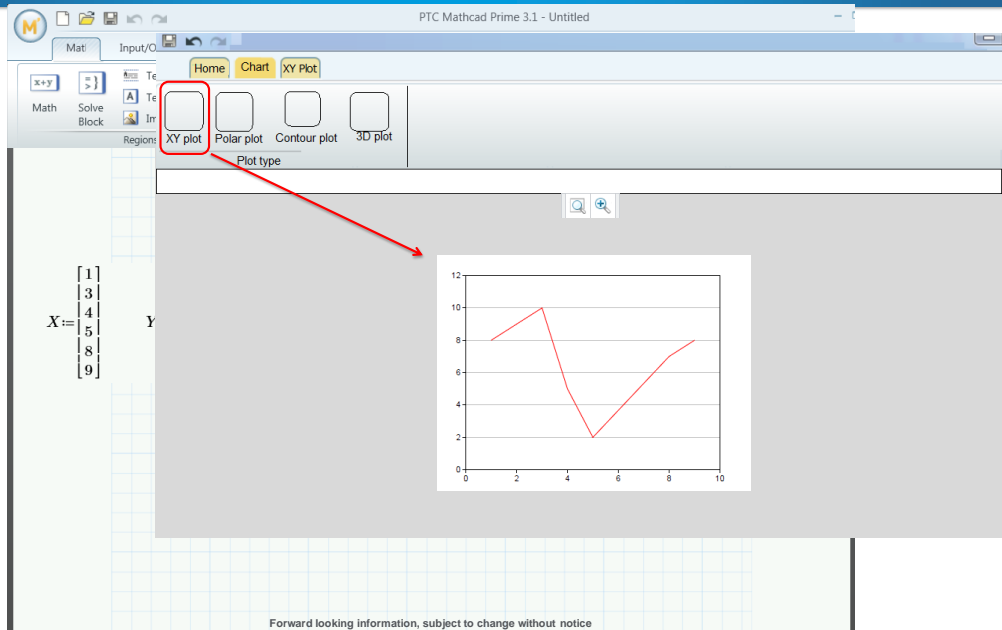
2) Type data series:



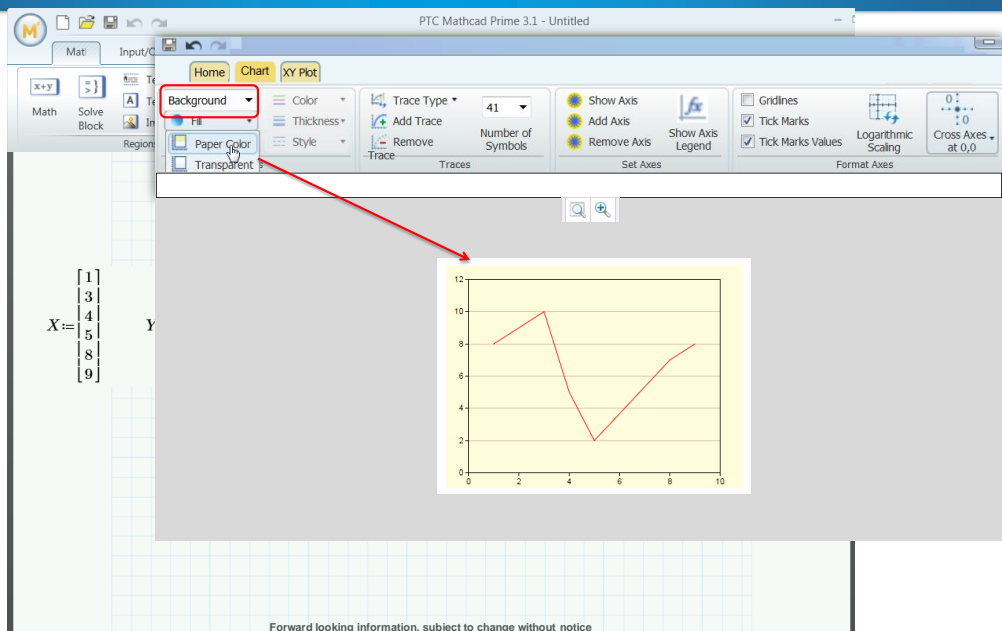
3) Double-click chart area to activate chart + its associated Ribbon UI:



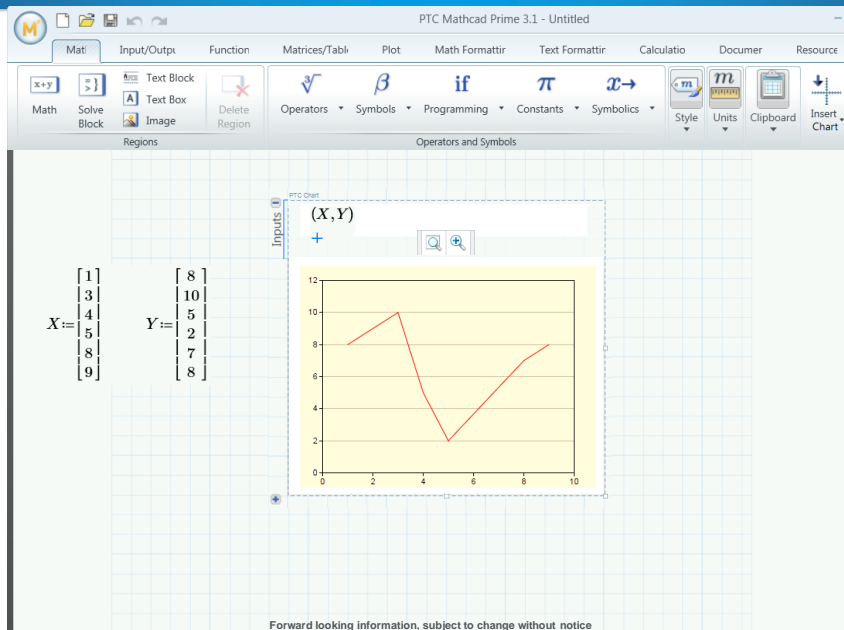
4) Select a plot type. Default trace formatting appears + context-sensitive tab:



5) On the relevant tab, "Background" on top-left drop-down and then specify fill:



5) Close external app to return to Mathcad:



Performance Improvements

- Performance improvement of worksheet-level operations
 - Adding and removing whitespace
 - Separating and moving regions
 - Region selection
 - Etc.
- Performance improvement of region-level operations
 - Text editing
 - Switch to draft mode
 - Pushing regions down
 - Etc.

| Main Improvements | Improvement (Worksheet dependent) |
|---|-----------------------------------|
| Switching between Page/Draft mode | Improved 10 – 30 times |
| "Orientation" - Page Orientation change (Portrait/Landscape) | Improved 10 – 100 times |
| "Letter" - Page size change (change page formats A3, A4, ...) | Improved 10 – 40 times |
| "Margin" – Margin switch between Standard, Narrow and Wide | Improved 10 – 40 times |
| "Grid Size" – Grid size switch between Fine and Standard. | Improved 10 – 15 times |
| "Show Grid" | Improved 5 – 10 times |
| "Add Space" | Improved 5 – 10 times |
| "Remove Space" | Improved 5 – 10 times |
| "Add Page Break" | Improved 1.5 – 2 times |
| "Separate Regions" | Some improvement |
| Select All | Improved 10 – 40 times |
| Un-Select All | Improved 10 – 40 times |
| Math format changes on selected items | Some improvement |
| Text format changes on selected items | Some improvement |
| Collapse Area | Some improvement |

Content Protection – Area Protection and Locking

- Protect and/or lock an area from edit

- Details:

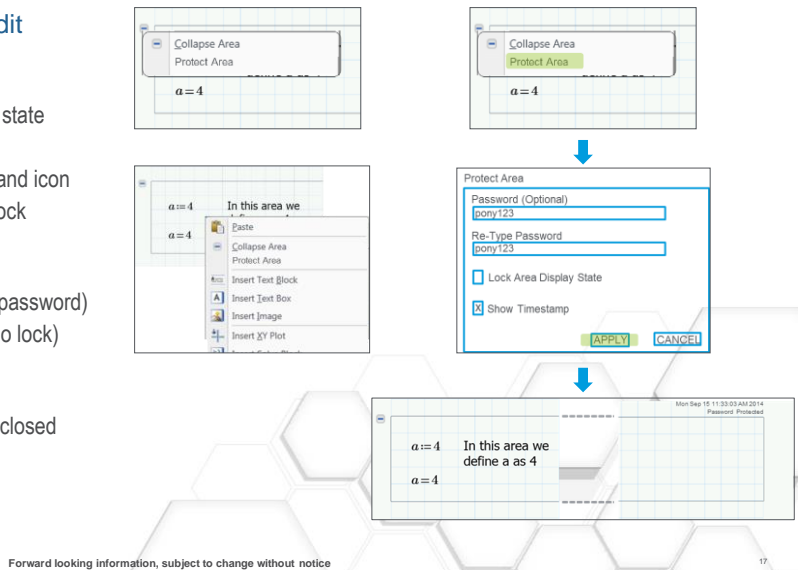
- Protect from edit and optional lock area state
- Password or no password
- New RMB option and new RMB on expand icon
- Default is no timestamp, no area state lock

- Includes:

- Protect content from edit (password/no password)
- Lock area display state (open, closed, no lock)

- DOES NOT include:

- Obscured data in file when area locked closed



Forward looking information, subject to change without notice

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Improved external app interoperability – copy multiple regions to Windows Clipboard

- Select/copy multiple regions and paste into 3rd party apps (Microsoft Office, etc.)

- Details:

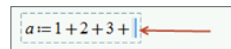
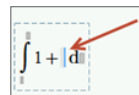
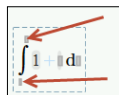
- User can select multiple regions (contiguous or non-contiguous) and 'copy'
- All regions paste as images (.png) except text, which pastes as text
- Text pasted with Mathcad formatting, except:
 - Keep Text Only – apply normal formatting for Word
 - Merge Formatting – keep features such as bullets, maintain some target formatting
- We paste while maintaining Mathcad spacing
- For large horizontal spacing, regions may be lost in unseen right side of Word
- Maintain hard page breaks if copied as part of continuous selection

Forward looking information, subject to change without notice

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Equation Wrapping

- Allow an equation to be split/wrapped at specific points
- Details:
 - Two ways to enter equation break:
 - As you type – shift+enter moves operator to next line
 - Editing an equation – shift+enter moves all to the right (+ possible extra) to next line
 - Where allowed:
 - Definitions and symbolic evaluations
 - Top level placeholder
 - Major placeholders of operators
 - Where not allowed:
 - Minor placeholders
 - Symbolic results



$$C31 := \frac{Hz \cdot e^{2^2}}{2} - \frac{Hz \cdot a1^2}{2} - \frac{Fc1 \cdot a1^3 + 2 \cdot Gz \cdot a1^3}{6 \cdot a1} - Hz \cdot e2 \cdot a1$$

$$C31 := \frac{Hz \cdot e^{2^2}}{2} - \frac{Hz \cdot a1^2}{2} - \frac{Fc1 \cdot a1^3 + 2 \cdot Gz \cdot a1^3}{6 \cdot a1} - Hz \cdot e2 \cdot a1$$

Forward looking information, subject to change without notice

PTC Mathcad Roadmap

Subsequent Release Themes

- Plot Improvements
 - Utilize more capabilities from 3rd party tool
- Functionality
 - Constrained inputs (input controls)
 - Picture operator
 - Text styles
 - Hyperlinks
 - Program debugging
 - Redefinition warnings
 - Scripted components
 - Gradient operator
 - PDESolve
- Integration Improvements
 - PTC Creo integration phase II
 - API enhancements
 - Additional 3rd party integrations

| | | |
|----------------------------------|--------|--------|
| $\sin\left(\frac{a}{1.5}\right)$ | $M :=$ | $N :=$ |
| 0.656 | 0.302 | 10 cm |
| 0.113 | 0.492 | 2 in |
| | | 800 mm |
| | | 1 ft |

| | |
|-----------|-----|
| $M + N =$ | m |
| 0.3 | |
| 0.143 | |
| 0.834 | |
| 0.455 | |

Forward looking information, subject to change without notice

- Your feedback is valuable
- Don't miss out on the chance to provide your feedback
- Gain a chance to win an instant prize!
- Complete your session evaluation now

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