



Mathcad® Prime™ 1.0
Migration Guide
December 2010



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About This Guide

This Migration Guide is intended for users of the previous versions of Mathcad who are migrating to Mathcad Prime 1.0.

How to Use This Guide

This guide supplements the Mathcad Prime 1.0 Help Center. This guide assumes you are already familiar with Mathcad functionality.

Use this guide to learn about converting your files from earlier versions of Mathcad to Mathcad Prime 1.0. Step-by-step procedures are provided here for converting your legacy worksheets to Mathcad Prime 1.0 worksheets. Information on troubleshooting file conversion issues is also given.

Technical Support

Contact PTC Technical Support via the PTC Web site, phone, fax, or e-mail if you encounter problems using your software. For more information, see *Opening and Tracking a Call to Technical Support* in the *PTC Customer Service Guide* enclosed with your shipment. The guide is also on the PTC Support Web page at <http://www.ptc.com/support/index.htm>.

You must have a Service Contract Number (SCN) before you can receive technical support. If you do not have a number, contact PTC License Management using the instructions in your *PTC Customer Service Guide* under License Management. You can receive free technical support for the first 30 days after purchasing new software from PTC. If you do not have a SCN, you can contact technical and licensing support at http://www.ptc.com/appserver/cs/mathcad_logger/options.jsp

If you run into issues with installation and licensing, and need further assistance you can contact the Mathcad Customer Advocate at mathcadlicensing@ptc.com.

Documentation


PTC provides documentation on the product CD-ROM in the following forms:

- Help Center with context-sensitive help and tutorials.
- *Mathcad Prime 1.0 Installation and Administration Guide* in a PDF file.

Note

To view and print the PDF file, you must have the Adobe Acrobat Reader installed.

You can click any item in the user interface or any function and press F1 to open the relevant Help topic.

To access the Help Center or the Getting Started Tutorial, click  or press F1.

Feedback to Documentation

PTC welcomes your suggestions and comments on its documentation—send feedback to the following address:

mathcad-documentation@ptc.com

Please include the name of the application and its release with your comments.

Documentation Conventions

Convention	Item	Example
Bold	Buttons, and other selectable elements or options from the Ribbon.	Click Calculation ► Calculation Options Click Approximate Equality .
Courier	User input, system messages, directories, and file names.	Processing completed.
Courier with less-than and greater-than symbols (<>)	Variables for which the user substitutes an appropriate value	output=<25



Converting Legacy Files

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Legacy files are worksheets that were created using previous versions of Mathcad. You cannot open legacy files directly in Mathcad Prime 1.0. However, you can use the Mathcad Prime 1.0 **XMCD, MCD Converter** to convert .mcd, .xmcd, .mct, .xmct, and .xmcdz legacy worksheets to Mathcad Prime 1.0 .mcdx format. This chapter provides instructions for using the converter.

Note

To convert legacy Mathcad files to Mathcad Prime 1.0 MCDX format, you must have Mathcad 15 M005 installed. Otherwise, the converter will not function properly. You can download Mathcad 15 M005 from <http://www.ptc.com>.

Before Converting

Check your legacy worksheet to see if it contains any of the following items, and then take the appropriate actions before starting the conversion process.

Locked Areas

The **XMCD, MCD Converter** cannot process legacy files that contain collapsed locked areas. You must unlock locked areas that are collapsed before converting.

Input Tables

Large input tables are converted as large matrices that are likely to cause regions to overlap. To avoid this issue, you may want to externalize your data before conversion. For example, to externalize the following input table definition:

```
data :=
```

	0
0	...

1. Write the data to an external file using the WRITECSV function.

```
data :=
```

	0
0	...

```
temp := WRITECSV(data, "table_data.csv")
```

2. Read the data back using the READCSV function.

```
data :=
```

	0
0	...

```
temp := WRITECSV(data, "table_data.csv")
```

```
data := READCSV("table_data.csv")
```

3. Delete the input table definition and the region containing the WRITECSV function.

```
data := READCSV("table_data.csv")
```

Ensure that the file `table_data.csv` is kept with the legacy file before passing it to the converter.

Using the XMCD, MCD Converter

1. To start the XMCD, MCD Converter, on the **Input/Output** tab, in the **Mathcad Worksheets** group, click **XMCD, MCD Converter**. The converter opens.
2. Click **Add Worksheet**. The **Open** dialog box opens.
3. Browse for and select the legacy worksheet(s), and then click **Open**. The selected file names appear in the converter window below **Source Worksheet**.
4. Click **Add References**. If the worksheet contains references to other worksheets, they appear in the converter.
5. Select the desired worksheets and click **Convert**. The conversion process starts and the **Status** changes to **In Progress**. If the conversion is successful, the **Status** changes to **Converted**, otherwise it changes to **Failed**.
6. For each successful conversion, the converter creates a new file with a `.mcdx` file extension in the same folder as the source file. The source file is not modified.
7. A conversion log for each converted worksheet displays at the bottom of the XMCD, MCD Converter dialog. Click on a worksheet name, to see the log for it. The conversion log lists all the issues found during conversion.

Note

- *The version of the source file is displayed in the **XMCD, MCD Converter**.*
- *You can continue working in Mathcad Prime 1.0 while files are being converted.*

Understanding the Conversion Results

When you convert legacy worksheets, all regions that require your attention are annotated. A red line segment appears to the left of the affected region and a red arrow points to the affected region. For example, a region might contain a function with different solving algorithm, a different display, or a feature that is unsupported in Mathcad Prime 1.0. Features that are not available in Mathcad Prime 1.0 are converted as images, so that no information is lost. All annotated differences belong to one of the following categories:

- Display differences
- Calculation differences
- Unsupported formatting
- Unsupported features (not available in Mathcad Prime 1.0)

To understand and handle annotated regions, perform the following steps:

1. In a converted worksheet, click an annotated region. The annotation appears below the region.
2. Read the annotation and resolve any conversion issues. After you edit all the regions, on the **Input/Output** tab, in the **Mathcad Worksheets** group, click **Clear Annotations**. The annotation marks disappear.

Note

Clear Annotations removes all the annotations in the worksheet. Do not click this button until you have reviewed all the issues.

Refer to [Resolving Conversion Issues on page 19](#) for information on resolving conversion issues.

Display Differences

The display of some features is different in Mathcad Prime 1.0. These display differences do not affect calculation results.

Fractional Results and Mixed Number Formatting

The result is formatted according to the default Mathcad Prime 1.0 worksheet style.

Nondecimal Expressions

In Mathcad Prime 1.0, binary, octal, and hexadecimal base numbers lose their “b”, “o”, and “h” postfix. These numbers are converted to decimal numbers. The other letters in a hexadecimal number are also converted.

Complex Numbers

In previous versions of Mathcad, you entered $z:=2\pi*1i$ and the displayed result was $z:=2\pi*i$, but in Mathcad Prime 1.0 the displayed result is $z:=2\pi*1i$ (the imaginary unit is prefixed with the number 1). A new polar operator allows you to display complex results in polar form.

Parentheses

Some parentheses in previous versions of Mathcad that are only used for display purposes are not converted. For example, consider the following equation:

$$Q(i,j) := m_{(i,j)} + n_{(j,i)}$$

Subscripts appear without parentheses when converted by Mathcad Prime 1.0:

$$Q(i,j) := m_{i,j} + n_{j,i}$$

The meaning of the resulting equation is identical.

Display Precision in Results

Mathcad Prime 1.0 can display up to 15 decimal places in results. This affects the conversion of results.

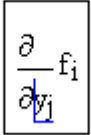
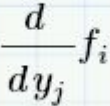
Previous versions of Mathcad	Mathcad Prime 1.0
$\ln(2) = 0.69314718055994530$	$\ln(2) = 0.693147180559945$
Displays 17 decimal places	Displays 15 decimal places

Note

The precision of internal results is the same.

Derivatives

The display of partial derivatives is not supported in Mathcad Prime 1.0. They appear as derivative operators.

Previous versions of Mathcad	Mathcad Prime 1.0
	

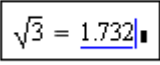
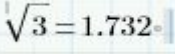
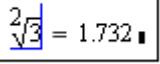
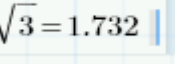
Note

The partial derivative variables use literal subscripts.

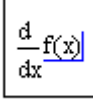
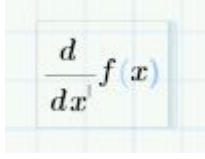
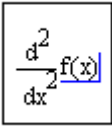
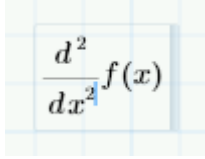
Operators with Multiple Forms

Some operators have multiple forms in previous versions of Mathcad. Mathcad Prime 1.0 uses a single operator with multiple placeholders, to make it easier to use whichever form you want. The additional placeholders can be filled in or left empty.

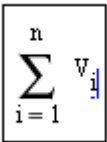
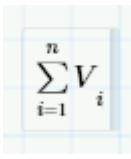
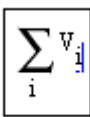
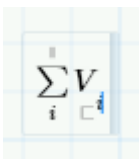
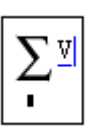
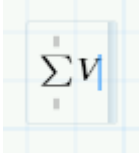
- Square root and Nth root

Previous versions of Mathcad		Mathcad Prime 1.0	
Square Root		Both the Square Root and Nth Root operators can be inserted by pressing \.	
Nth Root			

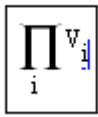
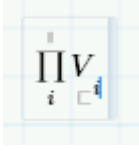
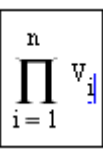
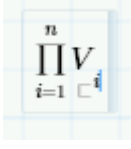
- Derivative and Nth derivative

Previous versions of Mathcad		Mathcad Prime 1.0	
Derivative		Both forms of the derivative operator can be inserted by pressing Ctrl+Shift+D.	
Nth Derivative			

- Summation

Previous versions of Mathcad		Mathcad Prime 1.0	
Summation		The three forms of the Summation operator can be inserted by pressing Ctrl+Shift+\$.	
Range Variable Summation			
			

- Product

Previous versions of Mathcad		Mathcad Prime 1.0	
Range Variable Iterated Product		Both forms of the Product operator can be inserted by pressing Ctrl+Shift+#.	
Iterated Product			

WRITEPRN and APPENDPRN Functions

The **WRITEPRN** and **APPENDPRN** functions are converted into different Mathcad Prime 1.0 formats.

Previous versions of Mathcad	Mathcad Prime 1.0
$M := \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{pmatrix}$	$M := \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$
$\text{WRITEPRN}(\text{"bob"}) := M$	$\text{WRITEPRN}(\text{"bob"}, M) = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$
$\text{READPRN}(\text{"bob.prn"}) = \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{pmatrix}$	$\text{READPRN}(\text{"bob.prn"}) = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$
$\text{APPENDPRN}(\text{"bob"}) := M$	$\text{APPENDPRN}(\text{"bob"}, M) = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$
$\text{READPRN}(\text{"bob.prn"}) = \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 1 & 2 & 3 \\ 4 & 5 & 6 \end{pmatrix}$	$\text{READPRN}(\text{"bob.prn"}) = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$

Mathcad Prime 1.0 converts the definitions $\text{WRITEPRN}(\text{file}) := M$ and $\text{APPENDPRN}(\text{file}) := M$ to $\text{WRITEPRN}(\text{file}, M) =$ and $\text{APPENDPRN}(\text{file}, M) =$ respectively.

Note

WRITEEXCEL has a different order of arguments in Mathcad Prime 1.0.

Converted Text

Text is converted properly when your display is set to 96 DPI. If your display is set to 120 DPI, then the converted file might contain text that wraps onto more than one line.


Disabled Regions

In legacy files a disabled region is marked with a black square. When converted, the disabled region appears grayed out.

Collapsed Areas

Collapsed areas are not supported in Mathcad 1.0. When converted, the content of collapsed areas is displayed directly.

Page Layout

You can view the Mathcad Prime 1.0 worksheet with or without gridlines. By default Mathcad Prime 1.0 opens in page view in which your worksheet appears as a series of pages with gridlines. The non-printable continuous space that is visible on the right side of the legacy Mathcad worksheets is hidden. To view the nonprintable space, switch to draft view. To view a print preview of your worksheet, switch back to page view, by clicking  in the bottom right of the bar below, or under the **Document** tab . You can also preview your pages by saving them to XPS (XML Paper Specification) or printing them to PDF directly from Mathcad Prime 1.0.

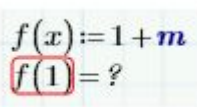
Global Definition Operator

Mathcad Prime 1.0 does not include the global definition operator. When you convert a legacy file containing one or more global definition operators, a table containing all converted definitions is inserted at the top of the file, and a local definition operator is inserted where each global definition operator appeared in the original file. This ensures that the resulting file has the same values as the original file.

Calculation Differences

Units

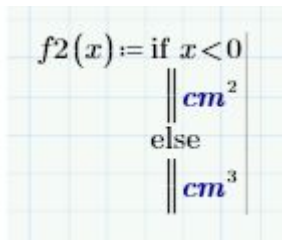
Mathcad Prime 1.0 has dynamic unit checking. This means that units are checked while functions are processed. In Mathcad 12 through 15, units are checked first and then processed.

Mathcad 12 through 15	Mathcad Prime 1.0
$f(x) := 1 + m$ $f(1) =$	
An error on the function definition indicates that the units do not match.	An error only appears after the function is evaluated.

Dynamic checking gives more flexibility, so some expressions that produce an error in earlier versions of Mathcad work properly in Mathcad Prime 1.0. For example, in Mathcad 12 through 15, you cannot define a program or function that depends on a numeric value to determine the units of output.

$$f2(x) := \begin{cases} \text{cm}^2 & \text{if } x < 0 \\ \text{cm}^3 & \text{otherwise} \end{cases}$$

But in Mathcad Prime 1.0, the program works as expected:



The screenshot shows the Mathcad interface with a function definition: $f2(x) := \text{if } x < 0 \text{ then } \text{cm}^2 \text{ else } \text{cm}^3$. The units are displayed in blue text.

Note

This program contains the new if/else operator, which replaces if/otherwise.

Solve Blocks

Solve blocks in Mathcad Prime 1.0 are clearly defined regions within a solve block box. You do not need the word *Given* to mark the start of a solve block. Guess values, constraints, and solvers are labeled for clarity. All regions inside the solve block construct can move as one unit. For more information on solve blocks, refer to the Help and the *Solving Tutorial for Mathcad Prime 1.0*.

The following restrictions apply to solve blocks:

- You cannot include a range loop above the solver function inside a solve block. You can have a range variable but not a range loop such as this:

$$i := 1 .. 10$$

$$x_i := i$$

- You cannot include any definitions inside an ODE solve block, that is, a solve block containing **odesolve**.

Worksheet Calculation

Earlier versions of Mathcad open by recalculating all results, and you can choose to save the file with results stored or unstored.

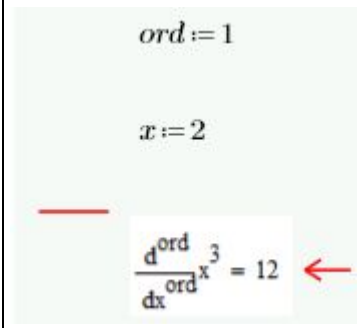
Mathcad Prime 1.0 does not recalculate the results when you first open the file, so if results were stored, they will show in the file. When you edit the file, the results are recalculated, as needed.

Inline Math Expressions

You cannot insert math regions inside text regions in Mathcad Prime 1.0. Instead, you can insert an image of a math region inside a text region. If you need the math to participate in the calculations, you must keep it as a math region. When a legacy file is converted, math in text regions is converted to images. If the math is needed for calculation, you must retype it in a math region below.

Derivatives

When you convert a legacy worksheet that contains partial derivatives where the order of derivatives is a variable or an expression, the converter will annotate such regions as follows:

Previous Versions of Mathcad	Mathcad Prime 1.0
$ord := 1$ $x := 2$ $\frac{d^{ord}}{dx^{ord}} x^3 = 12$	

Note

The order of derivatives in Mathcad Prime 1.0 must be an integer from 1 through 5.

Other Notable Differences

Greek Letters in Text Regions

To insert a Greek letter inside a Mathcad Prime 1.0 text region, first type the equivalent Latin character, then select the typed letter and change its font to **Symbol**. Alternatively, insert the character from the Character Map program under Accessories.

You can also copy a variable name containing Greek symbols from a math region to a text region.

Images

Mathcad Prime 1.0 does not have a Picture tool. To display an image that results from processing an input image, save the new image to the current working directory and on the **Math** or **Document** tab, in the **Regions** group, click **Image**. Click **Browse for Image...** to locate and insert your image.



Resolving Conversion Issues

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When you convert a legacy worksheet to Mathcad Prime 1.0 format, the converted file may contain visual or calculation issues that require your intervention. Use the information in this chapter to learn how to resolve file conversion issues.

Region Placement

The worksheet conversion process may result in some regions overlapping other regions. This can be caused by one or more of the following reasons:

- Difference in page size
- Difference in font size and style
- Little or no space between regions in the legacy worksheet
- Regions in collapsed areas in a legacy worksheet
- Matrix display differences

Resolution

In the Mathcad Prime 1.0 worksheet, select the overlapping regions. On the **Document** tab, in the **Spacing** group, click **Separate Regions** and then select **Vertically** or **Horizontally**.

Worksheet Calculation

The worksheet conversion process might run into math regions that it cannot resolve or plot regions that it cannot convert. The converter turns such regions into images with appropriate annotations.

Note

The Worksheet Converter cannot process legacy files that contain locked areas. Please unlock such areas before converting.

Built-In Variables

When your legacy worksheet contains a built-in variable whose value is defined on the **Calculation** tab, in the **Worksheet Settings** group, you must define that variable at the top of your converted worksheet. For example, if the value of *ORIGIN* in your legacy worksheet is 2, you type $ORIGIN := 2$ at the top of your converted worksheet.

Result Formatting

Some calculation results may look different in your converted worksheet because the following result formatting options are different in Mathcad Prime 1.0:

- Results formatting: Complex threshold, zero threshold, exponential threshold, fraction, exponents in engineering format, format units, hexadecimal, octal or binary display.
- Show unit exponents as a fraction

- Display precision: Mathcad Prime 1.0 supports display precision of up to 15 decimal places.
- Matrix display style

Note

When you open a worksheet in Mathcad Prime 1.0, the results are not recalculated automatically. You must press **Ctrl+F5** to recalculate the worksheet and view the results.

Solving Functions

Solving Functions Outside Solve Blocks

If your legacy worksheet contains solving functions outside a solve block (not following the keyword Given), the converted worksheet displays an annotated region with the solving function **maximize** showing the correct solution.

Legacy Worksheet	After Conversion
$f(x,y) := 2 + 2 \cdot x + 2 \cdot y - x^2 - y^2$ $x := 4 \quad y := 5$ $\text{Maximize}(f, x, y) = \begin{bmatrix} 1 \\ 1 \end{bmatrix}$	

If you recalculate the worksheet, the solving function **maximize** displays an error message. To resolve the issue, insert a new solve block, copy the solving regions, paste them inside the solve block, and press **Ctrl+F5** to recalculate.

After Recalculation	Fixed

Note

- The **minimize** and **maximize** functions now only work inside solve blocks.
- You cannot drag the regions into the solve block.

Range Variable and Range Loop Definitions Inside Solve Blocks

If your legacy worksheet contains range variable and range loop definitions inside a solve block (following the keyword Given), then the definition returns an error in the converted worksheet.

Legacy Worksheet	After Conversion
$v := \begin{pmatrix} 1 \\ 0.1 \\ 0.01 \\ 1 \times 10^{-3} \end{pmatrix}$	$v := \begin{bmatrix} 1 \\ 0.1 \\ 0.01 \\ 1 \cdot 10^{-3} \end{bmatrix}$
$M := \begin{pmatrix} 0.3 & 0.2 & 6.6 & -1.1 \\ 4.5 & -1.8 & -0.3 & 6.5 \\ -7.3 & 9.7 & 10.9 & -4.1 \\ 8.1 & -2.7 & 8.7 & 8.9 \end{pmatrix}$	$M := \begin{bmatrix} 0.3 & 0.2 & 6.6 & -1.1 \\ 4.5 & -1.8 & -0.3 & 6.5 \\ -7.3 & 9.7 & 10.9 & -4.1 \\ 8.1 & -2.7 & 8.7 & 8.9 \end{bmatrix}$
Given	
$i := 0..3$	Guess Values $i := 0..3$
$X_i := 1$	$X_i := 1$
$M \cdot X = v$	Constraints $M \cdot X = v$
$\text{Find}(X) = \begin{pmatrix} -3.937 \\ -2.975 \\ 0.746 \\ 1.952 \end{pmatrix}$	Solver $\text{find}(X) = ?$

To resolve the issue, copy and paste the range variable definition from inside to above the solve block.

Note

You cannot drag regions out of a solve block.

Fixed

$$v := \begin{bmatrix} 1 \\ 0.1 \\ 0.01 \\ 1 \cdot 10^{-3} \end{bmatrix}$$

$$M := \begin{bmatrix} 0.3 & 0.2 & 6.6 & -1.1 \\ 4.5 & -1.8 & -0.3 & 6.5 \\ -7.3 & 9.7 & 10.9 & -4.1 \\ 8.1 & -2.7 & 8.7 & 8.9 \end{bmatrix}$$

$$i := 0..3$$

$$X_i := 1$$

Guess Values

Solver Constraints

$$M \cdot X = v$$

Solver

$$\text{find}(X) = \begin{bmatrix} -3.937 \\ -2.975 \\ 0.746 \\ 1.952 \end{bmatrix}$$

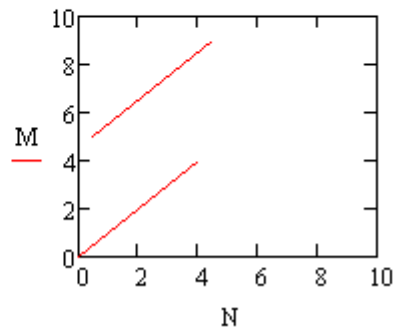
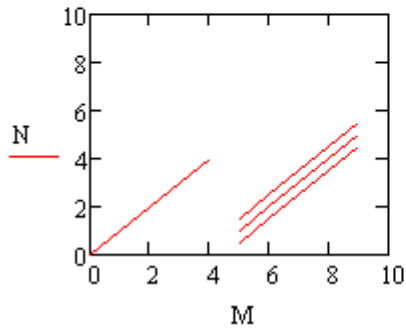
2D Plots

Waterfall Plot

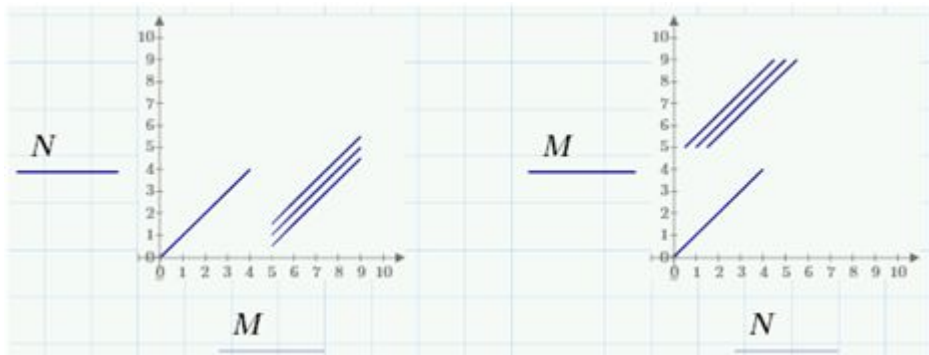
When the y-axis is a matrix of multiple columns, legacy Mathcad plots one trace per column:

$$M := \begin{pmatrix} 0 & 5 \\ 1 & 6 \\ 2 & 7 \\ 3 & 8 \\ 4 & 9 \end{pmatrix}$$

$$N := \begin{pmatrix} 0 & 0.5 & 1 & 1.5 \\ 1 & 1.5 & 2 & 2.5 \\ 2 & 2.5 & 3 & 3.5 \\ 3 & 3.5 & 4 & 4.5 \\ 4 & 4.5 & 5 & 5.5 \end{pmatrix}$$



After you convert the worksheet and perform the actions below, Mathcad Prime 1.0 displays the plot as follows:



Perform one of the following actions:

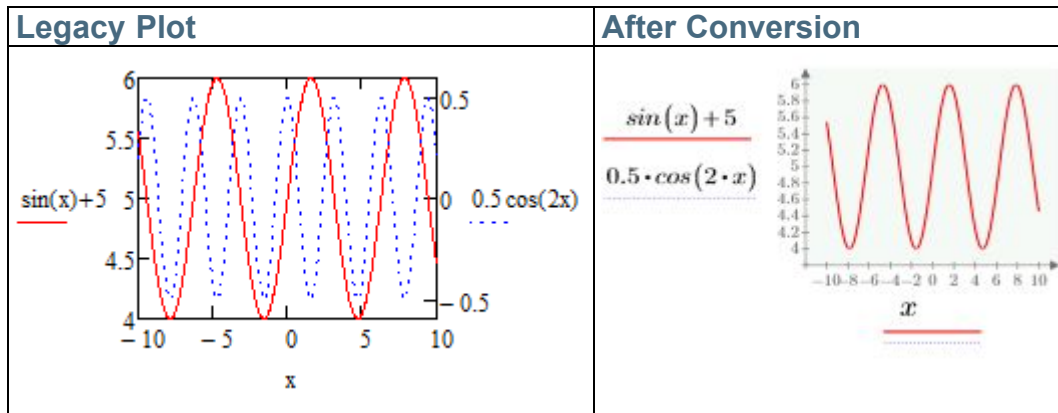
- XY plot—Change the trace type to **Waterfall Trace**.
- Polar plot—Plot the columns one at a time with one y-axis expression per vector.

Note

- All legacy waterfall plots are converted to a line trace. You can change the line trace to a waterfall trace with multiple lines as shown in the image above.
- When the number of columns of x is greater than y (as in the plot on the right), a trace is plotted for each column in the x axis expression. You must delete the extra columns in x if you want this plot to look exactly as the legacy plot.

Secondary Y Axis

When your legacy plot contains a secondary y-axis, the plot is converted as follows — assuming the tick marks of the first y-axis were user-defined:

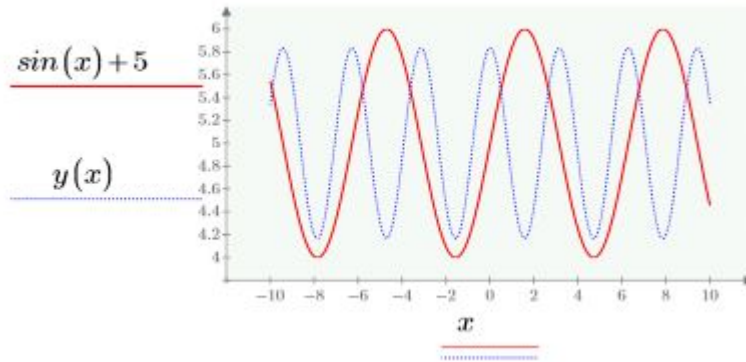


Note

The secondary y-axis is converted as a second trace of the primary y-axis. In this case, the secondary y-axis trace is not visible in the plot.

To resolve the issue, scale and plot the graph as follows:

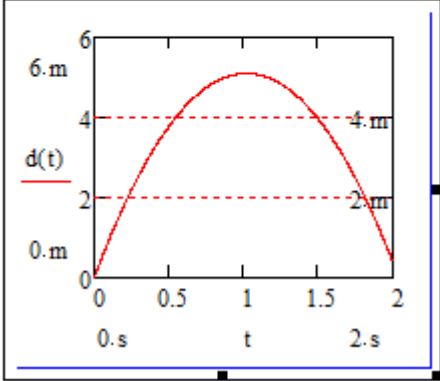
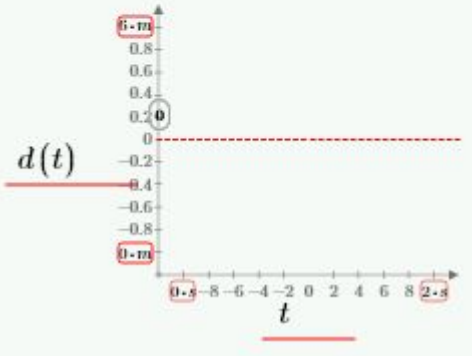
$$y(x) := \frac{Y1Max - Y1Min}{Y2Max - Y2Min} \cdot (0.5 \cdot \cos(2 \cdot x)) + \left(Y1Min - \left(\frac{Y1Max - Y1Min}{Y2Max - Y2Min} \right) \cdot Y2Min \right)$$



You can use the above scaling formula for any plot with a normal scale, but not for log scale.

Plots with Units

In previous versions of Mathcad, units can be added to the tick marks and the markers as shown in Plot A. But in Mathcad Prime 1.0, the units are added to the axis expressions.

Plot A: Legacy Plot	Plot B: After Conversion
$u := 10\text{m}\cdot\text{s}^{-1}$ $d(t) := u\cdot t - \frac{1}{2}\cdot g\cdot t^2$ 	$u := 10\cdot\text{m}\cdot\text{s}^{-1} \leftarrow$ $d(t) := u\cdot t - \frac{1}{2}\cdot g\cdot t^2 \leftarrow$ 

To resolve the issue, perform the following steps on the converted plot (see Plot B):

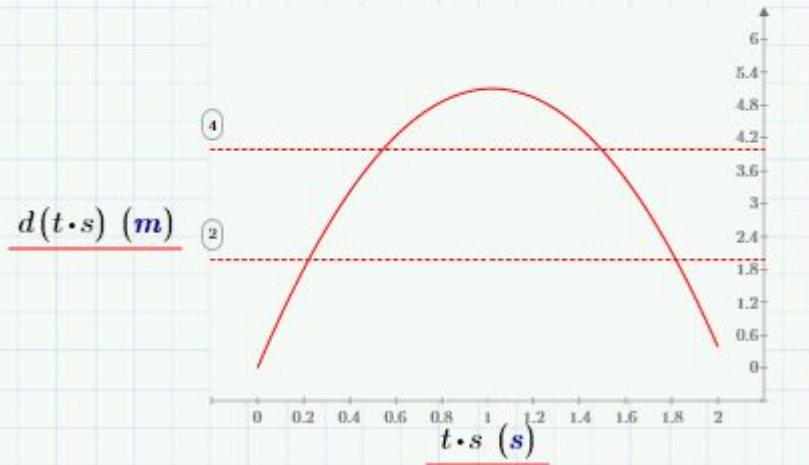
- Remove units from the tick marks and the marker callout values.
- Add units to the axis expressions.

The final result is shown in Plot C.

Plot C: Corrected Plot

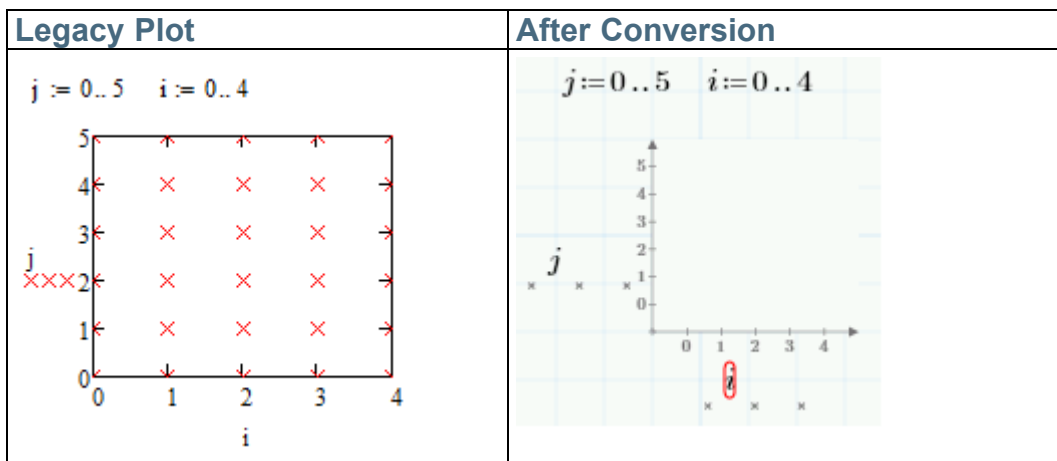
$$u := 10 \cdot \text{m} \cdot \text{s}^{-1}$$

$$d(t) := u \cdot t - \frac{1}{2} \cdot g \cdot t^2$$



Plotting Two Range Variables

When your legacy worksheet contains a plot with two range variables, the conversion result is as follows:

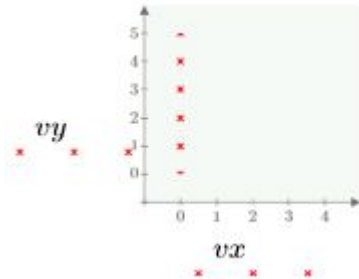


To resolve the issue, define vectors v_x and v_y above the converted plot:

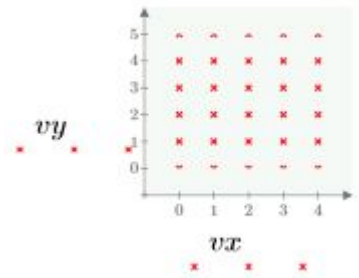
$$v_y := j$$

$$vx_i := i$$

Replace j and i in the plot with vy and vx .



Change the trace type to **Waterfall Trace**:



Note

This solution only applies to XY plots.

Headers and Footers

Legacy worksheet header:

Parametric Technology Corporation {f}	Mathcad Prime 1.0 {p}	Migration Guide {nn}
---------------------------------------	-----------------------	----------------------

Conversion output:

Parametric Technology Corporation {f}	Mathcad Prime 1.0 {p}	Migration Guide {nn}
---------------------------------------	-----------------------	----------------------

The following table outlines the legacy header and footer syntax and the equivalent command on the Mathcad Prime 1.0 **Document** tab, in the **Headers and Footers** group. Use the table to replace the legacy syntax character with the equivalent Mathcad Prime 1.0 header or footer field.

Legacy Syntax	Description	Mathcad Prime 1.0 Command
{f}	Insert file name	File ▶ Name
{p}	Insert file path	File ▶ Path
{n}	Insert page number	Page Number with choices
{nn}	Insert number of pages	Page Number with choices
{fd}	Insert date last saved	Saved Date
{ft}	Insert time last saved	Not available
{d}	Insert current date	Not available
{t}	Insert current time	Not available

The following header and footer customization options are not available in Mathcad Prime 1.0:

- Changing the number of the first page
- Using a different header and footer on first page
- Using a frame around the header, footer, or main worksheet

Note

- *You may need to resize images or format text to keep the content within the header or footer.*
- *If your header is too wide to fit, change the margins to wide margins.*



Supported and Unsupported Features

Deprecated Functions 38

This Appendix provides a comprehensive list of features and lists those that are not supported by Mathcad Prime 1.0.

Feature		In Mathcad Prime 1.0	Not in Mathcad Prime 1.0
New Ribbon			
	Ribbon user interface based on Microsoft Office	✓	
	Customize Quick Access Toolbar	✓	
	Physical constants accessible in the Ribbon	✓	
	Features and functionality are more visible and not hidden in menus and dialog boxes	✓	
Units			
	Dynamic units	✓	
	Mixed units in matrices and tables	✓	
	Mixed units in plots	✓	
	Choice of MKS, None, and customized unit system		✗
	Most functions now accept units	✓	
Functions			
	Two new and more flexible Fourier transform functions	✓	
	24 new Design of Experiments (DOE) functions that support units	✓	
	Data Analysis , Signal Processing, and Image Processing Extension Pack functions merged into Mathcad Prime 1.0	✓	
	Improved performance for a number of computational signal and image functions	✓	
	Most functions now accept units	✓	
	New Read/Write functions: READCSV and WRITECSV, READEXCEL and WRITEEXCEL, READTEXT and WRITETEXT	✓	

Feature	In Mathcad Prime 1.0	Not in Mathcad Prime 1.0
Math and Equation Editor		
Choice of solving algorithms		x
Custom currency symbols		x
Definition and evaluation on the same line	✓	
Error tracing	✓	
Explicit evaluation feature		x
Hexadecimal, octal, binary number format		x
Included worksheets can be cached for portability	✓	
Literal subscripts can be in the middle of a variable name for names like H ₂ O	✓	
Math styles		x
Mixed numbers (fraction)		x
Multilevel worksheet include (referenced files inside another worksheet)	✓	
New improved equation editor showing structure of math	✓	
New Labels feature that allows the use of same names for different elements, such as m for meters and m for variables.	✓	
Pdesolve and PDE solve blocks		x
Result Formatting: Tolerance: Zero and Complex threshold; Number format: Show exponents as E±000		x
Solve Blocks as a block that can be moved as a grouped regions with a border	✓	
Solve Blocks contain local variables.	✓	
Symbolic math		x

Feature	In Mathcad Prime 1.0	Not in Mathcad Prime 1.0
Matrices and Vectors		
Add and delete rows and columns from Ribbon or mouse	✓	
Insert matrix with desired rows and columns from Ribbon	✓	
Matrix navigator for panning and resizing large matrices	✓	
Mixed units in matrices	✓	
Operators		
Custom display of operators		✗
Custom operators, prefix and postfix operators		✗
Direct substitution of operators by overtype	✓	
Global definition		✗
Gradient operator		✗
Indefinite integral		✗
New Linear and Circular Convolution operators	✓	
New Polar operator	✓	
New Row operator for matrices	✓	
Picture operator		✗
Scalar operator	✓	
Square root and nth root operator combined into one operator	✓	
Two Derivative operators combined into one operator with multiple placeholders	✓	
Two Product operators combined into one operator with multiple placeholders	✓	
Two Summation operators combined into one operator with multiple placeholders	✓	

Feature	In Mathcad Prime 1.0	Not in Mathcad Prime 1.0
Plots		
2D plots traces: line, column, bar, stem, box, error, effects	✓	
Box plot	✓	
Contour plots (improved)	✓	
Effects plot	✓	
Hide axis expression	✓	
Line markers (unlimited number)	✓	
Mixed units in plots	✓	
Pareto plot	✓	
Plot legends and titles		✗
3D plots, animation, vector field plot, second y-axis		✗
Trace and zoom		✗
Polar plots	✓	
Waterfall plots and plotting matrices	✓	
Programming		
Debugging tools		✗
Easier editing of programs	✓	
Mathsoft controls and web controls		✗
New Programming operators: if/else-if/else and if/also-if/else	✓	
Programming operators can be inserted by typing	✓	
Document Features		
Align regions horizontally and vertically		✗ , use grid
Auto save		✗
Collapsed and locked areas		✗
Compare worksheets		✗
Draft view/Page view display	✓	
E-books		✗
Embedded math in text		✗
Find and Replace	✓	
Find all/Replace all		✗
Grid with two display settings	✓	
Hyperlinks		✗
Improved headers and footers	✓	
Landscape pages	✓	
Multiple tabbed worksheet interface	✓	

Feature		In Mathcad Prime 1.0	Not in Mathcad Prime 1.0
	Paste special		✘
	Print to XPS and PDF	✓	
	Region background color and border		✘
	Ruler and guidelines		✘
	Separate regions vertically or horizontally	✓	
	Spell check		✘
	Tab to different regions	✓	
	Templates		✘
	Text blocks that push down other regions	✓	
	Text styles		✘
	Tile worksheets		✘
	View regions		✘
	Wide pages in Draft view	✓	
	Worksheet protection		✘
	XMCD, MCD Converter (single or batch) for converting previous versions of Mathcad worksheets to Mathcad Prime 1.0 with annotated differences.	✓	
Documentation			
	New Help with bookmarks and math that can be copied to Mathcad Prime 1.0 worksheets	✓	
	New Tutorials	✓	
	Migration Guide for converting older worksheets to Mathcad Prime 1.0	✓	
	Detailed tooltips	✓	
Tables			
	Insert a table with desired rows and columns from the Ribbon	✓	
	Add and delete rows and columns from the Ribbon or by using keyboard shortcuts	✓	
	Tables include a header row for listing units	✓	
	Each column can contain values of different units	✓	

Feature		In Mathcad Prime 1.0	Not in Mathcad Prime 1.0
	Define multiple variables with vectors and units	✓	
Integration with other applications			
	Microsoft Excel 2007 support	✓	
	Excel Add-in		✗
	Import or paste from Excel	✓	
	Pro/ENGINEER integration	✓	
	Windchill Product Point integration	✓	
	READEXCEL function with preview and ability to edit function for parametric processing	✓	
	Windchill integration	✓	
	Automation API		✗
	Components		✗
	SDK		✗
	User-defined dlls, scripts		✗

Deprecated Functions

A number of Mathcad functions have been deprecated, and their support will be phased out in future Mathcad Prime releases. Refer to the Help Center for a list of deprecated functions and suggested alternate functions to use in converted or newly created worksheets. Deprecated functions work properly when the worksheets that contain them are converted to Mathcad Prime 1.0 format. They can also be used in Mathcad Prime 1.0 directly, but are not documented in the Help Center.