MathSetter 1.1

Welcome to MathSetter™ 1.1

In this booklet you will find everything you need to make the installation of MathSetter 1.1 an effortless project. Once again MathSetter in its new 1.1 version defines the standards for the most elegant and efficient way to set mathematical equations in a Quark XPress document.

Nothing in the market today can give you the ease of usage, the power of TEX within the XPress environment to accomplish the results obtained with MathSetter 1.1 while setting documents with TEX, the premier mathematical system used by publishers and mathematicians all over the world.

We are sure you will be as enthusiastic about this version as we are, knowing that you have our assurance of technical support and Blue Sky Research's unconditional guarantee of remaining behind our products for a lifetime.

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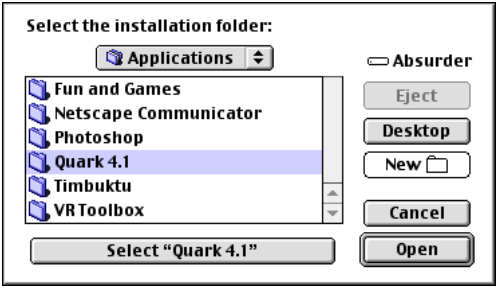
Installing MathSetter

The Easy Install option will do the work for you. It's that simple. After launching the MathSetter Installer, select your Quark XPress folder as the Destination folder, as in the illustration below. The MathSetter Installer will place the MathSetter XTension inside the XPress XTension folder, at the same time that the Computer Modern and MathTime fonts will be installed.


Select the installation folder:
Applications
Absurder
Fun and Games
Netscape Communicator
Photoshop
Quark 4.1
Timbuktu
VR Toolbox
Eject
Desktop
New
Cancel
Select “Quark 4.1”
Open

About TEX

TEX is an electronic text formatting and typesetting system developed by Professor Donald Knuth of Stanford University. TEX is recognized universally as the premier notation system used by both writers and publishers in the production of mathematical and scientific works.

The MathSetter package includes a TEX Reference Card with enough TEX to get you started. We recommend the purchase of a TEX reference book, such as *The TEXbook* by Donald Knuth.

In TEX, mathematical expressions are separated from the text of a document by a dollar sign (`$`) that surrounds the expression. Expressions that are to be included in the body of a paragraph have one dollar sign at the beginning and one at the end of the equation. For example to produce $a^2 + b^2 = c^2$ the TEX code one must input should be as follows:

```
$a^2+b^2=c^2$
```

For expressions that are to be set apart from the body of a paragraph, or "displayed equations", such as

$$a^2 + b^2 = c^2$$

two dollar signs should always precede and follow the expression:

```
$$a^2+b^2=c^2$$
```

As a general rule, TEX commands are preceded by backslashes (\). The commands used for superscript (^) and subscript (_) are notable exceptions. Curly braces ({}) are used to delineate specific sections to which a given TEX command applies. For example, if one wanted to create the equation $y + \frac{\pi}{\beta} = x$, one would input the following TEX code:

```
$y+{\pi \over \beta}=x$
```

If one were to omit the curly braces in the above equation, TEX would not understand that the command **\over** is only supposed to apply to the **\pi** being set over the **\beta**. The output would be $\frac{y+\pi}{\beta=x}$, a result which in most cases would be unintended.

(A note here to our foreign customers: to avoid confusion we would like to note that the following symbols can be found in the Universal keyboard as follows:

^ (superscript) using upper caps over the number 6
_ (subscript) underline to the right of 0 lower cap
{ (left curly brace) upper cap to the right of the letter P
} (right curly brace) upper cap to the right of left curly
\ (backslash) to the right of the plus-sign using lower caps)

Non-mathematical TEX commands, such as those to change the magnification (see page 15), are placed outside of the dollar signs but before the expression. All of this may be a bit confusing at first, but it would make it easier if you were to remember to surround your mathematical expressions with dollar signs. And of course it would help you to refer to your MathSetter User's Guide which is installed into your XPress folder for interactive examples.

Starting Up

Start Quark XPress. If the MathSetter XTension is newly installed you will be asked to enter a one-time activation key. Once XPress is open, select the MathSetter menu. (Note: your MathSetter serial number and registration string are printed on a separate card that is inside of your CD case).

Using MathSetter

This section of the MathSetter User's Guide walks you through the steps used to typeset a simple equation. If you have already installed MathSetter XTension this section is available as well in an interactive document called, surprisingly enough, "MathSetter User's Guide" inside your Quark XPress folder.

1 Using the XPress text tool enter a formula in the TEX form: `$$\sqrt{42}$$`

2 Select the formula as well surrounding the dollar signs.

3 Choose a format from the MathSetter menu. The format you choose specifies the font to be used for typesetting the equation, as well as the font size.

4 Select **Typeset Selected** from the MathSetter menu or use the keystroke **⌘U**.

5 The selected TEX text will be replaced with:

$$\sqrt{42}$$

The result is an XPress object which can be moved or manipulated with standard XPress functions.

Untypeset

There are the options for un-typesetting a formula. First select the typeset item, then: a) select **`UnTypeset`** from the MathSetter menu; b) double-click on the equation; or, c) use the keystroke **⌘U**. The TEX code can now be edited and re-typeset.

Retypeset

To re-typeset a formula using a different font or TEX format, select the formula and then pick the new format in the MathSetter menu. The new result will replace the previous formula.

Global changes can be made by selecting a range (or all) of the text box and selecting a different TEX format. All typeset items will be processed, one at a time, for re-typesetting with the new format.

The formats **MathTimes 10pt** and **Computer Modern 10pt** are designed for 10 point body type. The formats **MathTimes 12pt** and **Computer Modern 12pt** are designed for use with 12 point body type. The TEX token **\magnification** followed by a value can be used to enlarge or shrink the formula. The values used in TEX for magnification are 100 times the point size. To typeset an equation in a five point font, one would include the string **\magnification=500** before the equation. The example below prints the quadratic equation in 20 point type:

```
\magnification=2000
$$x={-b\pm\sqrt{b^2-4ac}\over{2a}}$$
```

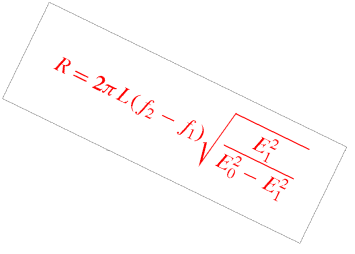
Blue Error Message Boxes

When a TEX error is encountered, a blue box will appear instead of the typeset result. This will show a message from TEX that details the problem. After reading, delete the error box, correct the problem, and typeset again. For example, typesetting the following text would show the blue error dialog:

```
\big\misteak
```

Color and Rotation

MathSetter formulas within your XPress documents may be colored or rotated using the standard XPress tools.



Note: formulas must be colored *before* being typeset in order for the color information to be processed properly.

ASCII Tags

If you would prefer to create your documents and input your equations in a external text editor such as Microsoft Word and then import them into Quark XPress later, you can do so by

including ASCII tags in a document. MathSetter places invisible ASCII tags in a document when an equation is selected and typeset for the first time (see the next section for more details). These tags can also be manually input.

The syntax for a tag is:

```
<TEX format=MathTimes10pt>$$\sqrt{42}$$</TEX>
```

Part by part:

`<TEX></TEX>` are the tag delimiters surrounding the text to be typeset.

`format=MathTimes10pt` specifies the format with which the equation will be typeset, and may be omitted for the default.

`$$\sqrt{42}$$` is the actual TEX code being typeset.

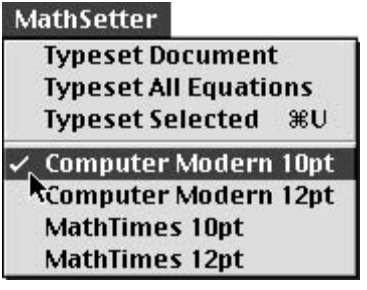
The **Typeset Document** command will typeset all of the tagged equations in a document. Manually adding ASCII tags to formulas produced in external editors saves the step of havng to select and typeset each equation individually.

Untypeset to ASCII Tags

Normally, untypeset material appears as TEX text in the Courier Bold font. Hidden markers are placed within the document to mark the range of the formula text. Holding down the Option key while untypesetting will cause the text to be converted to ASCII tags described above.

MathSetter

Menu Items



The MathSetter Menu

Typeset Document

Typesets all formulas in all boxes in the current document.

Typeset All Equations

Typesets all equations in the selected box. The process can be cancelled by clicking the button in the progress dialog.

Typeset Selected/
Typeset Equation/
Untypeset

The third menu item changes depending on the context of the current selection. It can always be accessed by the keystroke **⌘U**.

Typeset Selected

The selected text range will be typeset using the default format, indicated with a checkmark (✓) in the MathSetter menu format list.

Typeset Equation

The cursor has no characters selected and is within text that has been typeset before. It will be typeset with the same format used the previous time. The checked formula in the MathSetter menu will show the format.

Untypeset

If a selected text box contains items that have been typeset, **`Untypeset`** will appear in the menu. If the selection contains multiple typeset items, choosing **`Untypeset`** will untypeset all formulas within the range. Holding down the option key will cause the formula to be converted to ASCII tags.

Formats

Formats are pre-compiled TEX files containing macros and typesetting style information such as font definitions. A list of available TEX formats is displayed in the MathSetter menu. Each typeset item has a format associated with it, selected at the time it was typeset.

A checkmark indicates the current format selection. It changes depending on the selection in the XPress text box. If the selection is a formula or untypeset TEX, the format checked is the one

used to typeset it. If the selection is plain text that has not been typeset, the MathSetter's default format will be checked.

Formats for typesetting with the Lucida Bright font family or with AMS-TEX are available from Blue Sky Research for an additional fee. Custom formats can be created with Blue Sky Research's Textures application.

Frequently Asked Questions

What fonts can I use with MathSetter?

MathSetter is capable of typesetting with any installed PostScript or TrueType font. The three font families available from Blue Sky Research that contain the full array of characters necessary for typesetting complex mathematical equations are the Computer Modern family, the MathTimes family, and the Lucida Bright family. The Computer Modern and MathTime font families are included on the MathSetter CD; the Lucida Bright fonts

may be purchased from Blue Sky Research for an additional fee.

How can I change the color of my equation?

If you want to change the color of one of your equations, you must change the color of the untypeset text and then retypeset the equation. The color information is embedded in the XPress object that is returned by MathSetter and cannot be altered without first untypesetting the equation.

I have these LaTeX files; how do I get them into MathSetter?

While MathSetter will accept LaTeX or any other precompiled format, it will not work properly to typeset individual equations since each equation does not contain complete document information. A experienced TeX programmer could use Textures® to create a format that translated LaTeX math code into Plain TeX math code. For more information on Textures, contact Blue Sky Research.

I have 2,700 formulas in my document. How can I typeset them without individually selecting and typesetting them?

Special tags can be typed into the XPress text box around each formula. The `Typeset Document` menu item will find these tags and typeset them. This allows documents to be created with any text editor, imported into XPress, and typeset quickly and efficiently.

Are you displaying a PICT of the formula or what?

The MathSetter XTension creates XPress objects that are drawn within XPress' XTension environment. This means that they can be manipulated with standard XPress tools.

What are the limits to the use of TEX from XPress?

Almost any TEX language form can be used, including macros and precompiled formats. Besides formulas, MathSetter works well with TEX's `\halign` to typeset

tables. Each MathSetter object, however, is equivalent to the first DVI page of the TeX job, so anything after the first page will not appear.

What do I need to give to my publisher so that the book I created with MathSetter can be printed?

When the document has been completely typeset, give them a copy of the MathSetter Viewer XTension. The Viewer is available on the MathSetter CD. Copying the entire MathSetter Viewer folder will also give them the Computer Modern fonts that they may need. While the Computer Modern fonts may be distributed freely, the MathTime fonts are proprietary software and may not be distributed. Additional copies of the MathTime fonts may be purchased directly from Blue Sky Research.

The MathSetter Viewer may also be downloaded from the Blue Sky Research FTP Server.

I select the MathTime font from my XPress menu and it

won't typeset with it. What's wrong?

Fonts in typeset items are specified using the TeX language token `\font` and are not affected by the Quark XPress font selection. To change the font used to typeset an equation, select the appropriate format from the MathSetter menu.

How can I number equations automatically?

You can't, sorry. Each typeset item is a separate TeX display and unconnected in any way with another.

Contact Information

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Send electronic mail to our tech consultants at
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To help us diagnose the problem quickly and efficiently, please include the following information: MathSetter version, XPress version, System version, and hardware configuration.

TEX QUESTIONS

While we provide technical support for your use of MathSetter, we don't provide TEX programming assistance. We do offer a wide selection of reference manuals on these subjects and can refer you to qualified TEX consultants. Our web page will direct you to TEX related newsgroups and other TEX information resources.

Tech Support

Direct Line

We have an 800 number direct to our technical support staff. Live technical support is usually available from 9:00 AM to 4:30 PM PST Monday through Friday. (International customers call 503-222-9571.)

Suggestions?

We value your letters, faxes, and phone calls. Please let us hear if you have suggestions, complaints, or praise—or when you discover interesting things to do, or interesting ways to do things, with MathSetter.

Publication date May 15, 2000.