

This document proposes a simple workflow for producing documents in InDesign which require the inclusion of equations. This basic approach does not require any third-party plugins, but does require either Microsoft Word 2007 or Word 2010 for Windows, font(s) which include the OpenType [MATH] table<sup>1</sup> and InDesign.

There are a number of proprietary options available, some better than others. Being one of the designers involved in the Cambria Math font, and the layout system that works with it in Microsoft Word 2007 & Office 2010, I will focus on how to use these tools to produce documents with as basic a workflow as possible. There are some disadvantages to this system as well, but in the end it isn't much worse than other proprietary systems in terms of workflow, and produces LaTeX quality typesetting directly in your Word document, and indirectly in your InDesign document. Currently, the only readily available font that works with this system is Cambria Math, although Maxwell Math (the typeface used in this document) is in production, with an estimated release of version 1 scheduled for the summer of 2011. Such fonts require adherence to the Unicode standard (including the correct character encoding of math alphanumerics) and employ the [MATH] OpenType table. Maxwell is the principal font used throughout this document, and is being designed along these lines to be an alternative to Cambria Math. The font used in the screenshots is Cambria Math.



The first requirement is the use of applications which support the OMML standard. Currently this includes Word 2007 for Windows and Office 2010 for Windows. Cambria Math ships with stand-alone versions of these as well as with Windows Vista and Windows 7. Cambria and Cambria Math may also be licensed from Ascender Corp. Which version of InDesign or platform it is run on does not matter.

The principal focus will be on new documents, rather than existing ones as formatting standards and conversion tools are too variable to predict.

Word's equation tool (nb. *not* the same as its predecessor, *Equation Editor*<sup>2</sup>), takes input in 'linear format', which is similar to that used for TeX. I won't go into the workings of this—for more details, refer to Murray Sargent's blog at: [blogs.msdn.com/murrays/](http://blogs.msdn.com/murrays/)

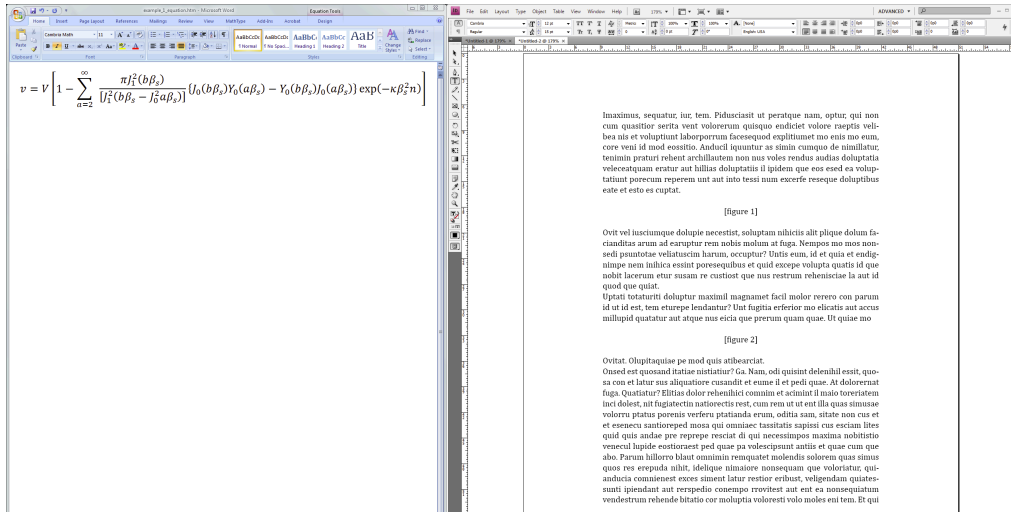
It may be that your entire content is originally input in Word. I'm making the distinction of your text content being handled separately from your equations, although the equations may be in-line or display. Each equation will be treated as a figure, and can be organized as you see fit. The equations could run throughout the text input in Word, or they could be input as separate equations, with each having its own page in a Word document (eg. page 1 has figure 1 on it; page 2, figure 2 and so on). Any number of other scenarios could exist, but the basic steps following are the same. If you place a document from Word (.docx file), then the text will be preserved, but equations will be blank (excluded)—so the equations will then have to be placed individually as per these instructions. Equations in Word can also be copied and pasted into other documents, but this converts the equation to an image and therefore the equation becomes of fixed resolution and is less appropriate for print material.

<sup>1</sup> See 'Mathematical Typesetting' booklet for more details.

<sup>2</sup> 'Equation Editor' is a stand-alone plugin made by Design Science. For many years this shipped with Microsoft Office, but was replaced completely in Word 2007.

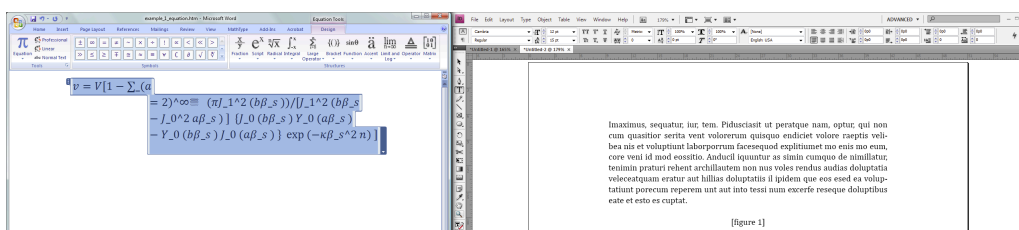
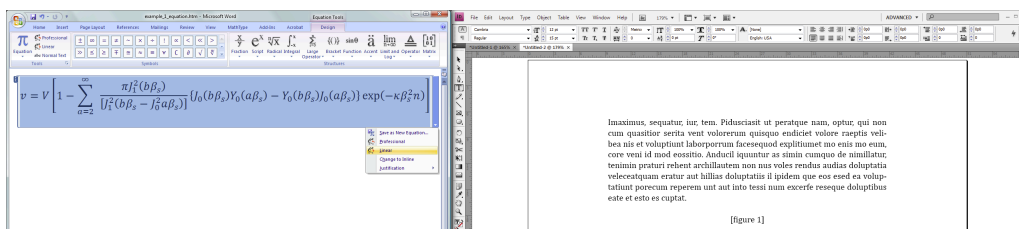
Enter your equation using the equation tool in Word. It may be best to isolate each one as single figures (you'll see why later).

Here we have an equation as layed-out in Word on the left, and InDesign on the right. This presupposes again that text is handled separately and that each equation is entered as a figure.



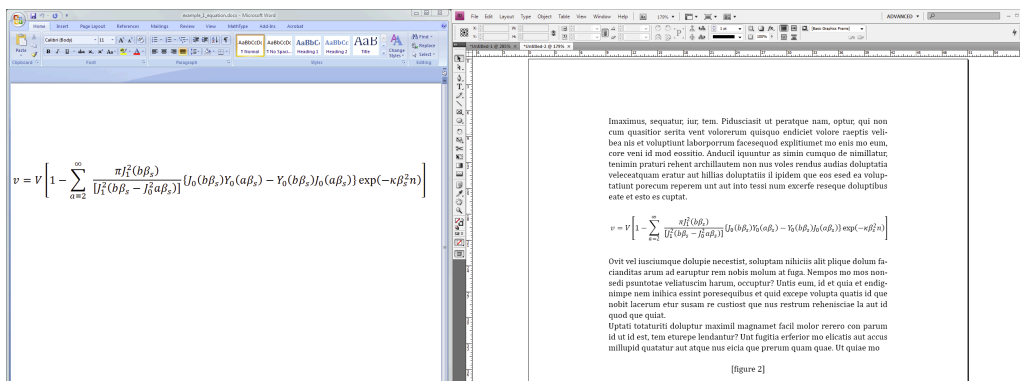
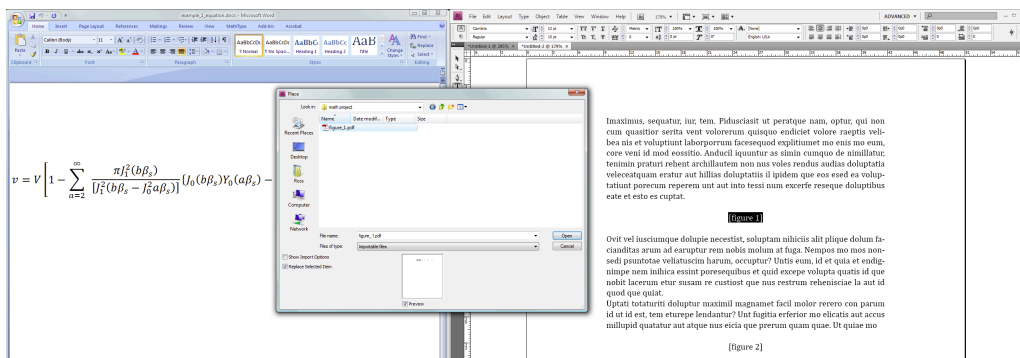
We are going to export the single equation as a PDF file to embed in InDesign, but first it is a good idea to add a bit of meta-data to the PDF, which acts as an interim source. The Word document should remain the principal source for the equations/figures, but as the PDF is the file that is actually going to be embedded, you can add some information to it so the equation can be re-created and edited independent of the source Word file.

So, click the right option of the Word math zone and convert the equation back to 'linear' mode:



The equation has now been (temporarily) converted back to linear format. It should already be selected, so copy it (ctrl+c), and then undo (ctrl+z) to get back the original equation. Now you are going to print to PDF. Open up the resulting PDF file, go to 'file > properties' and paste the copied text into either the subject or keywords fields. The title field should probably reference which figure the file is. Of course this is the simplest system, and for complicated documents, you would probably include more meta-data. The principal reason is that once the PDF is placed in the InDesign file, it is what is linked back to (rather than a Word file). The meta-data is information included with that link—therefore one can copy the plain text linear format equation, open Word, create a math zone, paste the linear format equation and convert it back to 'professional' mode and then edit it as need be, without necessarily needing the original Word file. The meta- data is also stored in resulting PDFs, so the backing text string is retained.

Next, place the PDF into the InDesign file at the appropriate location (eg. replace a figure placeholder with the PDF equation).



The equation PDF has now been placed inline with the text, with a little modification to its story frame so alignment is correct. The same can be done with 'inline' equations.

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