Advice for authors

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We welcome mathematical contributions to M500 at any level from trivia to serious research. We prefer an informal style but articles should be reasonably well written. We almost always edit submitted material—sometimes quite considerably and often without the author's intervention—for the purpose of improving clarity and mathematical presentation. It is appropriate to point out that contributions, possibly from authors whose first language is not English, will if necessary be 'cleaned up' to a high standard by our Editorial Board and volunteer proof-readers.

We are always especially interested in material that can be readily understood by first-year mathematics undergraduates. A typical article on a mathematical topic would be 2–6 pages. Longer articles are accepted at the Editor's discretion but usually limited to one per issue. Please send items for publication to editor@m500.org.uk.

The most important advice we can offer is: PLEASE READ RECENT ISSUES OF THE MAGAZINE AND PLEASE CONFORM TO ITS STYLE. Please also note that M500 is printed on paper using only black ink and that the text block is only 115 mm wide.

Plain English is preferred to mathematical jargon. Avoid unreasonable use of symbols. So write 'for all positive integers n' rather than some diabolical expression like '$\forall n \in \mathbb{Z}^+$', write 'therefore' instead of '$\therefore$', etc. etc. Do not start a sentence with a symbol, or a word like 'calorie'. Do not use theorems, pictures, diagrams, tables, etc. as nouns, and be aware that we might move such items from their original locations.

Try to avoid more than one level of subscripting or superscripting. Generally, avoid any unnecessary reduction of type size; so $a/(2b)$ is better than $\frac{a}{2b}$, for instance. Avoid redundant brackets, non-standard fonts for variables and bizarre deviations from standard mathematical presentation. Avoid excessive spoon-feeding.

LaTeX M500 is set using LaTeX, and therefore this is the preferred option for submitted material. If you are interested in learning LaTeX, the Open University School of Mathematics and Statistics have produced some useful resources to help OU students get started and which you can access by signing in to here: `https://learn2.open.ac.uk/course/view.php?id=206217&cmid=1172763`. Or you can find out everything you need to know from Wikipedia's *Guide to LaTeX*.

For those of you who are already set up to use LaTeX, the TeX file for these notes, available as Sample LaTeX file in `m500.org.uk/magazine/`, is essentially the same as for the magazine itself and we suggest that you

download it for your use. Here are a few rules. Please comply with them.

Ensure there is extra space on both sides of the main symbol in displayed mathematics. For example, write '~=~ 1' rather than ' = 1' in

$$\cos^2\theta + \sin^2\theta \;=\; 1.$$

Ensure that mathematical items are properly separated. Remember that in math mode a comma is not followed by any space; so, for example, write '$a=1$, $b=2$, $c=3$' rather than '$a=1, b=2, c=3$'.

Use '\dfrac{a}{2b}' to get a full-size fraction $\dfrac{a}{2b}$ (rather than '{a \over 2b}'). Use '\dots' rather than '...'. Use '\cdot' or '\times' for explicit multiplication. A decimal point is an ordinary full stop. Remember to put a backslash after a full stop that is not the end of a sentence.

Reset the appropriate counters if you are automatically numbering equations, etc. Ensure that LaTeX commands you define won't clash with existing commands.

LyX If you have never used LaTeX before, then you could seriously consider using LyX instead. LyX is a fully featured document processor with a mathematical formula editor which, it is claimed, is easily the best. All the power of LaTeX is available. But, and this is what might make the system attractive, you enter complicated mathematical equations easily by point-and-click from pop-up and drop-down menus. Mathematical formulæ are displayed on the screen as you enter them. The main benefit, however, is that LyX can create LaTeX source code which I can copy and paste into M500. You need to send me the .tex and .pdf files, which you create by exporting your document as LaTeX (pdflatex) as well as PDF (pdflatex). To find out more, go to `https://www.lyx.org/Home`.

Other word processors The existence of non-LaTeX word processors is an unfortunate complication because I usually have to convert mathematical constructs by hand. This might explain to some authors why their contributions get held up. My recommendation would be to give up and go over to LaTeX. From my own experience, once you have mastered the basic principles you will wonder why you ever used anything else.

If you cannot create a LaTeX document, AVOID SYMBOLS THAT ARE NOT IN THE SET {., ,, ;, :, ', @, *, (,), [,], {, }, =, -, +, /, <, >, ?, !, ^, _}. This is important because symbols outside the set (such as the minus sign and fancy quotes) need action by me—with the consequent likelihood of human error. Use ^ and _ only for superscripts and subscripts respectively. Greek letters should be spelled out, capitalizing the first letter for the upper

case versions; alpha, beta, gamma, Gamma, ..., omega, Omega.

If you are using WORD, DO NOT CREATE MATHEMATICAL OBJECTS WITH THE EQUATION EDITOR. They might look pretty on your screen, but to me they are a nuisance because I would have to copy them entirely by hand—with the inevitable introduction of errors. So, for example, write

sec^2 theta - tan^2 theta = 1

instead of using the equation editor. Note that the symbol between 'theta' and 'tan' is a dash, not a minus sign. Even better, prepare your article as if you were doing it in LaTeX, so that the above would be written as

$$ \sec^2 \theta - \tan^2 \theta ~=~ 1. $$

Fortunately, plain English requires little additional work and is very much preferred. So, if you can't do LaTeX, please write mathematical stuff in English, as, for instance, integral from -infinity to infinity e^{-x^2} dx = sqrt{pi}. With a little imagination and common sense you should be able to make yourself clear. Remember to send me the PDF file of your article as well as the original word processor document. A warning: I cannot deal with a large document where much of the text has to be entered by hand; I would then have to ask you to get it converted to LaTeX.

Short contributions The above rules really only apply to substantial articles involving many pages. We also welcome contributions of more modest length, anything from few lines to a couple of pages. Please feel free to send us mathematical notes, letters, experiences, reminiscences, anecdotes, etc. and hopefully we are not too fussy about how they arrive. We are especially interested in mathematical problems and the solutions thereof. And please note that there is no time-limit for submitting an answer to a problem that has appeared in M500.

Unwelcome material Yes, we do seem to get our fair share of things that we cannot possibly use. To give you some idea of the sort of stuff we will not accept, here is a short list: (i) defamation of an identifiable living individual; (ii) defamation of a named existing organization or any of its products or services; (iii) material that the Editor would not wish his wife or his servants to see; (iv) racism; (v) blasphemy; (vi) material that ridicules an M500 author other than the Editor; (vii) solutions to Open University assignment questions; (viii) notices for events due to occur before the magazine is likely to reach its readers; (ix) material published elsewhere and protected by copyright, except under exceptional circumstances in which case the submitter must obtain permission; (x) material that is blatantly

erroneous; (xi) material of an excessive length that cannot be justified for the nature of the subject-matter; (xii) off-topic material of excessive length; (xiii) excessively cranky treatments of standard mathematical topics; (xiv) puerile material; (xv) proofs of Fermat's Last Theorem.

Personal information If you choose to submit an article for M500, the Editor will acquire your name and at least one of your email and postal addresses. This personal information, as well as any other personal information that you have chosen to provide within the body of your article, will be kept indefinitely on the Editor's computer system and its backups. Your name and, if supplied, your email address will also be stored on computer systems operated by proofreaders to whom the M500 issue containing your article is sent for examination. The proofreaders for an M500 issue are drawn from, at the Editor's discretion, members of the M500 Society Committee, academic colleagues of the M500 Editor, and authors, possibly including yourself, of substantial contributions to the same issue. When your article is published your name will appear as author of your article in the online version of M500 as well as any online document, including the M500 Index, that cites, indexes or catalogues your work. Any personal information of a descriptive nature that you have chosen to provide about yourself within the body of your article will also appear. Personal information contained in an issue of M500 may be stored indefinitely in computer systems operated by the persons who acquire it. For general information on how the M500 Society handles personal information, see `m500.org.uk/privacy/`.

About M500 The magazine M500 is published six times a year, with publication dates 28 February, 30 April, 30 June, 31 August, 31 October and 31 December. Upon publication, an issue of M500 is distributed to all members of the M500 Society. It may also be given to non-members at the discretion of the Editor or other M500 Society members. Twelve months after publication an issue of M500 is placed on the M500 Society's web site at `m500.org.uk/magazine/` for free browsing or downloading by anybody. When an issue of M500 is uploaded to the M500 Society's web site we usually remove authors' personal identifiers other than names. In particular, we remove private email and postal addresses. Personal information of a descriptive nature will usually be retained. Errors in the original published version may be corrected by us for the online version but, unless the error is obvious, we usually seek approval from the authors. We will, without seeking approval, alter or remove material to which any of items (i)–(vi) and (ix) of Unwelcome material, above, might apply.