

# Preparing Authored Books Using the cambridge7A Class File

Subtitle, If You Have One

Cambridge University Press

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LaTeX\\_files/cambridge7A.zip](https://authornet.cambridge.org/information/productionguide/LaTeX_files/cambridge7A.zip)



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## Preface

This guide is for authors preparing a book for Cambridge University Press using L<sup>A</sup>T<sub>E</sub>X and the cambridge7A class file. It assumes you have some familiarity with L<sup>A</sup>T<sub>E</sub>X – preferably with book.cls, which is itself somewhat different from article.cls. It is not a substitute for the L<sup>A</sup>T<sub>E</sub>X manual itself.

The cambridge7A class file preserves the standard L<sup>A</sup>T<sub>E</sub>X interface, so any document that can be produced using the standard L<sup>A</sup>T<sub>E</sub>X2e book.cls can also be produced with cambridge7A.cls. However, the measure (i.e. width of text) for cambridge7A.cls is different from that for book.cls, so line breaks will change and tables, figures and long equations may need adjusting if you’ve already used book.cls to create a draft. Commands that differ from the standard L<sup>A</sup>T<sub>E</sub>X interface, or that are provided in addition to the standard interface, are documented below.

This guide was created by processing the following (the full root file is in Appendix B:

```
\documentclass[spanningrule]{cambridge7A}% options
\usepackage{natbib}
\usepackage[figuresright]{rotating}
\usepackage{floatpag}
\rotfloatpagestyle{empty}
\usepackage{amsthm}
\usepackage{graphicx}
\usepackage{txfonts}
\usepackage[scaled=0.9]{couriers}
\usepackage{multind}\ProvidesPackage{multind}
:
```

Even if your book does not use references, rotated items, computer code, theorems, graphics, or multiple indexes, it will not hurt to include the packages

above. If you include `multind.sty`, you must also insert `\ProvidesPackage{multind}`; this command sends a message to the class file to restyle the index into the `cambridge7A` style.

Don't use the following standard document class options:

- `10pt`, `11pt`, `12pt`;
- `oneside` (`twoside` is the default);
- `fleqn`, `leqno`, `titlepage`, `twocolumn`.

## A word about style

If you so wish, the source files for this guide can be used as templates for (parts of) your book. It's a really good idea to observe good programming style – after all,  $\text{\LaTeX}$  is a programming language. Make sure for example, that you list all of your definitions and commands in the preamble, and that you don't include any that never get used. Don't duplicate them. Don't use different macros to do the same job. Don't overwrite them without cause; if you need locally to `\renewcommand`, then make sure you revert back to the original command as soon as you can. Make sure the lines in your root file are short: note there's a difference between line feed and carriage return in some text editors. Don't include lots of local page make-up commands unless you're producing final files for printing, or unless you need to do so for float control. Structure your document using the environments or commands provided rather than sticking in `\vspace` followed by some text in bold, for example. Don't number displayed items to which you're not going to refer. If you are going to refer to things, then use `\label`, `\ref`, `\cite`, etc. When you make a decision, document it in the root file, so you can refer back to it during the writing of your book (which can take place over several years!). For the same reason, keep a style sheet in which you list things like your hyphenation or capitalization rules. Most importantly, *be consistent in the way you typeset your book*.

All the above will make the writing, editing, copyediting, correction and reformatting of your book much more manageable.

## Workflow

At some stage in the writing of your book, certainly before it's finished, you should discuss with your CUP editor how the production of your book will be handled. We need to know: is the book being prepared by you in its final

design; who is imposing final design or inputting copyeditorial corrections; when and how will the index be compiled; will the book be printed from final files provided by you; how competent in  $\text{\LaTeX}$  are you? The answers to these questions will help determine the workflow your book will follow during production. In any event, before the book is finished, you should supply your editor with a sample file for evaluating and testing.

Note: books, and chapters, must carry copyright lines if they are to be posted on personal or institutional webpages.



# PART ONE

---

## THE FIRST PART



# 1

## Introduction and basic design elements

### 1.1 Getting started

Copy `cambridge7A.cls` into the correct subdirectory on your system. To run this guide through  $\text{\LaTeX}$ , you need in addition the following style files:

```
natbib
rotating
floatpag
amsthm
graphicx
multind
```

If you include `multind.sty`, you must also insert the command `\ProvidesPackage{multind}`; it simply sends a message to the class file to re-style the index into the `cambridge7A` style.

In general, the following standard document class options should *not* be used:

- `10pt`, `11pt`, `12pt`;
- `oneside` (`twoside` is the default);
- `fleqn`, `leqno`, `titlepage`, `twocolumn`.

### 1.2 Master root file

Create a master root file for the book. The preamble should begin like so:

```
\documentclass{cambridge7A}
\usepackage{natbib}
\usepackage{rotating}
\usepackage{floatpag}
```

```

\rotfloatpagestyle{empty}
\usepackage{amsthm}
\usepackage{graphicx}
\usepackage{txfonts}
\usepackage{multind}\ProvidesPackage{multind}

```

In the preamble are specified, for the entire book:

- font (default<sup>1</sup> = Computer Modern; this guide is in Times)
- depth of section numbering (default = three levels)
- theorem style (no default; must specify)
- french spacing (default = yes)
- enumerate style (default = arabic numbered with full stop, but not in this guide)
- copyright line for the start of each chapter (default = no)
- spanning rule (default = no, but we include the rule here)

The root file for this guide is given in Appendix B.

### 1.2.1 Fonts

Discuss the choice of font with your CUP editor. In most cases, it will be one of the following:

- Computer Modern (default)
- mathptmx, available from  
<http://www.ctan.org/tex-archive/fonts/psfonts/psnfss-source/mathptmx/>
- txfonts (chosen for this guide), available from  
<http://www.ctan.org/tex-archive/fonts/txfonts/>

If you deliver your files in the default Computer Modern font, we are likely to ask our typesetters to change it to some variety of Times, our preferred font. However, if your book contains critical line or page breaks (e.g. in reproduced computer code), we will probably leave it in Computer Modern. If you typeset in Computer Modern and have computer code in a monospaced font, we recommend you also use the `couriers.sty` package, as follows:

```
\usepackage[scaled=0.9]{couriers}
```

in order that the code font is comparable in size to the regular text font.

<sup>1</sup> The default is determined by the class file. Changes from the default must be specified in the root file.

If you deliver your files in either mathptmx or txfonts, we are unlikely to change the font.

A word about these two font packages: mathptmx changes the default roman font to Adobe Times but does not support bold math characters. Txfonts does support bold math, but the kerning of subscripts and superscripts is not ideal and sometimes requires manual intervention. (N.B. You must load txfonts after amsthm; otherwise you will get some ‘already defined’ messages.) We don’t give times.sty as an option because it mixes Computer Modern and Times fonts, and there is a clash between math and italic characters. With txfonts you can get round this clash by using  $\varv$  instead of  $\mathit{v}$ . Another way is to use the ‘upright’ lower-case greek characters defined by  $\nu$ up,  $\alpha$ up etc. Thus

$$\nu, \nu, \nu, \nu$$

is produced by

```
$$
\mathit{v}, \varv, \nuup, \nu
$$
```

### 1.2.2 Depth of section numbering

L<sup>A</sup>T<sub>E</sub>X provides five levels of section heads. In cambridge7A, the first three levels are numbered. You can reduce the depth to which section heads are numbered (please don’t increase it). For example, if you want only sections and subsections numbered, insert the following in the preamble:

```
\setcounter{secnumdepth}{2}
```

If you want only sections numbered, change the {2} to {1}.

### 1.2.3 Theorem style

We use the amsthm package. See Chapter 3 and amsthdoc, the documentation for the package.

The theorem style is specified in the master root file – among other things, all enunciations should be numbered in a single sequence, preferably within each chapter, for ease of navigation. If numbering is getting out of hand, try numbering enunciations by section rather than by chapter alone. More details are given in the Section 3.1.

### 1.2.4 French spacing

The `\frenchspacing` option is chosen by default. This ensures that no extra space is inserted after full stops. If you have a strong reason to override this default, key `\nonfrenchspacing` in the preamble.

### 1.2.5 Lists

The `cambridge7A` class provides the following standard list environments:

- numbered lists, created using the `enumerate` environment;
- bulleted lists, created using the `itemize` environment;
- labelled lists, created using the `description` environment.

In addition, exercises may be organised into lists; see Chapter 7 for details.

The default `enumerate` environment numbers each list item with an arabic numeral followed by a full stop. You can specify how lists and sublists are ‘numbered’; for math books we much prefer (i), (ii), etc. as the top level, as in this guide, so please cut and paste the following into the preamble of your master root file:

```
\def\makeRRlabeldot#1{\hss\llap{#1}}
\renewcommand\theenumi{{\rm (\roman{enumi})}}
\renewcommand\theenumii{{\rm (\alph{enumii})}}
\renewcommand\theenumiii{{\rm (\arabic{enumiii})}}
\renewcommand\theenumiv{{\rm (\Alph{enumiv})}}
```

Numbering of lists need not be consistent across the book, but it’s attractive if it is. Note that for perfect alignment within the list, you now need to add the width of the widest label in square braces, as shown below. With the above commands included,

```
\begin{enumerate}[(ii)]
  \item First, the first item \ldots
    \begin{enumerate}[(b)]
      \item First subentry \ldots
      \item Second subentry
    \end{enumerate}
  \item Second, the next item \ldots
    \begin{enumerate}[(b)]
```

```

\item Another subentry
  \begin{enumerate}[(1)]
    \item First subsubentry \ldots
      \begin{enumerate}[(A)]
        \item First subsubsubentry \ldots
      \end{enumerate}
    \end{enumerate}
  \end{enumerate}
\end{enumerate}

```

produces the following list:

- (i) First, the first item ...
  - (a) First subentry ...
  - (b) Second subentry
- (ii) Second, the next item ...
  - (a) Another subentry
    - (1) First subsubentry ...
    - (A) First subsubsubentry ...

Of course, you can always override the automatic numbering by including an optional argument, like so: `\item[(I)]`, but we'd rather you didn't unless absolutely necessary.

### 1.2.6 Spanning rule at the start of each chapter

The page design for your book may include 'spanning rules' at start of chapters, between the chapter number and the chapter title, as in this guide. Spanning rules are obtained as a document class option:

```
\documentclass[spanningrule]{cambridge7A}
```

### 1.2.7 Abstracts and key words

Please include in your root file an abstract and key words for the book using the `\bookabstract` and `\bookkeywords` commands in the body of the root file: see Appendix B for examples. List up to five key words. If there is an agreed international classification for your subject, please let us know what it is, and use terms/codes from that. For mathematics books the key words/codes should be chosen from the 3 digit levels in the 2010 Mathematics Subject classification. The abstract and key word list might not be printed in the book, but

will be associated metadata which will be helpful for users of the electronic version of your book, and in marketing.

In addition, you may add an abstract and key words for individual chapters using `\chapterabstract` and `\chapterkeywords`. These will not be printed, but may be useful as metadata (as above).

### 1.2.8 Figures and tables

The `cambridge7A` class will cope with most positioning of your figures and tables. The `graphicx.sty` package is the recommended way to incorporate figures, which should be in the form of `.eps` files. Convert other figure formats to this form, rather than compile the book directly to `.pdf`, as this can produce platform-dependent output. Each figure should be followed by a caption that explains what the illustration is about without having to read the text. The `\caption` command will also number the figure.

The caption for tables should precede the actual table, but otherwise the same comments apply.

Figures and tables can be set in portrait or landscape (rotated) style. See Chapter 4 for further information for more details about figures and tables.

### 1.2.9 Footnotes and endnotes

Though the `cambridge7A` class can accommodate footnotes or endnotes, but not both, we prefer you to use footnotes.<sup>2</sup>

Endnotes are inserted in the text in a similar way to footnotes, but with the `\endnote` command; for example,

```
When the Richardson number\endnote{Lewis Fry Richardson
(1881--1953).\label{richardson}} increases \ldots
```

will produce ‘When the Richardson number<sup>5</sup> increases ...’ in the text – assuming this is the fifth endnote of the chapter. Use `\theendnotes` in the root file to output the endnotes at the end of the book, before the references, but after any appendices, where they will appear, ordered by chapter, in an unnumbered ‘chapter’.

### 1.2.10 Appendices

Any appendices to your book should be placed immediately before the references, or endnotes in the event you have them.

<sup>2</sup> Footnotes are arabic numbered, and the counter is reset for each chapter.



**One appendix**

If you have a single appendix, code it as

```
\oneappendix
\chapter{Appendix}
:
\endappendix
```

**Several appendices**

The following code will generate appendices that are appropriately labeled and named.

```
\appendix
\chapter{First appendix title}
\section{Heading}
:
\chapter{Second appendix title}
\section{Heading}
:
\endappendix
```

Equations, theorems etc., tables and figures should be handled exactly as in the main part of the book. The numbering will be taken care of automatically. See Appendix C for examples.

**1.2.11 References**

Reference lists, or bibliographies, can be at the end of the book or at the end of chapters, or even both in some cases. Any of the standard citation styles – numbered, [12], abbreviated author, [Se], or author–date, (Serre 1958), – are permitted though we prefer the author–date style, as it’s most helpful to readers. Beware of long strings of references if you switch to this style from a numbered one, and write appropriately to avoid repeating names. See Chapter 5 for details.

**1.2.12 Indexes and Glossaries**

Most books should include an index, usually a subject index. Others may also include an author index as well. The construction of indexes is usually the responsibility of the author, and it is advisable to make use of  $\LaTeX$ ’s automatic indexing facility to create an index before production begins. See Chapter 6 for more information.

You may wish also to include a glossary (they can be helpful in interdisciplinary books) in which definitions or explanations of key ideas are organised alphabetically. See Section 6.5 for more details.

## 2

## Numbering and headings

### 2.1 Chapter numbering

Chapter numbers are generated automatically when the full book is compiled with all chapters in place. Unnumbered chapters, such as the preface, are specified using the `\chapter*` command.

### 2.2 Section numbering

L<sup>A</sup>T<sub>E</sub>X provides five levels of section heads, and all are defined in the `cambridge7A` class file: `\section`, `\subsection`, `\subsubsection`, `\paragraph`, and `\subparagraph`. The first three levels are numbered, unless you use a starred version such as `\section*`.

If your book includes an unnumbered chapter (e.g. `\chapter*{Introduction}`), then ensure that all the numbered elements within that chapter (e.g. section heads, equations, figures, etc) are unnumbered, by using `\section*{...}` for example. Otherwise, sections will be numbered 0.1, 0.2, etc. The same applies to headings subsidiary to an unnumbered section heading, e.g. subsections, or items that are numbered by section.

### 2.3 Running heads

In `cambridge7A` books, running heads are

- chapter titles on even-numbered pages (versos), and
- section numbers (if they exist) and titles on odd-numbered pages (rectos).

If the chapter or section title is long, a shorter version for the running head can be specified using an optional argument to the `\chapter` or `\section` command, for example:

```
\chapter[Running head title]{Full chapter title}
```

To ensure that the full versions of chapter and section titles are given in the table of contents, simply do the following:

```
\chapter[TOC entry]{Full chapter title}
\chaptermark{Short title, i.e., running head entry}
```

```
\section[TOC entry]{Full section title}
\sectionmark{Short title, i.e. running head entry}}
\sectionmark{Short title, i.e. running head entry}
```

The TOC entry may in fact be the same as the full chapter or section title. But note that for sections, you need the optional argument to `\section`, even if ‘TOC entry’ is in fact the same text as ‘Full section title’. Also, the `\sectionmark` has to be entered twice as shown, because the first `\sectionmark` deals with the header of the page that the `\section` command falls on, and the second deals with subsequent pages. However, there’s no need to include section number in the `\sectionmark` argument.

## 2.4 Parts

Sometimes you may wish break the book into segments that are bigger than chapters. For this you can use the `\part` command. This will create a Part Title page which will always appear on an odd-numbered page the verso of which will be blank. An entry of the Table of Contents will be created automatically: parts are numbered in ‘words’. For example

```
\part{The First Part}
```

produces the Part Title on page 1. Use max caps for Part Titles, as here. It’s good style to enter Part Titles in the root file.

## 2.5 Other

Numbering of other items, such as equations, figures and tables, theorems etc., references, exercises, are dealt with in relevant chapters.

## 3

# Mathematics

### 3.1 Why are we using amsthm.sty?

Many authors already use `amsthm`, so we've made it part of our distribution. It provides a way of allowing varying types of theorem-like enunciations to be laid out differently but consistently, and to be numbered automatically within a numbering system of your choice; and it's easy to implement. To implement it just include near top of the root file the following lines:

```
\documentclass{cambridge7A}  
\usepackage{amsmath}  
\usepackage{amsthm}
```

Note that if you are using `amsmath.sty`, it *must* precede `amsthm.sty`.

Instructions for `amsthm.sty` are documented separately in `amsthdoc.pdf`. We've included `amsthm.sty` and `amsthdoc.pdf` in this distribution for your convenience, but you may find more recent versions on the web. The following sections discuss basic features, plus a few extras.

To save time, you can copy and paste the code given in Appendix A into your root file. This is an extensive list of theorem-like environments, both numbered and unnumbered.

Our preferred style is that theorems, definitions, remarks, etc. should be numbered in a single sequence by chapter (so Chapter 4 might have Definition 4.1, Lemma 4.2, Lemma 4.3, Proposition 4.4, Example 4.5). This helps navigation.

To do this we used `\newtheorem{theorem}{Theorem}[chapter]`. To number the elements by section, replace `[chapter]` with `[section]`.

## 3.2 amsthm styles

If no `\theoremstyle` command is given in the preamble of the root file, the style used will be `plain`. To specify a different style (we only recommend `plain` and `definition` styles), divide your `\newtheorem` commands into groups and preface each group with the appropriate `\theoremstyle`.

### 3.2.1 amsthm plain style

The `plain` style is normally used for theorems, lemmas, corollaries, propositions, and conjectures. These can be numbered or unnumbered.

### 3.2.2 amsthm definition style

The `definition` style is used for definitions, remarks, notation, conditions, problems, and examples; it can also be used for problems and exercises (see Chapter 7). These can be numbered or unnumbered.

The example below illustrates the use of both styles, in numbered and unnumbered form. The code

```
\theoremstyle{plain}% default
\newtheorem{theorem}{Theorem}[chapter]
\newtheorem{lemma}[theorem]{Lemma}
\newtheorem*{corollary*}{Corollary}

\theoremstyle{definition}
\newtheorem{definition}[theorem]{Definition}
\newtheorem{example}[theorem]{Example}

\begin{theorem}
  Let the scalar function \ldots
\end{theorem}
\begin{lemma}[Tranah]
  The first-order free surface amplitudes \ldots
\end{lemma}
\begin{definition}
  The series above is the Green function \ldots
\end{definition}
\begin{lemma}[\cite{MenshEst}]
  The exotic behaviours of Lagrangian \ldots
\end{lemma}
```

```
\begin{corollary*}
  Let  $G$  be the free group on  $\ldots$ 
\end{corollary*}
```

will produce the following output:

**Theorem 3.1** *Let the scalar function ...*

**Lemma 3.2** (Tranah) *The first-order free surface amplitudes ...*

**Definition 3.3** The series above is the Green function ...

**Lemma 3.4** ((Menshikov, 1985)) *The exotic behaviours of Lagrangian ...*

**Corollary** *Let  $G$  be the free group on ...*

**Definition 3.5** The correlation between the real and estimated flow ...

**Example 3.6** Consider spatial and temporal problems ...

### 3.3 Proofs

The proof environment is also part of the amsthm package and provides a consistent format for proofs. For example,

```
\begin{proof}
  Use  $K_\lambda$  and  $S_\lambda$  to translate combinators
  into  $\lambda$ -terms. For the converse, translate
   $\lambda x \dots$  by  $[x] \dots$  and use induction
  and the lemma.
\end{proof}
```

produces the following:

*Proof* Use  $K_\lambda$  and  $S_\lambda$  to translate combinators into  $\lambda$ -terms. For the converse, translate  $\lambda x \dots$  by  $[x] \dots$  and use induction and the lemma.  $\square$

#### 3.3.1 Adapting the ‘Proof’ heading

An optional argument allows you to have a different name from the simple ‘Proof’. For example, to change the heading to read ‘Proof of the Pythagorean Theorem’, key the following:

```
\begin{proof}[Proof of the Pythagorean Theorem]
  Start with a generic right-angled triangle \ldots
\end{proof}
```

It produces:

*Proof of the Pythagorean Theorem* Start with a generic right-angled triangle  
 ... □

### 3.3.2 Displayed expressions

Only number displayed expressions, such as equations, to which you will refer. Please punctuate all displayed expressions as if they were in-line text. In multiline displays, only number the last line (unless you refer to intermediate lines). If you wish lines on multiline displays to be numbered in a subsequence, either use the `subeqn` environment, or else use the `\renewcommand`, as explained in the *L<sup>A</sup>T<sub>E</sub>X* book, to set up a new sequence, reverting to the original sequence when required. If you wish all the items in a multiline display to have the same, single number, centred on the display, use the `array` environment with the display. Items in appendices are numbered separately. See Appendix C for an illustration.

The default style is to number equations in one sequence by chapter. If you wish to number by section, then include the command

```
\renewcommand\theequation{\arabic{chapter}.\arabic{section}.\arabic{equation}}
```

at the end of the preamble. To illustrate the above, here is a single-line display:

$$E = Mc^2. \tag{3.1}$$

Here are examples of a multiline displays:

$$\left. \begin{array}{l} x = a + b \\ y = c + d \\ z = e + f. \end{array} \right\} \tag{3.2}$$

$$\begin{aligned} x &= a + a + b + b \\ &= 2a + b + b \\ &= 2a + 2b. \end{aligned} \tag{3.3}$$

### 3.3.3 Typesetting a proof without a □

Use `proof*`; this is not part of the `amsthm` package. For example,



```
\begin{proof*}
  The apparent virtual mass coefficient \ldots
\end{proof*}
```

produces the following:

*Proof* The apparent virtual mass coefficient ...

### 3.3.4 When proofs end with an unnumbered display

Providing the proof does not end with a numbered display, you can avoid the  $\square$  dropping onto a following line at the end of a proof by using `\qedhere`:

```
\begin{proof}
  \ldots\ and, as we are all aware,
  \[
    E=mc^2. \qedhere
  \]
\end{proof}
```

produces the following:

*Proof* ... and, as we are all aware,

$$E = mc^2. \quad \square$$

This solution is not part of the `amsmath` package. When used with `amsmath` version 2 or later, `\qedhere` will position  $\square$  flush right; with earlier versions,  $\square$  will be spaced a quad away from the end of the text or display.

If `\qedhere` produces an error message in an equation, try using `\mbox{\qedhere}` instead.

### 3.3.5 Placing the $\square$ after an unnumbered displayed eqnarray

This solution is also not part of the `amsmath` package. To enable it, you need to use the starred version of `proof`, and add both `\arrayqed` and `\arrayqedhere`, as shown in the following example:

```
\begin{proof*}
  The following equations prove the theorem:
  \arrayqed
  \begin{eqnarray}
    \epsilon &=& -\frac{1}{2}U_0\frac{\mathrm{d}q'^2}{\mathrm{d}x}\nonumber\end{eqnarray}
```

```

&= & 10 \nu \frac{q'^2}{\lambda^2} .
\arrayqedhere
\end{eqnarray}
\end{proof*}

```

This produces the following:

*Proof* The following equations prove the theorem:

$$\begin{aligned}
 \epsilon &= -\frac{1}{2} U_0 \frac{dq'^2}{dx} \\
 &= 10\nu \frac{q'^2}{\lambda^2}.
 \end{aligned}
 \quad \square$$

Again, the above solution *only* works if the display is unnumbered.

## 4

# Figures and tables

### 4.1 Figures

The `cambridge7A` class will cope with most positioning of your figures. As captions fall below figures, the figure must be included first, then the caption, then the label. This is illustrated in Figure 4.1. The `cantor1.eps` file has been called in using `\usepackage{graphicx}` in the preamble. Note that if you are producing a list of illustrations (using `\listoffigures`), you need to repeat the caption (or place a short version) in square braces, but without the full point.

### 4.2 Tables

The `cambridge7A` class will cope with most positioning of your tables. Table captions must be included first, then the label, then the body of the table. This is illustrated in Table 4.1. Note that the square brace option below is only required if you intend to produce a list of tables. You need to use the `minipage` environment if you have long table captions, or if you have footnotes.

#### 4.2.1 My vertical rules have disappeared

Vertical rules in tables are not Cambridge house style; `cambridge7A.cls` removes these rules automatically by redefining the `tabular` environment. Well-organized tables rarely require vertical rules. Where necessary, grouping can be indicated by the judicious use of extra horizontal space (see Section 4.2.2). The amended `tabular` also inserts extra vertical space above and below the horizontal rules produced by `\hline`.

Vertical rules can be reinstated, if necessary. Tables will look squashed, as in

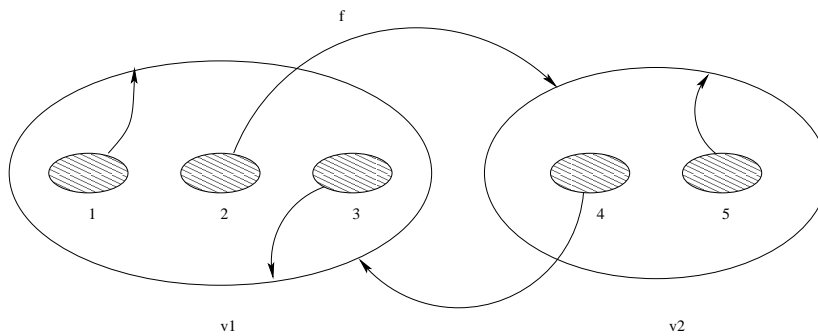


Figure 4.1 A Cantor repeller. Long figure captions will be indented left and right; short ones will be centred by default.

---

```

\begin{figure}
\includegraphics[scale=0.55]{cantor1.eps}
% note that the square brace option below is only required
% if you intend to produce a list of illustrations
\caption[Shortened figure caption for the list of illustrations]
{A Cantor repeller. Long figure captions will be indented left
and right; short ones will be centred by default.}
\label{cantor}
\end{figure}

```

---

the  $\LaTeX$  book, because the extra vertical space around horizontal rules will be removed. To reinstate rules globally, add the command `\reinstaterules` in the preamble; to reinstate rules for an individual table, place the `\reinstaterules` command immediately after the relevant `\begin{table}`.

The extra space around horizontal rules will also be removed if you use `array.sty`; you can ignore this effect, because the space can be reintroduced globally by the typesetters.

### 4.2.2 Adding space between columns

You can add space (2pt in this example) between all columns using `\addtolength\tabcolsep{2pt}`. If you wanted to expand the space only between columns 1 and 2, say to 25pt, use `\begin{tabular}{@{}c@{\hspace{25pt}}}ccc@{}` (see Table 4.1).

Table 4.1 *Longer table captions have to be placed inside a minipage, otherwise they overhang the table rules.*

Figure <sup>a</sup>	$hA$	$hB$	$hC$
1	$\exp\left(\pi i \frac{5}{8}\right)$	$\exp\left(\pi i \frac{1}{8}\right)$	0
2	-1	$\exp\left(\pi i \frac{3}{4}\right)$	1
3	$-4 + 3i$	$-4 + 3i$	$\frac{7}{4}$
4	-2	-2	$\frac{5}{4}i$

<sup>a</sup> *Note:* You must also use a minipage environment if you have footnotes.

---

```

\begin{table}
\begin{minipage}{180pt}
% note that the square brace option below is only required
% if you intend to produce a list of tables
\caption[Shortened table caption for the list of tables]
{Longer table captions have to be placed inside a minipage,
otherwise they overhang the table rules.}
\label{sample-table}
\addtolength{\tabcolsep}{2pt}% to stretch columns, if required
\begin{tabular}{@{}c@{\hspace{25pt}}ccc@{}}
\hline \hline
Figure\footnote{\textit{Note:} You must also use a minipage
environment if you have footnotes.} & $hA$ & $hB$ & $hC$\\
\hline
1 & $\exp\left(\pi i \frac{5}{8}\right)$ & $\exp\left(\pi i \frac{1}{8}\right)$ & $0$\\
2 & $-1$ & $\exp\left(\pi i \frac{3}{4}\right)$ & $1$\\
3 & $-4+3i$ & $-4+3i$ & $\frac{7}{4}$\\
4 & $-2$ & $-2$ & $\frac{5}{4}i$ \\
\hline \hline
\end{tabular}
\end{minipage}
\end{table}

```

---

### 4.2.3 Adding space between rows

If you need additional separation between rows (for example, between rows 2 and 3 in the body of Table 4.1), adding `[10pt]` immediately after the double

backslash at the end of row 2 will add a 10pt vertical space (the equivalent of a blank line at this typesize). This method is more controllable than inserting a horizontal rule.

### 4.3 Landscape figures and tables, using `rotating.sty`

Landscape figures and tables are always rotated anticlockwise, and may be typeset using the `rotating.sty` package with the `[figuresright]` option. At final make-up stage it is preferable for landscape pages to fall on verso (left-hand) pages.

In addition to `rotating.sty`, include `floatpag.sty` and the command `\rotfloatpagestyle{empty}`. This combination ensures that headers and footers are removed from the landscape page:

```
\usepackage[figuresright]{rotating}
\usepackage{floatpag}
\rotfloatpagestyle{empty}
```

In some dvi previewers, floats may not appear rotated. If this happens, you need to convert the dvi file to PostScript or pdf in order to see the page properly. You can also rotate figures using the appropriate optional argument in the `\includegraphics` command: only the illustration is rotated, so running heads are included as usual and captions will appear at the foot of the figure rather than to the side, both of which are unsatisfactory in general.

When converting a PostScript file to a pdf file, you may find that the landscape page comes out upside-down. If this happens, you need to modify some of the settings in your conversion program.

#### 4.3.1 Coding for landscape figures

Figure 4.2 was produced as follows:

```
\begin{sidewaysfigure}
\centering
\includegraphics[scale=0.85]{cantor1.eps}
% note that the square brace option below is only required
% if you intend to produce a list of illustrations
\caption[Landscape figure]{A Cantor repeller. Figure captions
will be centred by default.}
\label{sidecantor}
\end{sidewaysfigure}
```



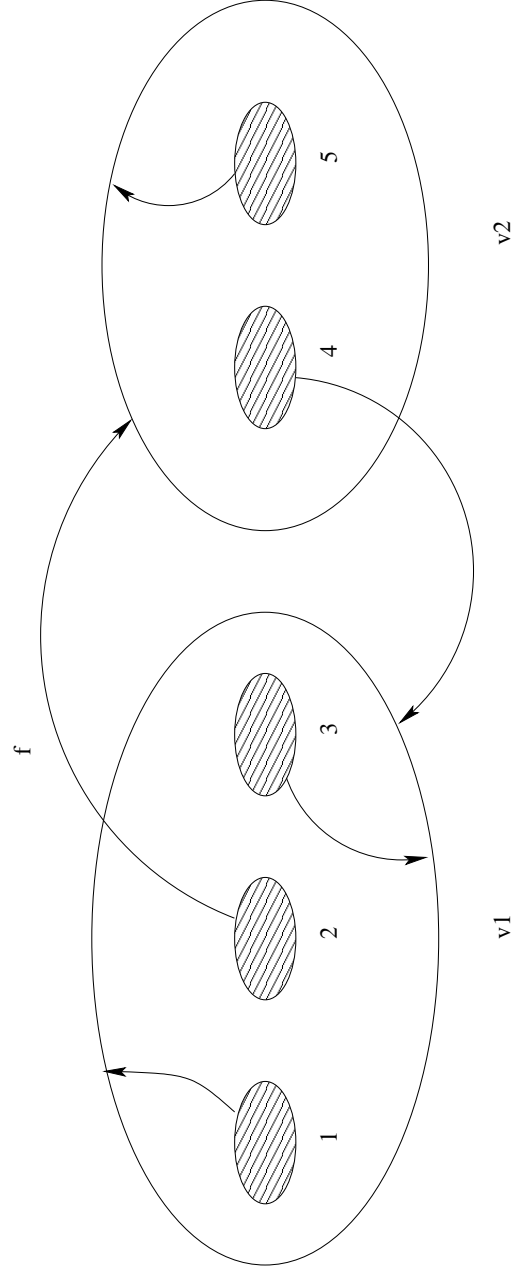


Figure 4.2 A Cantor repeller. Figure captions will be centred by default.



Table 4.2 Grooved ware and beaker features, their finds and radiocarbon dates.

Context	Length	Breadth/ Diameter		Depth	Profile	Pottery	Flint	Animal Bones	Stone	Other	C14 Dates
		m	m								
Grooved Ware											
784	–	0.9	0.18	Sloping U	P1	×46	×8		Hammerstone	×2 bone	2150 ±100 BC
785	–	1.00	0.12	Sloping U	P2–4	×23	×21			–	–
962	–	1.37	0.20	Sloping U	P5–6	×48	×57			–	1990 ±80 BC (Layer 4)
983	0.83	0.73	0.25	Stepped U	–	×18	×8		–	Fired clay	1870 ±90 BC (Layer 1)
Beaker											
552	–	0.68	0.12	Saucer	P7–14	–	–	–	–	–	–
790	–	0.60	0.25	U	P15	×12	–	–	Quartzite-lump	–	–
794	2.89	0.75	0.25	Irreg.	P16	×3	–	–	–	–	–

## 5

# Reference and bibliography lists

### 5.1 References and Bibliographies

Reference lists consist of documents you actually cite in the text; bibliographies may also list items that are not actually cited so may, for example, contain further reading. They should be included at the end of the book.

Reference lists can be created automatically from a bibliographic database, a `.bib` file, or manually; in either instance you should refer to items in the text using the referencing commands in  $\text{\LaTeX}$  as this will mean your book can be much more easily updated and corrected.

### 5.2 Automatic lists using $\text{\BibTeX}$

You will need a `.bib` file, a `.bst` file that creates a reference list from that database, and a style file to interpret the commands properly. For the last, we have chosen to use the `natbib` package because of its versatility.

First, call in `natbib.sty`. The bibliographic database for this guide is called `percolation.bib`; and we use `cambridgeauthordate.bst`. Place the final two commands at the point where you would like the references to appear:

```
:  
\usepackage{natbib}  
:  
% \renewcommand{\refname}{Bibliography}  
\bibliography{percolation}  
\bibliographystyle{cambridgeauthordate}
```

Note that by uncommenting the fifth line shown above, you can change the heading from ‘References’ to ‘Bibliography’. Next,  $\text{\LaTeX}$  your book twice.

Then run `BIBTEX` by executing the command

```
bibtex cambridge7Aguide
```

Finally, run your book through `LATEX` twice again. This series of runs will generate a file, the actual reference list, called `cambridge7Aguide.bbl`, which will then be included by `\bibliography{percolation}`.

Suppose you have cited 8 entries from the ‘percolation’ database, e.g. `\citealp{MenshEst}`; `\citealp{Kasymp}`; `\citealp{VGfH}`; `\citealp{HamMaz94}`; `\citealp{HamLower}`; `\citealp{AiBar87}`; `\citealp{MMS}`; and `\citealp{HamAtomBond}`; the output will be just those 8 entries. This guide only cites two items from the database so only two items are included in the reference list (see page 48). You can add entries to the list without referring to them using the `\nocite` command: if you do this the References should be named as Bibliography. This guide only cites two items from the database so only two items are included in the reference list.

### 5.3 Citations using natbib commands

Here are some of the basic citation commands available with the natbib package; there are many more if you cannot find what you need in this list. Bear in mind that `Menshikov (1985)` or `(Menshikov, 1985)` read best, depending on context.

<code>\citep{MenshEst}</code>	→ (Menshikov, 1985)
<code>\citep[see][p.\$\\$, \$34]{MenshEst}</code>	→ (see Menshikov, 1985, p. 34)
<code>\citep[e.g.][ ]{MenshEst}</code>	→ (e.g. Menshikov, 1985)
<code>\citep[Section~2.3]{MenshEst}</code>	→ (Menshikov, 1985, Section 2.3)
<code>\citep{MenshEst, VGfH}</code>	→ (Menshikov, 1985; Vyssotsky et al., 1961)
<code>\cite{MenshEst, VGfH}</code>	→ Menshikov (1985); Vyssotsky et al. (1961)
<code>\citealt{MenshEst}</code>	→ Menshikov 1985
<code>\cite{MenshEst}</code>	→ Menshikov (1985)
<code>\citealp{MenshEst}</code>	→ Menshikov, 1985
<code>\citeauthor{MenshEst}</code>	→ Menshikov
<code>\citeyearpar{MenshEst}</code>	→ (1985)
<code>\citeyear{MenshEst}</code>	→ 1985

### 5.3.1 How to change reference entries from author–date to numbers

Some authors are used to `\cite{...}` producing a reference such as [11] in their manuscripts. If you prefer this style, which we do not recommend for long lists of references, use the following option within the `natbib` package:

```
\usepackage[numbers]{natbib}
```

## 5.4 Keying in your reference list for an author–date system

If you are not constructing a list of references from a database, then the entries need to be keyed as below. Note that if you uncomment the first line, you can change the heading from ‘References’ to ‘Bibliography’:

```
% \renewcommand{\refname}{Bibliography}
\begin{thebibliography}{8}
  \expandafter\ifx\csname natexlab\endcsname\relax
    \def\natexlab#1{#1}\fi
  \expandafter\ifx\csname selectlanguage\endcsname\relax
    \def\selectlanguage#1{\relax}\fi

  \bibitem[Aizenman and Barsky, 1987]{AiBar87}
    Aizenman, M., and Barsky, D.~J. 1987.
    Sharpness of the phase transition in percolation models.
    {\em Comm. Math. Phys.}, {\bf 108}, 489--526.

  \bibitem[Hammersley, 1957]{HamLower}
    Hammersley, J.~M. 1957.
    Percolation processes: Lower bounds for the critical probability.
    {\em Ann. Math. Statist.}, {\bf 28}, 790--795.

  \bibitem[Hammersley, 1961]{HamAtomBond}
    Hammersley, J.~M. 1961.
    Comparison of atom and bond percolation processes.
    {\em J. Mathematical Phys.}, {\bf 2}, 728--733.

  \bibitem[Hammersley and Mazzarino, 1994]{HamMaz94}
    Hammersley, J.~M., and Mazzarino, G. 1994.
    Properties of large Eden clusters in the plane.
    {\em Combin. Probab. Comput.}, {\bf 3}, 471--505.

  \bibitem[Kesten, 1990]{Kasymp}
    Kesten, H. 1990.
    Asymptotics in high dimensions for percolation.
    Pages 219--240 of: Grimmett, G.~R., and Welsh, D.~J.~A. (eds),
    {\em Disorder in Physical Systems: A Volume in Honour of John Hammersley}.
    Oxford University Press.
```

```

\bibitem[Menshikov, 1985]{MenshEst}
  Menshikov, M.~V. 1985.
  Estimates for percolation thresholds for lattices in  $\mathbb{R}^n$ .
  {\em Dokl. Akad. Nauk SSSR}, {\bf 284}, 36--39.

\bibitem[Menshikov et~al., 1986]{MMS}
  Menshikov, M.~V., Molchanov, S.~A., and Sidorenko, A.~F. 1986.
  Percolation theory and some applications.
  Pages 53--110 of: {\em Probability theory. Mathematical
  statistics. Theoretical cybernetics, Vol. 24 (Russian)}.
  Akad. Nauk SSSR Vsesoyuz. Inst. Nauchn. i Tekhn. Inform.
  Translated in {\em J. Soviet Math}. {\bf 42} (1988), no. 4,
  1766--1810.

\bibitem[Vyssotsky et~al., 1961]{VGFH}
  Vyssotsky, V.~A., Gordon, S.~B., Frisch, H.~L., and Hammersley, J.~M. 1961.
  Critical percolation probabilities (bond problem).
  {\em Phys. Rev.}, {\bf 123}, 1566--1567.

\end{thebibliography}

```

## 5.5 Keying in your reference list for a numbered system

For this style, you may omit the optional square brace shown in Section 5.4. Once again, by uncommenting the first line, you can change the heading from ‘References’ to ‘Bibliography’:

```

% \renewcommand{\refname}{Bibliography}
\begin{thebibliography}{8}

\bibitem[AiBar87]
  Aizenman, M., and Barsky, D.~J. 1987.
  Sharpness of the phase transition in percolation models.
  {\em Comm. Math. Phys.}, {\bf 108}, 489--526.
  :
  :
\bibitem[Vyssotsky et~al., 1961]{VGFH}
  Vyssotsky, V.~A., Gordon, S.~B., Frisch, H.~L., and Hammersley, J.~M. 1961.
  Critical percolation probabilities (bond problem).
  {\em Phys. Rev.}, {\bf 123}, 1566--1567.

\end{thebibliography}

```

If you add a reference, remember to process  $\text{\LaTeX}$  enough times to get the numbering right in the text.

## 5.6 Including references at the end of chapters

When references are included at the end of chapters, you need to add the command `\chapterreferences`, as indicated below. In addition, if you wish to change the *References* heading to *References for Chapter 5* (or indeed to something entirely different, for example *Further Reading*), you can redefine `\refname` as shown:

```
\renewcommand\refname{References for Chapter~\thechapter}
\chapterreferences
\bibliography{percolation}\label{refs}
\bibliographystyle{cambridgeauthordate}
```

### References for Chapter 5

- Menshikov, M. V. 1985. Estimates for percolation thresholds for lattices in  $\mathbf{R}^n$ . *Dokl. Akad. Nauk SSSR*, **284**, 36–39.
- Vyssotsky, V. A., Gordon, S. B., Frisch, H. L., and Hammersley, J. M. 1961. Critical percolation probabilities (bond problem). *Phys. Rev.*, **123**, 1566–1567.

## 5.7 Including references at the end of chapters *and* at the end of the book

As illustrated in this guide, add `\bookreferences` immediately before the call to the bibliography file. Of course the bibliography file at the end of the book would normally be a concatenation of references from the various chapters, but here we are simply using the same one:

```
\renewcommand{\refname}{Bibliography}% if you prefer this heading
\bookreferences
\bibliography{percolation}\label{refs}
\bibliographystyle{cambridgeauthordate}
```

## 6

# Indexes and glossaries

### 6.1 Inserting indexing commands

You need to code the text so that L<sup>A</sup>T<sub>E</sub>X knows what terms to index, and how to organise them.

If, for example, you have ‘chocolate cake’ in the text, you add this phrase to the index simply by adding the `\index` command to the source code:

```
...chocolate cake\index{chocolate cake}
```

If the text doesn’t actually say ‘chocolate cake’, but you want that in the index, then you should simply type `\index{chocolate cake}` in the source file at the appropriate point.

#### 6.1.1 Subentries

If your text contained several varieties of cake, you might also want them listed under ‘cake’ with subentries; to achieve this, use the `!` as shown below:

```
...chocolate cake\index{chocolate cake}\index{cake!chocolate}  
...lemon cake\index{lemon cake}\index{cake!lemon}
```

Running the `makeindex` program (see Section 6.2) will create an index which contains, in the correct alphabetical order, the following entries:

```
cake  
  chocolate  
  lemon  
chocolate cake  
lemon cake
```

You can also have subsubentries (but there is no support for subsubsubentries):

```
...Belgian chocolate cake\index{cake!chocolate!Belgian}
```

### 6.1.2 Page ranges

If cake appears over several consecutive pages, then the make the first instance:

```
\index{cake|{}
```

and the final one:

```
\index{cake|})}
```

When compiled, the index will read (assuming the entries fell on pages 5 and 10 respectively):

cake, 5–10

The above also works with subentries.

### 6.1.3 Entries without page numbers

Sometimes you want to add a cross-reference with no page number:

```
...birthday party\index{cake!orange|see{orange cake}}
```

will give you:

cake  
orange, *see* orange cake

### 6.1.4 Entries starting with non-alphabetic characters

If you have index entries in which the first character is not alphabetical, e.g. `\emph{cake}` or `$_lambda$` you need to tell L<sup>A</sup>T<sub>E</sub>X where to place that word in the final index. So you would ask for `\emph{cake}` to be sorted as if it were the word ‘cake’ and `$_lambda$` as if it were the word ‘lambda’.

The following example shows how to do that. The characters before the @ symbol in the expression `lambda@$_lambda$` are for sorting purposes only; what appears after the symbol is printed in the index. The character *λ* will appear before lemon cake, since this is what we’ve requested:

```
...lemon cake\index{lemon cake}
...$_lambda$\index{lambda@$_lambda$}
...\emph{cake}\index{cake@\emph{cake}}
```



The output will be as follows:

```
cake
 $\lambda$ 
lemon cake
```

## 6.2 Creating a single index using *makeidx.sty*

The basic `\index` command in  $\text{\LaTeX}$  does not print anything in its argument but merely ‘writes’ it to a different file with the extension `.idx`. (The *makeidx* programme turns that into a file with the extension `.ind`, which is the one in which all terms are grouped together in alphabetical order, with all instances and no duplications, i.e. it would not write 123, 123 against a term in the index. The `.ind` file will not change automatically, even when the `.idx` file changes: you need to rerun *makeidx* to change that.)

You will need the package *makeidx.sty*, and the following commands in the preamble of the root file:

```
\documentclass{cambridge7A}
\usepackage{makeidx}
\makeindex
\begin{document}
```

To generate a single index, normally a subject index, the commands would take the form:

```
\index{diffraction}
\index{force!hydrodynamic}
\index{force!interactive}
```

at the appropriate points in the text.

The command `\printindex` (which outputs the index) should be placed immediately before the end of the document. The (optional) `\indextext` command will insert a phrase below the ‘Index’ chapter heading, across two columns, the index entries themselves being set in double-column form.

```
\indextext{Page numbers in italics indicate ...}
\printindex
\end{document}
```

Run your files through  $\text{\LaTeX}$  enough times so that the labels, etc., are stable. Then execute the command:

```
makeindex cambridge7Atest
```

To include the index, you need to run  $\LaTeX$  one more time.

### 6.3 Creating multiple indexes using `multind.sty`

This guide has been prepared using `multind.sty`. This style file redefines the `\makeindex`, `\index` and `\printindex` commands to deal with multiple indexes.

Suppose you want to create an author index and a subject index. The entries should be in the text as usual, but take the following form:

```
\index{authors}{Young, P.D.F.}
\index{authors}{Tranah, D.A.}
\index{authors}{Peterson, K.}
\index{subject}{diffraction}
\index{subject}{force!hydrodynamic}
\index{subject}{force!interactive}
```

In the preamble, you need to add the following lines:

```
\usepackage{multind}\ProvidesPackage{multind}
\makeindex{authors}
\makeindex{subject}
```

It is crucial to add the command `\ProvidesPackage{multind}`; this will send a message to the class file to re-style the index into the `cambridge7A` style. You will get a warning in your log file:

```
LaTeX Warning: You have requested package ‘’,
                but the package provides ‘multind’.
```

which can be ignored. At the point where you wish your indexes to appear, you then need the commands:

```
\printindex{authors}{Author index}
\printindex{subject}{Subject index}
```

Run your book through  $\LaTeX$  enough times so that the labels, etc., are stable. Then execute the commands:

```
makeindex authors
makeindex subject
```

To include the indexes, you need to run  $\LaTeX$  one more time.

## 6.4 Warning about `index.sty`

This style file also permits multiple indexes.

However, in order to implement `index.sty`, it's proved necessary to modify a number of  $\LaTeX$  commands seemingly unrelated to indexing, namely, `\@starttoc`, `\raggedbottom`, `\flushbottom`, `\addcontents`, `\markboth`, and `\markright`. Naturally, this could cause incompatibilities between `index.sty` and any style files that either redefine these same commands or make specific assumptions about how they operate.

The redefinition of `\@starttoc` is particularly bad, since it introduces an incompatibility with the AMS document classes.

For this reason we do not currently recommend using `index.sty`.

## 6.5 Inserting glossary commands

You may make use of the `glossary.sty` style file contained within the package <http://www.ctan.org/tex-archive/macros/latex/contrib/glossary/>.

Briefly, you may generate a glossary by inserting the following commands:

```
\glossary{name={cat},
           description={a domesticated mammal}}

\glossary{name={rabbit},
           description={a rodent, common in the wild or as a pet. Occasionally farmed}}

\glossary{name={dog},
           description={a domesticated mammal, used as a pet or for work purposes}}
```

where appropriate.

You then need to have the following commands in the root file:

```
\usepackage[style=list]{glossary}
\makeglossary
:
\printglossary
```

(see Appendix B for details). The following example assumes that your root file is called `tranah.tex`. Run the files through  $\LaTeX$ , then run the file:

```
makeindex -s tranah.ist -t tranah.glg -o tranah.gls tranah.glo
```

and finally, run the files through  $\LaTeX$  again. If you don't want page numbers included (as in this guide) then add the `number=none` optional argument, like so:

```
\usepackage[number=none]{glossary}
```

# 7

## Exercises

### 7.1 Organizing

Exercises can be handled in more than one way, as an enunciation or within a list, depending on your style and preference. They can be scattered through the book, or organised in sets at the end of sections or chapters, or some combination. But if you mix up styles we strongly recommend you give the different types different names, for example, Exercises could be scattered in the text, and Problems could be organised into sets, or vice versa.

#### 7.1.1 Scattered through the text – `exer` or `exer*`

There are two ways of handling exercises scattered through a chapter.

- (i) Use `amsthm` to define an `exer` or `exer*` environment subject to `\theoremstyle{definition}`. See Chapter 3 for details. These environments must be defined in the root file for this document. Exercises created with `exer` are numbered, if at all, in the same sequence as theorems etc.
- (ii) Use the `exerciselist` environment, described below, with a single item. Exercises created within this environment will be numbered in a sequence separate from that for theorems etc.

#### 7.1.2 At the end of sections – `exerciselist`

The `cambridge7A` class file defines the `exerciselist` environment for setting lists of numbered exercises at the end of sections. These will not automatically be gathered under a heading, so there will be no mention of them in the Table of Contents. Therefore you may wish to list them under a `\subsection` and set the heading depth appropriately or use the appropriate `\addcontentsline` command.

There is an option for adding a label such as ‘Exercise’ or ‘Problem’. The code

```
\begin{exerciselist}[Exercise]
  \item Show that the link between shock formation and
    film rupture is invoked here because of the \ldots
  \item Show that the physical interpretation of \ldots
    \label{physi-ex}
\end{exerciselist}
```

will produce

**Exercise 7.1.1** Show that the link between shock formation and film rupture is invoked here because of the ...

**Exercise 7.1.2** Show that the physical interpretation of ...

Like other numbered environments, individual exercises (e.g. Exercise 7.1.2) can be labeled for automatic cross-referencing.

### 7.1.3 At the end of chapters – exercises

If you are gathering all exercises at the end of a given chapter, use the `exercises` environment rather than `exerciselist`. This environment generates an entry in the table of contents and starts a new unnumbered section and running head. For example,

```
\begin{exercises}
  \item Let the film thickness be  $h_0$ ,
    \begin{equation}
      h = h_0 H \xi.
    \end{equation}
    \label{exerciseeq}
    Integrating once, \ldots
  \item Assuming the flow far away from \ldots
\end{exercises}
```

will produce (note the mention in the Table of Contents!)

## Exercises

7.1 Let the film thickness be  $h_0$ ,

$$h = h_0 H \xi. \quad (7.1)$$

Integrating once, ...

7.2 Assuming the flow far away from ...

If appropriate, you may change the ‘Exercises’ heading to one of the following:

- (i) ‘Exercise’ – by using `\begin{exercise}...\end{exercise}`
- (ii) ‘Problems’ – by using `\begin{problems}...\end{problems}`
- (iii) ‘Problem’ – by using `\begin{problem}...\end{problem}`

For instance,

```
\begin{problems}
  \item By treating  $y$  as the independent variable,
        show that the general solution of \ldots
  \item An electrical circuit contains a resistance \ldots
        \label{circuit}
\end{problems}
```

will typeset the following:

## Problems

- 7.1 By treating  $y$  as the independent variable, show that the general solution of ...
- 7.2 An electrical circuit contains a resistance ...





# Appendix A

## amsthm commands

You can copy and paste the following code into your root file. Assuming you have included `amsthm.sty`, it will number your theorems, definitions, etc. in a single sequence within your chapter, e.g. Definition 4.1, Lemma 4.2, Lemma 4.3, Proposition 4.4, Corollary 4.5.

```
%don't copy this line!
\theoremstyle{plain}% default
\newtheorem{theorem}{Theorem}[chapter]
\newtheorem{lemma}{Lemma}
\newtheorem{proposition}[theorem]{Proposition}
\newtheorem{corollary}[theorem]{Corollary}
\newtheorem{conjecture}[theorem]{Conjecture}

\newtheorem*{theorem*}{Theorem}
\newtheorem*{lemma*}{Lemma}
\newtheorem*{proposition*}{Proposition}
\newtheorem*{corollary*}{Corollary}
\newtheorem*{conjecture*}{Conjecture}

\theoremstyle{definition}
\newtheorem{definition}[theorem]{Definition}
\newtheorem{example}[theorem]{Example}
\newtheorem{prob}[theorem]{Problem}
\newtheorem{remark}[theorem]{Remark}
\newtheorem{notation}[theorem]{Notation}
\newtheorem{exer}[theorem]{Exercise}
\newtheorem{criterion}[theorem]{Criterion}
\newtheorem{algorithm}[theorem]{Algorithm}
\newtheorem{claim}[theorem]{Claim}

\newtheorem*{definition*}{Definition}
\newtheorem*{example*}{Example}
\newtheorem*{prob*}{Problem}
\newtheorem*{remark*}{Remark}
\newtheorem*{notation*}{Notation}
```

```
\newtheorem*{exer*}{Exercise}  
\newtheorem*{criterion*}{Criterion}  
\newtheorem*{algorithm*}{Algorithm}  
\newtheorem*{claim*}{Claim}  
  
\newtheorem*{note}{Note}  
\newtheorem*{summary}{Summary}  
\newtheorem*{acknowledgement}{Acknowledgement}  
\newtheorem*{conclusion}{Conclusion}
```

# Appendix B

## The root file for this guide

```
% authored_guide.tex
% 2011/06/23, v3.1 gamma
%
% Adapted by Diana Gillooly and David Tranah
% from Ali Woollatt's original documentation for cambridge7A

\NeedsTeXFormat{LaTeX2e}[1996/06/01]

\documentclass{cambridge7A}
% \documentclass[spanningrule]{../cambridge7A}% option

\usepackage{natbib}
% \usepackage[numbers]{natbib}% option

\usepackage[figuresright]{rotating}
\usepackage{floatpag}
\rotfloatpagestyle{empty}

% \usepackage{amsmath}% if you are using this package,
% it must be loaded before amsthm.sty
\usepackage{amsthm}
\usepackage{graphicx}

\usepackage{txfonts}
% \usepackage[scaled=0.9]{couriers}% use if you're using \tt fonts

% indexes
% uncomment the relevant set of commands

% for a single index
% \usepackage{makeidx}
% \makeindex

% for multiple indexes using multind.sty
\usepackage{multind}\ProvidesPackage{multind}
\makeindex{authors}
```

```

\makeindex{subject}

% for glossary entries
%\usepackage[style=list]{glossary}
\usepackage[number=none]{glossary}
\makeglossary

% theorem definitions
% see chapter 3 for details
\theoremstyle{plain}% default
\newtheorem{theorem}{Theorem}[chapter]
\newtheorem{lemma}[theorem]{Lemma}
\newtheorem{proposition}[theorem]{Proposition}
\newtheorem{corollary}[theorem]{Corollary}
\newtheorem{conjecture}[theorem]{Conjecture}

\newtheorem*{theorem*}{Theorem}
\newtheorem*{lemma*}{Lemma}
\newtheorem*{proposition*}{Proposition}
\newtheorem*{corollary*}{Corollary}
\newtheorem*{conjecture*}{Conjecture}

\theoremstyle{definition}
\newtheorem{definition}[theorem]{Definition}
\newtheorem{example}[theorem]{Example}
\newtheorem{prob}[theorem]{Problem}
\newtheorem{remark}[theorem]{Remark}
\newtheorem{notation}[theorem]{Notation}
\newtheorem{exer}[theorem]{Exercise}

\newtheorem*{definition*}{Definition}
\newtheorem*{example*}{Example}
\newtheorem*{prob*}{Problem}
\newtheorem*{remark*}{Remark}
\newtheorem*{notation*}{Notation}
\newtheorem*{exer*}{Exercise}

% \hyphenation{docu-ment baseline-skip polar}

% for this documentation, table of contents lists up to subsection level
\setcounter{tocdepth}{2}

\newcommand\cambridge{cambridge7A}

% remove the dot and change default for enumerated lists
\def\makeRRlabeldot#1{\hss\llap{#1}}
\renewcommand\theenumi{{\rm (\roman{enumi})}}
\renewcommand\theenumii{{\rm (\alph{enumii})}}
\renewcommand\theenumiii{{\rm (\arabic{enumiii})}}
\renewcommand\theenumiv{{\rm (\Alph{enumiv})}}

```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
% \includeonly{06authored}
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
\begin{document}
```

```
  \title[Subtitle, If You Have One]
```

```
    {Preparing Authored Books Using the \cambridge\ Class File}
```

```
\author{Cambridge University Press\[\[3\baselineskip]
```

```
  This guide was compiled using \hbox{\cambridge.cls \version}\[\baselineskip]
```

```
  The latest version can be downloaded from:
```

```
  https://authornet.cambridge.org/information/productionguide/
```

```
  LaTeX\_files/\cambridge.zip}
```

```
\bookabstract{This is the guide for authors who are preparing written,  
  rather than edited, books.}
```

```
\bookkeywords{\LaTeX; authored books; CUP style; cambridge7A.cls.}
```

```
\frontmatter
```

```
\maketitle
```

```
\tableofcontents
```

```
% \listofcontributors
```

```
\include{authored_preface}
```

```
\mainmatter
```

```
\label{partpage}\part{The First Part}
```

```
\include{01authored}% Introduction and basic design elements
```

```
\include{02authored}% Numbering and headings
```

```
\include{03authored}% Mathematics
```

```
\include{04authored}% Figures and tables
```

```
\include{05authored}% Reference and bibliography lists
```

```
\include{06authored}% Indexes
```

```
\include{07authored}% Exercises
```

```
\backmatter
```

```
\appendix
```

```
% if you only have one appendix, use \oneappendix instead of \appendix
```

```
\include{theorem}
```

```
\include{root}
```

```
\include{appnum}
```

```
\endappendix
```

```
\addtocontents{toc}{\vspace{\baselineskip}}
```

```
% the following lines will give you references at the end of the book
```

```
\renewcommand{\refname}{Bibliography}% if you prefer this heading
```

```
\bookreferences % if you already have references at the end of chapters,
```

```
  % you will need this command to start a new \chapter* heading
```

```
\bibliography{percolation}\label{refs}
```

```
\bibliographystyle{cambridgeauthordate}

\cleardoublepage

% end notes, if you have them
% \theendnotes

% glossary
\printglossary

% indexes

% for a single index
% \printindex

% for multiple indexes using multind.sty
\printindex{authors}{Author index}
\printindex{subject}{Subject index}

\end{document}
```

# Appendix C

## Numbering in appendices

In appendices equations are numbered in one sequence by chapter, but now the chapter ‘number’ is an upper-case letter. Here are examples.

$$E = Mc^2. \tag{C.1}$$

Here are examples of a multiline displays:

$$\left. \begin{array}{l} x = a + b \\ y = c + d \\ z = e + f. \end{array} \right\} \tag{C.2}$$

$$\begin{aligned} x &= a + a + b + b \\ &= 2a + b + b \\ &= 2a + 2b. \end{aligned} \tag{C.3}$$

Figures and tables are similarly numbered, via the `\caption` command in the usual way:

Figure C.1 A figure in an appendix.

## Bibliography

- Menshikov, M. V. 1985. Estimates for percolation thresholds for lattices in  $\mathbf{R}^n$ . *Dokl. Akad. Nauk SSSR*, **284**, 36–39.
- Vyssotsky, V. A., Gordon, S. B., Frisch, H. L., and Hammersley, J. M. 1961. Critical percolation probabilities (bond problem). *Phys. Rev.*, **123**, 1566–1567.



## Glossary

<b>cat</b>	a domesticated mammal.
<b>dog</b>	a domesticated mammal, used as a pet or for work purposes.
<b>rabbit</b>	a rodent, common in the wild or as a pet. Occasionally farmed.

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  interactive, 31