

Labelling in L^AT_EX

1 Defining and Labelling Theorems

To see how the numbers are generated on the three objects below, check out the “\newtheorem” commands in the source file, included just before the “\begin{document}” command.

Definition 1.1 *In bowling, you achieve a strike if you knock down all the pins with your first ball.*

Theorem 1.2 *This is my first theorem. I’m sure that it is clearly true, so I won’t include a proof.*

Corollary 1.3 *My paper will not be accepted by any reputable journal.*

Notice that I have labelled these three items. Now I can refer to Theorem ?? or Definition ??, for example, using a reference command. This is very useful if you are likely to move things around and don’t want the headache of renumbering the theorems and references.

2 Labelling Equations

In this section, I’ll label some equations and refer to them. In order to do this, one must use the “eqnarray” environment, not the “eqnarray*” environment, since the latter doesn’t give numbers to the equations.

$$(a + b)^2 = (a + b)(a + b) \tag{1}$$

$$= a(a + b) + b(a + b) \tag{2}$$

$$= a^2 + ab + ba + b^2 \tag{3}$$

Now I can refer to Equation ?? and Equation ?? anytime I like.

***** Background LATEX code *****

```
\documentclass[12pt]{article}
\usepackage{amsmath}

% This defines the theorem environment.
% When I use \begin{theorem}...\end{theorem} below, the content
% will begin with the word "Theorem X.Y", where X is the current
% section and Y is the numbering of this theorem in that section.
\newtheorem{theorem}{Theorem}[section] %

% Below I define the defn and cor environments.
% They will count with the theorem counter, but will appear as
% Definition X.Y or Corollary X.Y
\newtheorem{defn}[theorem]{Definition} %
\newtheorem{cor}[theorem]{Corollary} %

\begin{document}

\centerline{\Large \textbf{Labelling in LATEX} }

\section{Defining and Labelling Theorems}
```

To see how the numbers are generated on the three objects below, check out the ‘‘\$\backslash newtheorem’’ commands in the source file, included just before the ‘‘\$\backslash begin\{document\}’’ command.

```
\begin{defn}
\label{bowlingdefinition} In bowling, you achieve a strike if you
knock down all the pins with your first ball.
\end{defn}

\begin{theorem}
\label{prooflesstheorem} This is my first theorem. I’m sure that
it is clearly true, so I won’t include a proof.
\end{theorem}
```

```
\begin{cor}
\label{sadcorollary} My paper will not be accepted by any
reputable journal.
\end{cor}
```

Notice that I have labelled these three items. Now I can refer to Theorem \ref{prooflesstheorem} or Definition \ref{bowlingdefinition}, for example, using a reference command. This is very useful if you are likely to move things around and don't want the headache of renumbering the theorems and references.

\section{Labelling Equations}

In this section, I'll label some equations and refer to them. In order to do this, one must use the ``eqnarray'' environment, not the ``eqnarray*'' environment, since the latter doesn't give numbers to the equations.

```
\begin{eqnarray}
(a+b)^2 & = & (a+b)(a+b) \label{firstline} \\
& = & a(a+b)+b(a+b) \\
& = & a^2+ab+ba+b^2 \label{thirdline}
\end{eqnarray}
```

\noindent Now I can refer to Equation \ref{firstline} and Equation \ref{thirdline} anytime I like.

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