

Основи на \LaTeX

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Основи на L^AT_EX

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- 3 Page layout
- 4 Document classes
- 5 Fonts in L^AT_EX
- 6 Articles & Books
- 7 Environments

Producing pdf files

More on input file structure

Page layout

Document classes

Fonts in \LaTeX

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How to produce a pdf file?

Producing pdf files

More on input file structure

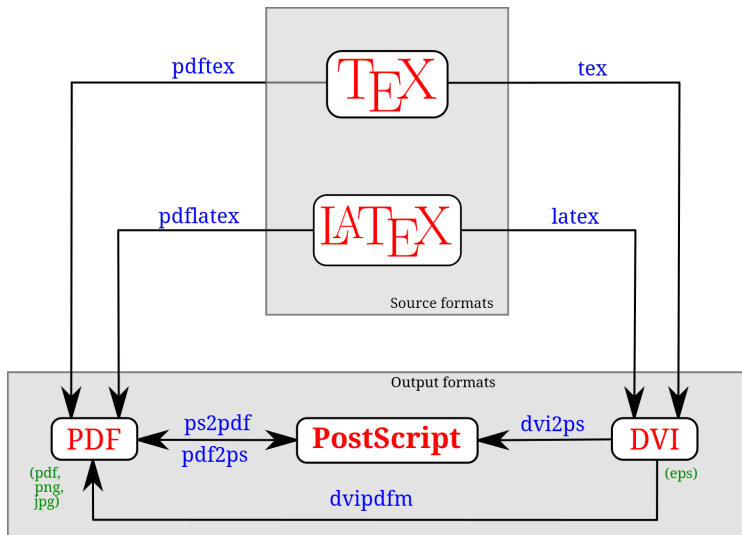
Page layout

Document classes

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Some file extensions in L^AT_EX

- **.tex** – LaTeX or TeX input file. It can be compiled with latex.
- **.sty** – LaTeX Macro package.
- **.cls** – Class files define what your document looks like.
- **.aux** – Auxiliary file that transports information from one compiler run to the next.
- **.log** – Detailed information during the last compiler run.
- **.toc** – Table of contents.
- **.lof** – List of figures.
- **.lot** – List of tables.
- **.dvi** – Device Independent File.
- **.pdf** – Portable Document Format.

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```
\documentclass{article}
```

```
\begin{document}
```

In elementary algebra, a quadratic equation (from the Latin quadratus for “square”) is any equation having the form

```
\begin{equation}\label{quadraticeq}
```

```
ax^{2}+bx+c=0
```

```
% General expression
```

```
\end{equation}
```

where x represents an unknown, and a , b , and c are constants with $a \neq 0$. If $a = 0$, then the equation is linear, not quadratic. The constants a , b , and c are called, respectively, the quadratic coefficient, the linear coefficient and the constant or free term.

Because the quadratic equation ([\ref{quadraticeq}](#)) involves only one unknown, it is called “univariate”. The quadratic equation only contains powers of x that are non-negative integers, and therefore it is a polynomial equation, and in particular it is a second degree polynomial equation since the greatest power is two.

```
\end{document}
```



```
\documentclass{article}
```

```
\begin{document}
```

In elementary algebra, a quadratic equation (from the Latin quadratus for “square”) is any equation having the form

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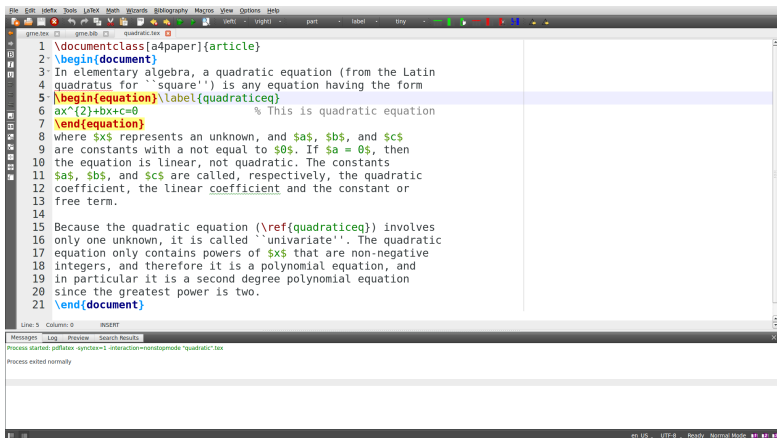
```
\end{document}
```

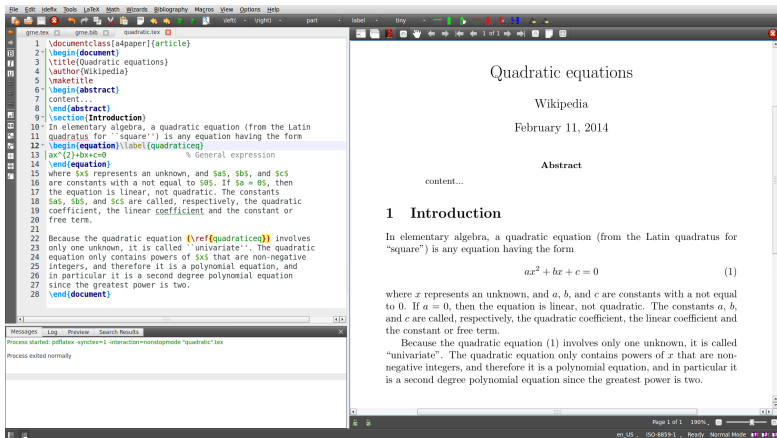
In elementary algebra, a quadratic equation (from the Latin quadratus for “square”) is any equation having the form

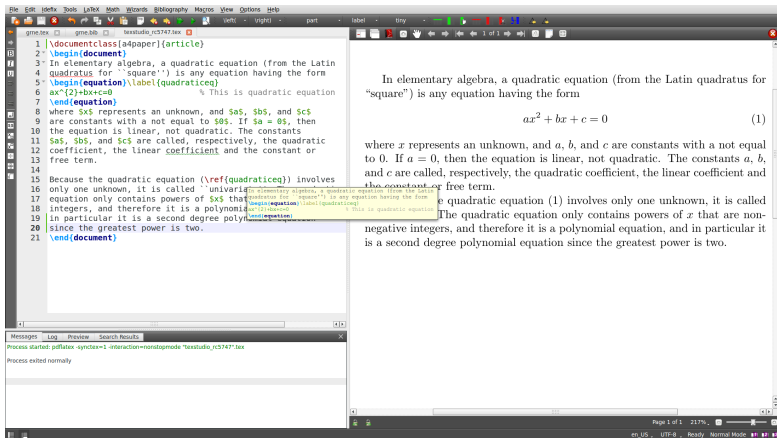
$$ax^2 + bx + c = 0 \quad (1)$$

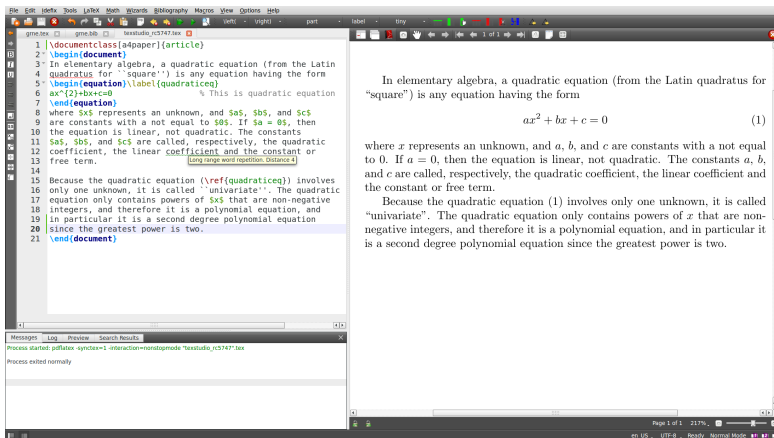
where x represents an unknown, and a , b , and c are constants with $a \neq 0$. If $a = 0$, then the equation is linear, not quadratic. The constants a , b , and c are called, respectively, the quadratic coefficient, the linear coefficient and the constant or free term.

Because the quadratic equation (1) involves only one unknown, it is called “univariate”. The quadratic equation only contains powers of x that are non-negative integers, and therefore it is a polynomial equation, and in particular it is a second degree polynomial equation since the greatest power is two.

T_EXstudio screenshot

T_EXstudio screenshot

T_EXstudio screenshot

T_EXstudio screenshot

Quadratic equations

Wikipedia

February 11, 2014

Abstract

content...

1 Introduction

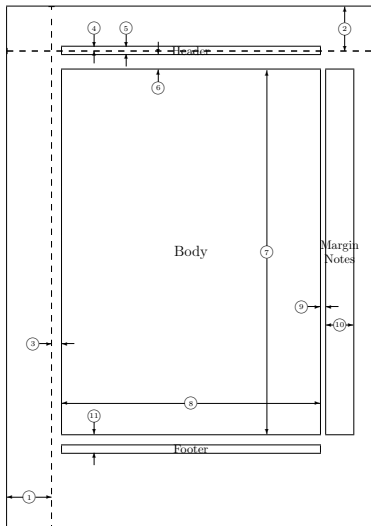
In elementary algebra, a quadratic equation (from the Latin quadratus for “square”) is any equation having the form

$$ax^2 + bx + c = 0 \tag{1}$$

where x represents an unknown, and a , b , and c are constants with a not equal to 0. If $a = 0$, then the equation is linear, not quadratic. The constants a , b , and c are called, respectively, the quadratic coefficient, the linear coefficient and the constant or free term.

Because the quadratic equation (1) involves only one unknown, it is called “univariate”. The quadratic equation only contains powers of x that are non-negative integers, and therefore it is a polynomial equation, and in particular it is a second degree polynomial equation since the greatest power is two.

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1 one inch + \hoffset	2 one inch + \voffset
3 \oddsidemargin = 17.3571pt	4 \topmargin = -7.86334pt
5 \headheight = 12.0pt	6 \headsep = 25.0pt
7 \textheight = 591.5302pt	8 \textwidth = 418.25368pt
9 \marginparsep = 10.0pt	10 \marginparwidth = 44.0pt
11 \footskip = 30.0pt	\marginparpush = 7.0pt (not shown)
\hoffset = 0.0pt	\voffset = 0.0pt
\paperwidth = 597.50787pt	\paperheight = 845.04684pt

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Document classes

```
\documentclass[options]{class}
```

- **article**
- **proc** – proceedings
- **minimal**
- **report** – small books, PhD theses, ...
- **book** – books
- **slides** – presentations

Document class options

```
\documentclass[options]{class}
```

- **10pt, 11pt, 12pt** – main font size
- **a4paper, letterpaper, ...**
- **fleqn** – left-aligned formula
- **leqno** – equation numbering on the left
- **titlepage, notitlepage**
- **onecolumn, twocolumn**
- **oneside, twoside**
- **landscape**
- **openright, openany** – make chapters begin on right only, on the next available page

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Font size

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`\tiny`

sample text

`\scriptsize`

sample text

`\footnotesize`

sample text

`\small`

sample text

`\normalsize`

sample text

`\large`

sample text

`\Large`

sample text

`\LARGE`

sample text

`\huge`

sample text

`\Huge`

sample text

Font size

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`\tiny`

sample text

`\scriptsize`

sample text

`\footnotesize`

sample text

`\small`

sample text

`\normalsize`

sample text

`\large`

sample text

`\Large`

sample text

`\LARGE`

sample text

`\huge`

sample text

`\Huge`

sample text

`\fontsize{0.1cm}{0.1cm}\selectfont`

sample text

`\fontsize{1.0cm}{1.0cm}\selectfont`

sample text

Font shapes

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<code>\textnormal {...}</code>	document font family
<code>\emph{...}</code>	<i>emphasis</i>
<code>\textrm {...}</code>	roman font family
<code>\textsf {...}</code>	sans serif font family
<code>\texttt {...}</code>	teletype font family
<code>\textup {...}</code>	upright shape
<code>\textit {...}</code>	<i>italic shape</i>
<code>\textsl {...}</code>	<i>slanted shape</i>
<code>\textbf {...}</code>	Bold face
<code>\uppercase {...}</code>	UPPERCASE
<code>\textmd {...}</code>	medium weight

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The Author's name goes here

February 11, 2014

Abstract

This is the abstract ...

1 Section**1.1 Subsection****1.1.1 Subsubsection****Paragraph****Subparagraph**

```

\documentclass[12pt]{article}
\usepackage[a4paper]{geometry}
\begin{document}
\title{Quadratic equations}
\author{The Author's name goes here}
\date{\today}
\maketitle
\begin{abstract}
This is the abstract ...
\end{abstract}

\section{Section}
\subsection{Subsection}
\subsubsection{Subsubsection}
\paragraph{Paragraph}
\subparagraph{Subparagraph}

```

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```

\documentclass[12pt]{book}
\usepackage[a4paper]{geometry}
\pagestyle{style}           style = plain, headings, empty
\frontmatter                Roman numbering
\begin{document}
\tableofcontent             Table of content
\chapter{...}
\section{...}
\mainmatter                 Arabic numbering
\chapter{...}
...
\chapter{...}
...
\chapter{...}
\appendix
\backmatter
\begin{bibliography}
...
\end{bibliography}

```

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Flushleft, Flushright, Center

```
\begin{flushleft}
This text is \left-aligned.
\LaTeX{} is not trying to make
each line the same length.
\end{flushleft}
```

This text is
left-aligned. L^AT_EX is not trying to make
each line the same length.

```
\begin{flushright}
This text is right-aligned.
\LaTeX{} is not trying to make
each line the same length.
\end{flushright}
```

This text is right-
aligned. L^AT_EX is not trying to make
each line the same length.

```
\begin{center}
At the centre of the earth
\end{center}
```

At the centre
of the earth

Itemize and Enumerate

```

\begin{enumerate}
\item You can next the list
environments to your taste:
\begin{itemize}
\item But it might start to
look silly.
\item[-] With a dash.
\end{itemize}
\item Therefore remember:
\begin{itemize}
\item[a] things will not
become smart because they are
in a list.
\item[b] things, though,
can be presented beautifully
in a list.
\end{itemize}
\end{enumerate}

```

- ① You can next the list environments to your taste:
 - But it might start to look silly.
 - With a dash.
- ② Therefore remember:
 - a things will not become smart because they are in a list.
 - b things, though, can be presented beautifully in a list.

Tabular

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```

\begin{tabular}{|r|l|}
\hline
7C0      & hexadecimal  \\
3700     & octal       \\
\cline{2-2}
11111000000 & binary      \\
\hline
\hline
1984      & decimal     \\
\hline
\end{tabular}

```

7C0	hexadecimal
3700	octal
11111000000	binary
1984	decimal

```

\begin{tabular}{c r @{.} l}
\hline
Pi expression & \\
\multicolumn{2}{c}{Value} \\
\hline
 $\pi$  & 3.1416 \\
 $\pi^{\pi}$  & 36.46 \\
 $(\pi^{\pi})^{\pi}$  & 80662.7 \\
\hline
\end{tabular}

```

Tabular

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```

\begin{tabular}{|r|l|}
\hline
7C0      & hexadecimal \\
3700     & octal       \\
\cline{2-2}
11111000000 & binary      \\
\hline
\hline
1984      & decimal     \\
\hline
\end{tabular}

```

7C0	hexadecimal
3700	octal
11111000000	binary
1984	decimal

```

\begin{tabular}{c r @{.} l}
\hline
Pi expression & \\
\multicolumn{2}{c}{Value} \\
\hline
\hline
$\pi$          & 3.1416 \\
$\pi^{\pi}$    & 36.46 \\
$(\pi^{\pi})^{\pi}$ & 80662.7 \\
\hline
\end{tabular}

```

Pi expression	Value
π	3.1416
π^{π}	36.46
$(\pi^{\pi})^{\pi}$	80662.7

Cross references

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Usage

```
\label{marker}, \ref{marker} and \pageref{marker}
```

```
\chapter{...}\label{thischapter}  
\section{...}\label{thissection}  
\subsection{...}  
...
```

```
\begin{equation}\label{einstein}  
E = mc^2  
\end{equation}  
...
```

The mass–energy relation (`\ref{einstein}`) ...

```
...  
\label{thispage}  
...  
...  
...
```

On page `\pageref{thispage}` we ...

Floats: Figure & Tables

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```
\begin{table}[place specifier]
\caption{Some description ... \label{results}}
\begin{tabular}
....
\end{tabular}
\end{table}
```

- h – right here
- t – top
- b – bottom
- p – special page with floats
- ! – ignore L^AT_EX internal parameters

Let's practice \LaTeX

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