font-change

Version 2015.2

Macros to Change Text & Math fonts in TEX

45 *Beautiful Variants*

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When I reach the destination, more than I realize that I have realized the goal, I am occupied with the reminiscences of the journey. It strikes to me again and again, "Isn't the journey to the goal the real attainment of the goal?" In this way even if I miss THE goal, I still have attained SOME goal.

Contents

Introduction

typesets documents in Computer Modern fonts by default.[1] Knuth's Computer Modern fonts are very elegant but sometimes we all look for a change. Many of us want to typeset TEX documents in fonts other than Computer Modern. At the user level, changing the font in TEX's *text mode*, i.e. the text font, is simple and there are many free fonts available with various typefaces like roman, **bold**, *italic*, *slanted*, ***italic bold***, ***slanted bold***, CAPS, **BOLD CAPS**, etc. The difficulty lies in changing the math fonts in TEX documents. This is mainly due to the lack of math fonts for TEX. Another reason is that switching the font in *math mode* is not as simple as switching the font in *text mode*. For LATEX there are various packages that can be used to change the font — text and math — with one statement. But for TEX, I could not find an easy way to change the font in the document — text and math. Using one font in *text mode* and another in *math mode* can spoil the look of the document. It is always desired to have text and math in the same font; text in New Century and math in Computer Modern do not go well. Though there are some combinations, as we will see later, that go well.

Being able to choose from different fonts is quite advantageous. Computer Modern fonts look very good on paper, esp. on inkjet printouts, but they look relatively thin on new computer screens (LCDs) and on laser printouts. For slide shows, most people prefer sans-serif fonts of relatively heavier weight. The idea of changing the entire font family which includes various typefaces like boldface, italics, etc., and the math fonts, with one control statement has been the motivation behind my work. For this purpose I have written 45 TEX macros that instruct TEX to typeset documents in the fonts called by those macros. In this document, the use of the above mentioned 45 font macros has been displayed. Each of these macros changes the fonts in the document globally, and can be used locally too, i.e. within a group. Now a TEX document, which is normally produced in Computer Modern, can be produced in 45 other font variants. These macro files can be easily understood, and changed if convenient. Each macro has various typefaces declared at 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, and 20 pt sizes.

To display our 45 font changing macros in action, a sample text has been typeset 45 times but in different fonts. The fonts/font families called by our macros have almost all the glyphs contained in the Computer Modern family. In general, these fonts have more glyphs than Computer Modern. To see all the glyphs in a font, please use Werner Lemberg's fontchart utility. In a few cases, e.g., in Epigrafica normal font (`epigrafican8r`), some important glyphs like Γ and Θ are missing. Our macro takes care of this; the user need not bother unless something very unusual is demanded from TEX.

Usage

These macros have been bundled as a package called `font-change` which is included in MiKTEX and TEX Live distributions. The package can also be downloaded from CTAN. If our TEX installation has the package `font-change` installed then we can readily use it, e.g., to typeset our document in Charter, we have to type `\input font_charter` in our source file. Of course, in order to use any of the macros of font-change, our TEX installation should have the required fonts. In case we do not have `font-change` installed on our TEX system and we are lazy to install it, then we can download

[1] Typographically, the correct expression is, "TEX typesets documents in Computer Modern typefaces by default." But most people (including me) use the words *font* and *typeface* synonymously. In this manual such distinction has been avoided.

the package from the internet and follow the following procedure. Please read the following to know about the available options and to see the macros in effect.

Suppose we would like to typeset our TEX document in Charter font. To do this we have to copy the TEX macro file `font_charter.tex` to the directory (folder) which contains our TEX source file. In our TEX source file, we have to type `\input font_charter`. This will change the font to Charter from the point where the statement `\input font_charter` was declared. We can declare `\input font_charter` in a closed group (`{\input font_charter ... }`) to change the font to Charter in that group, provided no other font change is called in that group or its sub-group.

Another way to use the font changing macro files is to put them in a folder (say "font-change") in some drive (say "C") and then call these files in our TEX source file. If we want to use the Charter font, we should type `\input C:/font-change/font_charter` to get the desired change. If we have put the font changing macro files in a folder that has space(s) in its name (say "font change"), then we should type `\input "C:/font change/font_charter"` to use the Charter font.

The complete change of font will be at the default size in TEX (10 pt), though a little manipulation with the macro file will enable us to use the text and math fonts at smaller and larger point changes.

The basic typeface changing TEX control statements

`\rm` ... roman
`\it` ... *italic*
`\bf` ... **boldface**
`\sl` ... *slanted*
`\tt` ... `typewriter`

hold their usual meaning. All the macro files that this PDF mentions have the above mentioned five options. In addition, most macro files have other useful options too. These are:

`\itbf` ... ***italic boldface***
`\slbf` ... ***slanted boldface***
`\caps` ... CAPS
`\capsbf` ... **CAPS IN BOLDFACE**

In the *text mode*, the above mentioned typefaces can be used at 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, and 20 pt sizes. This is done by typing the size in words between the backslash (\) and the words that declare the typeface. For example, if we want to typeset some text in bold at 14 pt then we have to use the control statement `\fourteenbf`.

Example

A sample TEX source file as shown below:

```
\parindent=0pt
\input C:/font-change/font_cm
This is the {\bf Computer Modern font}. The {\twelveslbf Gamma function\/}
is defined as:
$$\Gamma(z) \equiv \int_0^\infty t^{z-1} e^{-t} dt.$$

\input C:/font-change/font_charter
This is the {\bf Charter font}. The {\twelveslbf Gamma function\/}
is defined as:
$$\Gamma(z) \equiv \int_0^\infty t^{z-1} e^{-t} dt.$$

{ % begin group
\input C:/font-change/font_century
This is the {\bf New Century Schoolbook font}. The {\twelveslbf Gamma
function\/} is defined as:
$$\Gamma(z) \equiv \int_0^\infty t^{z-1} e^{-t} dt.$$
} % end group

Now we are back to Charter.
```

after compilation will produce:

This is the **Computer Modern font**. The ***Gamma function*** is defined as:

$$\Gamma(z) \equiv \int_0^\infty t^{z-1} e^{-t} dt.$$

This is the **Charter font**. The ***Gamma function*** is defined as:

$$\Gamma(z) \equiv \int_0^\infty t^{z-1} e^{-t} dt.$$

This is the **New Century font**. The ***Gamma function*** is defined as:

$$\Gamma(z) \equiv \int_0^\infty t^{z-1} e^{-t} dt.$$

Now we are back to Charter.

AMS Symbols

Some fonts, e.g., Kp-Fonts, have support for AMS symbols. Fonts msam and msbm of the AMS font collection contain these symbols. Blackboard letters ($\mathbb{A}, \mathbb{B}, \mathbb{C}, \mathbb{R}, \ldots$) are a part of AMS symbols. If we are using $\mathcal{A}\mathcal{M}\mathcal{S}$-TEX, and we are using the preprint style or we have already declared \UseAMSsymbols (default $\mathcal{A}\mathcal{M}\mathcal{S}$-TEX command), then we can use AMS symbols with some of the macros of font-change by declaring \UseAMSsymbols **again** after calling the macro. In a while we will look at an example of this implementation.

If we have used instructions \loadmsam or \loadmsbm of $\mathcal{A}\mathcal{M}\mathcal{S}$-TEX, we can use the statements **again** after declaring the font-change macro to obtain the desired results. The control sequence \UseAMSsymbols subsumes the instructions \loadmsam and \loadmsbm.

If we would like to return to the default AMS fonts — msam and msbm — we will have to input the macro file default-amssymbols.tex by instructing \input default-amssymbols in our source file. This small file has just the following two defintions:

```
\def\loadmsam{\font\tenmsa=msam10 \font\sevenmsa=msam7 \font\fivemsa=msam5
\fam\msafam
\textfont\msafam=\tenmsa \scriptfont\msafam=\sevenmsa
\scriptscriptfont\msafam=\fivemsa \global\let\loadmsam\empty}%
\loadmsam
%
\def\loadmsbm{\font\tenmsb=msbm10 \font\sevenmsb=msbm7 \font\fivemsb=msbm5
\fam\msbfam
\textfont\msbfam=\tenmsb \scriptfont\msbfam=\sevenmsb
\scriptscriptfont\msbfam=\fivemsb \global\let\loadmsbm\empty}%
\loadmsbm
```

It will be mentioned further if a macro of package font-change offers AMS symbols support. The following shows the discussed in action (the character in red color is from AMS symbols):

```
\input amstex % Input AmSTeX
\UseAMSsymbols % Calls AMS symbols
$$f:{\color{red}\Bbb R}^3\to R$$

\input font_kp % Call Kp-Fonts
\UseAMSsymbols % Uses jkpsya and jkpsyb of Kp-Fonts instead of msam and msbm of AMS
fonts
$$f:{\color{red}\Bbb R}\to R$$

\input default-amssymbols % Return to default
$$f:{\color{red}\Bbb R}^3\to R$$
```

upon compilation produces:

$$f : \mathbb{R}^3 \to R$$

$$f : \mathbb{R}^3 \to R$$

$$f : \mathbb{R}^3 \to R$$

Available Weights

Some font changing macros of the package font-change offer light, medium, and bold weights. There are many font families that offer the bold weight variant of the math fonts, but we have not all included such variants as they do not supply a heavier font to produce the contrast. If we type all text in boldface then at places where we would like to get bolder we are be left without an option. The philosophy of font-change says that to use bold for all text and math we need a heavier typeface available within the type family, which is heavier than the usual bold. Font families Kp-Fonts, Antykwa Toruńska, Iwona, and Kurier include such weights and they have been included in font-change. For instance, macro font_kurier-bold, which uses boldface as the normal font (in math and text), uses the heavy weight font as the boldface.

Changes and warning

The fonts used in these 45 macros are included in MiKTEX and TEX Live distributions. All these macros should work smoothly with a full installation of MiKTEX (version 2.9.4503 tested). The macros should work smoothly with TEX Live 2014 too, but TEX Live 2013 does not contain the recent font updates, due to which many macros from the new version of font-change might not work with TEX Live 2013 or earlier. But this should not be a big issue as the installation disk of TEX Live 2013 contains the older version of font-change, which has older font names. Many macros of font-change use inconsolata font as the typewriter font. The font was rm-inconsolata in version 2010.1 of font-change. The new version of inconsolata, which has been updated in MiKTEX 2.9.4503, does not contain any font named rm-inconsolata. Therefore in font-change (version 2013.1), we have chosen another inconsolata font called ly1-zi4r-1, which is the same or at least looks just the same like rm-inconsolata. Some other changes in names of fonts have been too, e.g. in Libertine fonts. If the user, who has a complete installation of MiKTEX or TeXLive, is encountered with missing font issues when using font-change, then it is recommended to use an older or newer version of font-change.

These 45 font changing macros have worked successfully with plain TEX, and a combination of plain TEX and other formats based on plain TEX, e.g., AMS-TEX and eplain. The macros work smoothly with pdfTEX and XeTEX too. Please note that these macros do not work with LaTEX, pdfLaTEX, or XeLaTEX.

If we are typesetting our document in English with any mathematics, then using these macros should be trouble free. They might demur when we try to type letters like ł, esp. when using typefaces like ***slanted boldface*** or CAPS. These are issues of missing glyphs and encoding. In

the current typeface (Charter, regular roman, `mdbchr7t`), `\l` produces ł, `\slbf \l` produces ***ł***, but `\caps\l` produces ŁL.

Sans-serif fonts do not have *italics* — they only have *slanted* glyphs. To make the font changing macro files more consistent, both italics and slanted commands, e.g., `\it` and `\sl`, produce *slanted* typefaces in case of sans-serif fonts and in those fonts that do not have distinct italic and slanted glyphs. Displayed further are samples exhibiting the change of TEX's text and math fonts using macros of `font-change`. All the fonts used in any macro of `font-change` are also listed in this document.

It is hoped that these macros work well and do not raise compatibility issues but it can not be promised. There is no warranty. If the user find any bugs, or has suggestions or complaints, please email them to me.

Charter

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Charter font is declared by typing `\input font_charter`. The font family uses fonts from the mdbch family, which corresponds to Bitstream Charter text fonts. This family is a part of Paul Pichaureau's MathDesign project. The Charter font was originally designed by Matthew Carter for Bitstream Inc. in 1987. Details of this TEX macro are given in the table below.

Font assignment in `font_charter` macro

Typeface	Font name	Typeface	Font name
Roman text	mdbchr7t	**Boldface text**	mdbchb7t
Math italic	mdbchri7m	`Typewriter text`	ly1-zi4r-1
Math symbols	md-chr7y	***Italic boldface text***	mdbchbi7t
Math extension	mdbchr7v	***Slanted boldface text***	mdbchbo7t
Italic text	mdbchri7t	CAPS	mdbchrfc8t
Slanted text	mdbchro7t	**CAPS IN BOLDFACE**	mdbchbfc8t

Utopia

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Utopia font is declared by typing `\input font_utopia`. The font family uses most of its fonts from the mdput family, which corresponds to Adobe Utopia text fonts. This family is a part of Paul Pichaureau's MathDesign project. The font family is very complete and includes the math fonts too. For inter-letter spacing reasons, macro `font_utopia.tex` uses math italic font and math symbols font from Michel Bovani's fourier package. The Utopia font was originally designed by Robert Slimbach for Adobe in 1989.

Math italic (`mdputri7m`) and math symbols (`md-utr7y`) from the mdput family can also be used. Details of this TEX macro are given in the table below.

Font assignment in `font_utopia` macro

Typeface	Font name	Typeface	Font name
Roman text	mdputr7t	**Boldface text**	mdputb7t
Math italic	futmii	`Typewriter text`	ly1-zi4r-1
Math symbols	futsy	***Italic boldface text***	mdputbi7t
Math extension	mdputr7v	***Slanted boldface text***	mdputbo7t
Italic text	mdputri7t	CAPS	mdputrfc8t
Slanted text	mdputro7t	**CAPS IN BOLDFACE**	mdputbfc8t

New Century Schoolbook

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\,dz = 0$$

for any closed contour γ completely contained in R.

The New Century Schoolbook font is declared by typing `\input font_century`. The font family uses fonts from the TeX Gyre Schola family, which corresponds to Adobe New Century Schoolbook text fonts. The Century Schoolbook font was created by Morris Fuller Benton between 1918 and 1921.

The macro uses math italic (fncmii) and math symbols (fncsy) from Michael Zedler's fouriernc package. Details of this TEX macro are given in the table below.

Font assignment in `font_century` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-qcsr	**Boldface text**	rm-qcsb
Math italic	fncmii	`Typewriter text`	cmtt10
Math symbols	fncsy	***Italic boldface text***	rm-qsbi
Math extension	cmex10	***Slanted boldface text***	pncbo7t
Italic text	rm-qcsri	Caps	rm-qcsr-sc
Slanted text	pncro7t	**Caps in Boldface**	rm-qcsb-sc

Palatino

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Palatino font is declared by typing `\input font_palatino`. The font family uses fonts from Young Ryu's pxfonts package, which corresponds to URW++ Palladio text fonts designed by Herman Zapf. The URW++ Palladio font is based on the Palatino font which was originally designed by Hermann Zapf for the Stempel foundry in 1950. The fonts of this macro provide their own AMS symbols. Details of this TEX macro are given in the table below.

Font assignment in `font_palatino` macro

Typeface	Font name	Typeface	Font name
Roman text	pxr	**Boldface text**	pxb
Math italic	pxmi	`Typewriter text`	cmtt10
Math symbols	pxsy	***Italic boldface text***	pxbi
Math extension	pxex	***Slanted boldface text***	pxbsl
Italic text	pxi	CAPS	pxsc
Slanted text	pxsl	**CAPS IN BOLDFACE**	pxbsc

Matching AMS symbols: ® ¥ ■ ≅ ⩾ ⪷ ⩾ ⩽ ≦ ⩽ ⩽ ⊀ ⊈ ⊈ ℝ 𝔼 ℂ ...

Pagella

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_\gamma f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Pagella font is declared by typing `\input font_pagella`. Most of text is typeset using fonts from TEX Gyre Pagella package and most math typesetting uses Diego Puga's mathpazo package, and some text (slanted fonts) and some math (AMS symbols) is from Young Ryu's pxfonts — all of these correspond to URW++ Palladio text fonts designed by Herman Zapf. The URW++ Palladio font is based on the Palatino font which was originally designed by Hermann Zapf for the Stempel foundry in 1950. The TEX Gyre Pagella fonts can be said to be a bit more refined version of the Palatino fonts and they also have the ff ligature, which is missing in pxfonts or other Palatino-based fonts. The fonts of this macro provide their own AMS symbols. Details of this TEX macro are given in the table below.

Font assignment in `font_pagella` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-qplr	**Boldface text**	rm-qplb
Math italic	zplmr7m	`Typewriter text`	cmtt10
Math symbols	zplmr7y	***Italic boldface text***	rm-qplbi
Math extension	zplmr7v	***Slanted boldface text***	pxbsl
Italic text	rm-qplri	CAPS	rm-qplr-sc
Slanted text	pxsl	**CAPS IN BOLDFACE**	rm-qplb-sc

Matching AMS symbols: ® ¥ ■ ≅ ⩾ ⩽ ⩾ ⩽ ≦ ⩽ ≦ ⊀ ⊈ ⊄ ℝ 𝔼 ℂ ...

Times

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Times font is declared by typing `\input font_times`. The font family uses fonts from Young Ryu's txfonts package, which corresponds to Adobe Times text fonts. The Times font was designed in 1931 by Stanley Morison at Monotype Corp. The fonts of this macro provide their own AMS symbols. Details of this TEX macro are given in the table below.

Font assignment in `font_times` macro

Typeface	Font name	Typeface	Font name
Roman text	txr	**Boldface text**	txb
Math italic	txmi	`Typewriter text`	txtt
Math symbols	txsy	***Italic boldface text***	txbi
Math extension	txex	***Slanted boldface text***	txbsl
Italic text	txi	CAPS	txsc
Slanted text	txsl	**CAPS IN BOLDFACE**	txbsc

Matching AMS symbols: ® ¥ ■ ≋ ⩾ ⩽ ⩾ ⩽ ≦ ⩽ ⩽ ≮ ≰ ≰ ℝ 𝔼 ℂ ...

Bookman Font

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Bookman font is declared by typing `\input font_bookman`. The font family uses fonts from Jackowski and Nowacki's (TEX Gyre) bonum family, and Antonis Tsolomitis' kerkis package; both these packages correspond to ITC Bookman text fonts. The math symbols and extension characters are taken from Young Ryu's txfonts package. The Bookman font was originally designed by Alexander Phemister in 1860 for the Miller & Richard foundry in Scotland. Details of this TEX macro are given in the table below.

Font assignment in `font_bookman` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-qbkr	**Boldface text**	rm-qbkb
Math italic	kmath8r	`Typewriter text`	txtt
Math symbols	txsy	***Italic boldface text***	rm-qbkbi
Math extension	txex	***Slanted boldface text***	pbkdo7t
Italic text	rm-qbkri	Caps	rm-qbkr-sc
Slanted text	pbklo7t	**Caps in Boldface**	rm-qbkb-sc

Kp-Fonts

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

Kp-Fonts are declared by typing `\input font_kp`. The font family uses fonts from Christophe Caignaert's Kp-Fonts family. The fonts of this macro provide their own AMS symbols. Details of this TEX macro are given in the table below.

Font assignment in `font_kp` macro

Typeface	Font name	Typeface	Font name
Roman text	jkpmn7t	**Boldface text**	jkpbn7t
Math italic	jkpmi	Typewriter text	jkpttmn7t
Math symbols	jkpsy	***Italic boldface text***	jkpbit7t
Math extension	jkpex	***Slanted boldface text***	jkpbsl7t
Italic text	jkpmit7t	Caps	jkpmsc7t
Slanted text	jkpmsl7t	**Caps in Boldface**	jkpbsc7t

Matching AMS symbols: ® ¥ ■ ≋ ⩾ ⪷ ⪸ ⪷ ≦ ⩽ ≶ ≺ ⊀ ⊀ ℝ 𝔼 ℂ ...

Kp-*Light*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

Kp-*Light* fonts are declared by typing `\input font_kp-light`. The font family uses fonts from Christophe Caignaert's Kp-Fonts family. This is the light version of Kp-Fonts. The difference between the medium (regular) and light versions is visible in the text *color* and of course, upon magnification of characters. The *light* option, which certainly saves the printer tones, is claimed by the author of Kp-Fonts to be better on print than display. The fonts of this macro provide their own AMS symbols. Details of this TEX macro are given in the table below.

Font assignment in `font_kp-light` macro

Typeface	Font name	Typeface	Font name
Roman text	jkplmn7t	**Boldface text**	jkplbn7t
Math italic	jkplmi	Typewriter text	jkpttmn7t
Math symbols	jkplsy	***Italic boldface text***	jkplbit7t
Math extension	jkpex	***Slanted boldface text***	jkplbsl7t
Italic text	jkplmit7t	Caps	jkplmsc7t
Slanted text	jkplmsl7t	**Caps in Boldface**	jkplbsc7t

Matching AMS symbols: ® ¥ ■ ≋ ⩾ ⩽ ⩾ ⩽ ≦ ⩽ ⩽ ⪇ ⪅ ⪈ ℝ 𝔼 ℂ ...

Antykwa Toruńska

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\,dz = 0$$

for any closed contour γ completely contained in R.

The Antykwa Toruńska font is declared by typing `\input font_antt`. The font family uses fonts from J. M. Nowacki's antt package, which corresponds to Zygfryd Gardzielewski's Antykwa Toruńska text fonts. Zygfryd Gardzielewski designed Antykwa Toruńska in 1960 for Grafmasz typefoundry in Warsaw. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_antt` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-anttr	**Boldface text**	rm-anttb
Math italic	mi-anttri	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-anttrz	***Italic boldface text***	rm-anttbi
Math extension	ex-anttr	***Slanted boldface text***	rm-anttbi
Italic text	rm-anttri	Caps	qx-anttrcap
Slanted text	rm-anttri	**Caps in Boldface**	rx-anttbcap

Antykwa Toruńska-*Light*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\,dz = 0$$

for any closed contour γ completely contained in R.

The Antykwa Toruńska-*Light* font is declared by typing `\input font_antt-light`. The font family uses light and medium weight fonts from J. M. Nowacki's antt package, which corresponds to Zygfryd Gardzielewski's Antykwa Toruńska text fonts. Zygfryd Gardzielewski designed Antykwa Toruńska in 1960 for Grafmasz typefoundry in Warsaw. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_antt-light` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-anttl	**Boldface text**	rm-anttm
Math italic	mi-anttli	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-anttlz	***Italic boldface text***	rm-anttmi
Math extension	ex-anttl	***Slanted boldface text***	rm-anttmi
Italic text	rm-anttli	CAPS	qx-anttlcap
Slanted text	rm-anttli	**CAPS IN BOLDFACE**	qx-anttmcap

Antykwa Toruńska-*Medium*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\,dz = 0$$

for any closed contour γ completely contained in R.

The Antykwa Toruńska-*Medium* font is declared by typing `\input font_antt-medium`. The font family uses medium and bold weight fonts from J. M. Nowacki's antt package, which corresponds to Zygfryd Gardzielewski's Antykwa Toruńska text fonts. Zygfryd Gardzielewski designed Antykwa Toruńska in 1960 for Grafmasz typefoundry in Warsaw. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_antt-medium` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-anttm	**Boldface text**	rm-anttb
Math italic	mi-anttmi	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-anttmz	***Italic boldface text***	rm-anttbi
Math extension	ex-anttm	***Slanted boldface text***	rm-anttbi
Italic text	rm-anttmi	CAPS	qx-anttmcap
Slanted text	rm-anttmi	CAPS IN BOLDFACE	qx-anttbcap

Antykwa Toruńska-*Condensed*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\,dz = 0$$

for any closed contour γ completely contained in R.

The Antykwa Toruńska-*Condensed* font is declared by typing `\input font_antt-condensed`. The font family uses condensed width regular and bold weight fonts from J. M. Nowacki's antt package, which corresponds to Zygfryd Gardzielewski's Antykwa Toruńska text fonts. Zygfryd Gardzielewski designed Antykwa Toruńska in 1960 for Grafmasz typefoundry in Warsaw. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_antt-condensed` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-anttcr	**Boldface text**	rm-anttcb
Math italic	mi-anttcri	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-anttcrz	***Italic boldface text***	rm-anttcbi
Math extension	ex-anttcr	***Slanted boldface text***	rm-anttcbi
Italic text	rm-anttcri	Caps	qx-anttcrcap
Slanted text	rm-anttcri	**Caps in Boldface**	qx-anttcbcap

Antykwa Toruńska-*Condensed Light*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\,dz = 0$$

for any closed contour γ completely contained in R.

Antykwa Toruńska-*Condensed Light* font is declared by typing `\input font_antt-condensed-light`. The font family uses condensed width light and medium weight fonts from J. M. Nowacki's antt package, which corresponds to Zygfryd Gardzielewski's Antykwa Toruńska text fonts. Zygfryd Gardzielewski designed Antykwa Toruńska in 1960 for Grafmasz typefoundry in Warsaw. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_antt-condensed-light` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-anttcl	**Boldface text**	rm-anttcm
Math italic	mi-anttcli	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-anttclz	***Italic boldface text***	rm-anttcmi
Math extension	ex-anttcl	***Slanted boldface text***	rm-anttcmi
Italic text	rm-anttcli	CAPS	qx-anttclcap
Slanted text	rm-anttcli	**CAPS IN BOLDFACE**	qx-anttcmcap

Antykwa Toruńska-*Condensed Medium*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\,dz = 0$$

for any closed contour γ completely contained in R.

The Antykwa Toruńska-*Condensed Medium* font can be used in TEX documents after typing `\input font_antt-condensed-medium`. The font family uses condensed width medium and bold weight fonts from J. M. Nowacki's antt package, which corresponds to Zygfryd Gardzielewski's Antykwa Toruńska text fonts. Zygfryd Gardzielewski designed Antykwa Toruńska in 1960 for Grafmasz typefoundry in Warsaw. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_antt-condensed-medium` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-anttcm	**Boldface text**	rm-anttcb
Math italic	mi-anttcmi	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-anttcmz	***Italic boldface text***	rm-anttcbi
Math extension	ex-anttcm	***Slanted boldface text***	rm-anttcbi
Italic text	rm-anttcmi	Caps	qx-anttcmcap
Slanted text	rm-anttcmi	Caps in Boldface	qx-anttcbcap

Iwona

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\iota x} = \cos(x) + \iota \sin(x),$$

where ι is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\iota x} &= \sum_{n=0}^{\infty} \frac{(\iota x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \iota \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \iota \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Iwona font is declared by typing `\input font_iwona`. The font family uses fonts from J. M. Nowacki's iwona package, which corresponds to Małgorzata Budyta's text fonts. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_iwona` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-iwonar	**Boldface text**	rm-iwonab
Math italic	mi-iwonari	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-iwonarz	***Italic boldface text***	rm-iwonabi
Math extension	ex-iwonar	***Slanted boldface text***	rm-iwonabi
Italic text	rm-iwonari	Caps	qx-iwonarcap
Slanted text	rm-iwonari	**Caps in Boldface**	qx-iwonabcap

Iwona-*Light*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Iwona-*Light* font is declared by typing `\input font_iwona-light`. The font family uses light and bold weight Iwona fonts from J. M. Nowacki's iwona package, which corresponds to Małgorzata Budyta's text fonts. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_iwona-light` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-iwonal	**Boldface text**	rm-iwonam
Math italic	mi-iwonali	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-iwonalz	***Italic boldface text***	rm-iwonami
Math extension	ex-iwonal	***Slanted boldface text***	rm-iwonami
Italic text	rm-iwonali	Caps	qx-iwonalcap
Slanted text	rm-iwonali	**Caps in Boldface**	qx-iwonamcap

Iwona-*Medium*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Iwona-*Medium* font is declared by typing `\input font_iwona-medium`. The font family uses medium and heavy weight Iwona fonts from J. M. Nowacki's iwona package, which corresponds to Małgorzata Budyta's text fonts. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_iwona-medium` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-iwonam	**Boldface text**	rm-iwonah
Math italic	mi-iwonami	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-iwonamz	***Italic boldface text***	rm-iwonahi
Math extension	ex-iwonam	***Slanted boldface text***	rm-iwonahi
Italic text	rm-iwonami	Caps	qx-iwonamcap
Slanted text	rm-iwonami	**Caps in Boldface**	qx-iwonahcap

Iwona-*Bold*

Euler Formula: The Euler formula, also known as Euler identity, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Iwona-*Bold* font is declared by typing `\input font_iwona-bold`. The font family uses bold and heavy weight Iwona fonts from J. M. Nowacki's iwona package, which corresponds to Małgorzata Budyta's text fonts. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_iwona-medium` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-iwonab	**Boldface text**	rm-iwonah
Math italic	mi-iwonabi	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-iwonabz	***Italic boldface text***	rm-iwonahi
Math extension	ex-iwonab	***Slanted boldface text***	rm-iwonahi
Italic text	rm-iwonabi	CAPS	qx-iwonabcap
Slanted text	rm-iwonabi	CAPS IN BOLDFACE	qx-iwonahcap

Iwona-*Condensed*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Iwona-*Condensed* font is declared by typing `\input font_iwona-condensed`. The font family uses condensed width regular and bold weight Iwona fonts from J. M. Nowacki's iwona package, which corresponds to Małgorzata Budyta's text fonts. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_iwona-condensed` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-iwonacr	**Boldface text**	rm-iwonacb
Math italic	mi-iwonacri	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-iwonacrz	***Italic boldface text***	rm-iwonacbi
Math extension	ex-iwonacr	***Slanted boldface text***	rm-iwonacbi
Italic text	rm-iwonacri	Caps	qx-iwonacrcap
Slanted text	rm-iwonacri	**Caps in Boldface**	qx-iwonacbcap

Iwona-*Condensed-Light*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\iota x} = \cos(x) + \iota \sin(x),$$

where ι is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\iota x} &= \sum_{n=0}^{\infty} \frac{(\iota x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \iota \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \iota \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Iwona-*Condensed-Light* font is declared by typing `\input font_iwona-condensed-light`. The font family uses condensed width light and medium weight Iwona fonts from J. M. Nowacki's iwona package, which corresponds to Małgorzata Budyta's text fonts. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_iwona-condensed-light` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-iwonacl	**Boldface text**	rm-iwonacm
Math italic	mi-iwonacli	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-iwonaclz	***Italic boldface text***	rm-iwonacmi
Math extension	ex-iwonacl	***Slanted boldface text***	rm-iwonacmi
Italic text	rm-iwonacli	Caps	qx-iwonaclcap
Slanted text	rm-iwonacli	**Caps in Boldface**	qx-iwonacmcap

Iwona-*Condensed-Medium*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Iwona-*Condensed-Medium* font is declared by typing `\input font_iwona-condensed-medium`. The font family uses condensed width medium and heavy weight Iwona fonts from J. M. Nowacki's iwona package, which corresponds to Małgorzata Budyta's text fonts. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_iwona-condensed-medium` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-iwonacm	**Boldface text**	rm-iwonach
Math italic	mi-iwonacmi	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-iwonacmz	***Italic boldface text***	rm-iwonachi
Math extension	ex-iwonacm	***Slanted boldface text***	rm-iwonachi
Italic text	rm-iwonacmi	Caps	qx-iwonacmcap
Slanted text	rm-iwonacmi	**Caps in Boldface**	qx-iwonachcap

Iwona-*Condensed-Bold*

Euler Formula: The Euler formula, also known as Euler identity, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Iwona-*Condensed-Bold* font is declared by typing `\input font_iwona-condensed-bold`. The font family uses condensed width bold and heavy weight Iwona fonts from J. M. Nowacki's iwona package, which corresponds to Małgorzata Budyta's text fonts. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_iwona-condensed-bold` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-iwonacb	**Boldface text**	rm-iwonach
Math italic	mi-iwonacbi	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-iwonacbz	***Italic boldface text***	rm-iwonachi
Math extension	ex-iwonacb	***Slanted boldface text***	rm-iwonachi
Italic text	rm-iwonacbi	Caps	qx-iwonacbcap
Slanted text	rm-iwonacbi	Caps in Boldface	qx-iwonachcap

Kurier

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\iota x} = \cos(x) + \iota \sin(x),$$

where ι is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\iota x} &= \sum_{n=0}^{\infty} \frac{(\iota x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \iota \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \iota \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Kurier font is declared by typing `\input font_kurier`. The font family uses fonts from J. M. Nowacki's kurier package, which corresponds to Małgorzata Budyta's text fonts. The Kurier font is very similar to Iwona font; Kurier is a bit extended and has ink traps. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_kurier` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-kurierr	**Boldface text**	rm-kurierb
Math italic	mi-kurierri	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-kurierrz	***Italic boldface text***	rm-kurierbi
Math extension	ex-kurierr	***Slanted boldface text***	rm-kurierbi
Italic text	rm-kurierri	Caps	qx-kurierrcap
Slanted text	rm-kurierri	**Caps in Boldface**	qx-kurierbcap

Kurier-*Light*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\iota x} = \cos(x) + \iota \sin(x),$$

where ι is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\iota x} &= \sum_{n=0}^{\infty} \frac{(\iota x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \iota \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \iota \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Kurier-*Light* font is declared by typing `\input font_kurier-light`. The font family uses light and medium weight Kurier fonts from J. M. Nowacki's kurier package, which corresponds to Małgorzata Budyta's text fonts. The Kurier font is very similar to Iwona font; Kurier is a bit extended and has ink traps. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_kurier-light` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-kurierl	**Boldface text**	rm-kurierm
Math italic	mi-kurierli	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-kurierlz	***Italic boldface text***	rm-kuriermi
Math extension	ex-kurierl	***Slanted boldface text***	rm-kuriermi
Italic text	rm-kurierli	Caps	qx-kurierlcap
Slanted text	rm-kurierli	**Caps in Boldface**	qx-kuriermcap

Kurier-*Medium*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\iota x} = \cos(x) + \iota \sin(x),$$

where ι is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\iota x} &= \sum_{n=0}^{\infty} \frac{(\iota x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \iota \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \iota \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Kurier-*Medium* font is declared by typing `\input font_kurier-medium`. The font family uses medium and heavy weight Kurier fonts from J. M. Nowacki's kurier package, which corresponds to Małgorzata Budyta's text fonts. The Kurier font is very similar to Iwona font; Kurier is a bit extended and has ink traps. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_kurier-medium` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-kurierm	**Boldface text**	rm-kurierh
Math italic	mi-kuriermi	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-kuriermz	***Italic boldface text***	rm-kurierhi
Math extension	ex-kurierm	***Slanted boldface text***	rm-kurierhi
Italic text	rm-kuriermi	Caps	qx-kuriermcap
Slanted text	rm-kuriermi	**Caps in Boldface**	qx-kurierhcap

Kurier-*Bold*

Euler Formula: The Euler formula, also known as Euler identity, states

$$e^{\iota x} = \cos(x) + \iota \sin(x),$$

where ι is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\iota x} &= \sum_{n=0}^{\infty} \frac{(\iota x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \iota \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \iota \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Kurier-*Bold* font is declared by typing `\input font_kurier-bold`. The font family uses bold and heavy weight Kurier fonts from J. M. Nowacki's kurier package, which corresponds to Małgorzata Budyta's text fonts. The Kurier font is very similar to Iwona font; Kurier is a bit extended and has ink traps. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_kurier-medium` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-kurierb	**Boldface text**	rm-kurierh
Math italic	mi-kurierbi	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-kurierbz	***Italic boldface text***	rm-kurierhi
Math extension	ex-kurierb	***Slanted boldface text***	rm-kurierhi
Italic text	rm-kurierbi	CAPS	qx-kurierbcap
Slanted text	rm-kurierbi	CAPS IN BOLDFACE	qx-kurierhcap

Kurier-*Condensed*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\iota x} = \cos(x) + \iota \sin(x),$$

where ι is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\iota x} &= \sum_{n=0}^{\infty} \frac{(\iota x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \iota \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \iota \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Kurier-*Condensed* font is declared by typing `\input font_kurier-condensed`. The font family uses condensed width regular and bold weight Kurier fonts from J. M. Nowacki's kurier package, which corresponds to Małgorzata Budyta's text fonts. The Kurier font is very similar to Iwona font; Kurier is a bit extended and has ink traps. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_kurier-condensed` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-kuriercr	**Boldface text**	rm-kuriercb
Math italic	mi-kuriercri	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-kuriercrz	***Italic boldface text***	rm-kuriercbi
Math extension	ex-kuriercr	***Slanted boldface text***	rm-kuriercbi
Italic text	rm-kuriercri	Caps	qx-kuriercrcap
Slanted text	rm-kuriercri	**Caps in Boldface**	qx-kuriercbcap

Kurier-*Condensed-Light*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\iota x} = \cos(x) + \iota \sin(x),$$

where ι is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\iota x} &= \sum_{n=0}^{\infty} \frac{(\iota x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \iota \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \iota \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Kurier-*Condensed-Light* font is declared by typing `\input font_kurier-condensed-light`. The font family uses condensed width light and medium weight Kurier fonts from J. M. Nowacki's kurier package, which corresponds to Małgorzata Budyta's text fonts. The Kurier font is very similar to Iwona font; Kurier is a bit extended and has ink traps. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_kurier-condensed-light` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-kuriercl	**Boldface text**	rm-kuriercm
Math italic	mi-kuriercli	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-kurierclz	***Italic boldface text***	rm-kuriercmi
Math extension	ex-kuriercl	***Slanted boldface text***	rm-kuriercmi
Italic text	rm-kuriercli	Caps	qx-kuriercicap
Slanted text	rm-kuriercli	**Caps in Boldface**	qx-kuriercmcap

Kurier-*Condensed-Medium*

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\iota x} = \cos(x) + \iota \sin(x),$$

where ι is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\iota x} &= \sum_{n=0}^{\infty} \frac{(\iota x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \iota \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \iota \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Kurier-*Condensed-Medium* font is declared by typing `\input font_kurier-condensed-medium`. The font family uses condensed width medium and heavy weight Kurier fonts from J. M. Nowacki's kurier package, which corresponds to Małgorzata Budyta's text fonts. The Kurier font is very similar to Iwona font; Kurier is a bit extended and has ink traps. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_kurier-condensed-medium` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-kuriercm	**Boldface text**	rm-kurierch
Math italic	mi-kuriercmi	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-kuriercmz	***Italic boldface text***	rm-kurierchi
Math extension	ex-kuriercm	***Slanted boldface text***	rm-kurierchi
Italic text	rm-kuriercmi	Caps	qx-kuriercmcap
Slanted text	rm-kuriercmi	**Caps in Boldface**	qx-kurierchcap

Kurier-*Condensed-Bold*

Euler Formula: The Euler formula, also known as Euler identity, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Kurier-*Condensed-Bold* font is declared by typing `\input font_kurier-condensed-bold`. The font family uses condensed width bold and heavy weight Kurier fonts from J. M. Nowacki's kurier package, which corresponds to Małgorzata Budyta's text fonts. The Kurier font is very similar to Iwona font; Kurier is a bit extended and has ink traps. L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default plain TEX control statements `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_kurier-condensed-bold` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-kuriercb	**Boldface text**	rm-kuriercb
Math italic	mi-kuriercbi	`Typewriter text`	ly1-zi4r-1
Math symbols	sy-kuriercbz	***Italic boldface text***	rm-kuriercbi
Math extension	ex-kuriercb	***Slanted boldface text***	rm-kuriercbi
Italic text	rm-kuriercbi	CAPS	qx-kuriercbcap
Slanted text	rm-kuriercbi	CAPS IN BOLDFACE	qx-kuriercbcap

Arev

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\iota x} = \cos(x) + \iota \sin(x),$$

where ι is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\iota x} &= \sum_{n=0}^{\infty} \frac{(\iota x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \iota \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \iota \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Arev font is declared by typing `\input font_arev`. The font family uses fonts from S. G. Hartke's arev package, which corresponds to Bitstream Vera Sans text fonts. Bitstream Vera font was designed by Jim Lyles. Details of this TEX macro are given in the table below.

Font assignment in `font_arev` macro

Typeface	Font name	Typeface	Font name
Roman text	zavmr7t	**Boldface text**	zavmb7t
Math italic	zavmri7m	Typewriter text	fvmr8t
Math symbols	zavmr7y	***Italic boldface text***	favbi8t
Math extension	ex-kurierr	***Slanted boldface text***	favbi8t
Italic text	favri8t	No caps	---
Slanted text	favri8t	No caps in bold	---

Computer Modern Bright

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

The Computer Modern Bright font is declared by typing `\input font_cmbright`. The font family uses fonts from Walter Schmidt's cmbright package, which corresponds to Donald Knuth's Computer Modern Sans Serif text fonts. Computer Modern Bright fonts are lighter than Knuth's Computer Modern Sans Serif fonts. The fonts of this macro provide their own AMS symbols. Details of this TEX macro are given in the table below.

Font assignment in `font_cmbright` macro

Typeface	Font name	Typeface	Font name
Roman text	cmbr10	**Boldface text**	cmbrbx10
Math italic	cmbrmi10	`Typewriter text`	ly1-zi4r-1
Math symbols	cmbrsy10	***Italic boldface text***	rm-lmssbo10
Math extension	ex-kurierr	***Slanted boldface text***	rm-lmssbo10
Italic text	cmbrsl10	No caps	—
Slanted text	cmbrsl10	No caps in bold	—

Matching AMS symbols: ® ¥ ■ ≈ ⩾ ≺ ≻ ≼ ≦ ⩽ ≶ ⊀ ⊈ ⊄ $\mathbb{R}$ $\mathbb{E}$ $\mathbb{C}$ ...

Epigrafica with Euler

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

This macro enables us to type text in Epigrafica font and math in Euler font. The macro is declared by typing `\input font_epigrafica_euler`. The macro typesets text in fonts from Antonis Tsolomitis's epigrafica package (based on Hermann Zapf's Optima text font) and math in Walter Schmidt's Euler-VM fonts (based on Hermann Zapf's Euler and Knuth's CM fonts). Details of this TEX macro are given in the table below.

Font assignment in `font_epigrafica_euler` macro

Typeface	Font name	Typeface	Font name
Roman text	epigrafican8r	**Boldface text**	epigraficab8r
Math italic	eurm10	Typewriter text	ly1-zi4r-1
Math symbols	cmsy10	***Italic boldface text***	epigraficabi8r
Math extension	euex10	***Slanted boldface text***	epigraficabi8r
Italic text	epigraficai8r	Caps	epigraficac8r
Slanted text	epigraficai8r	No caps in bold	–

Epigrafica with Palatino

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

This macro enables us to type text in Epigrafica font and math in PX Fonts. The macro is declared by typing `\input font_epigrafica_palatino`. The macro typesets text in fonts from Antonis Tsolomitis's epigrafica package (based on Hermann Zapf's Optima text font) and math in Young Ryu's pxfonts package (which corresponds to Adobe Palatino text fonts). Details of this TEX macro are given in the table below.

Font assignment in `font_epigrafica_palatino` macro

Typeface	Font name	Typeface	Font name
Roman text	epigrafican8r	**Boldface text**	epigraficab8r
Math italic	pxmi	`Typewriter text`	ly1-zi4r-1
Math symbols	pxsy	***Italic boldface text***	epigraficabi8r
Math extension	pxex	***Slanted boldface text***	epigraficabi8r
Italic text	epigraficai8r	CAPS	epigraficac8r
Slanted text	epigraficai8r	No caps in bold	–

Antykwa Półtawskiego with Euler

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

This macro enables us to type text in Antykwa Półtawskiego font and math in Euler font. The macro is declared by typing `\input font_antp_euler`. The macro typesets text in fonts from J. M. Nowacki's antp package (based on Polish typographer, Adam Półtawski's Antykwa Półtawskiego text fonts) and math in Walter Schmidt's Euler-VM fonts (based on Hermann Zapf's Euler and Knuth's CM fonts). L with stroke (Ł) is displayed by `\Lstroke` and l with stroke (ł) is displayed by `\lstroke`. When this macro is in use the default TEX control statement `\L` or `\l` do not work. Details of this TEX macro are given in the table below.

Font assignment in `font_antp_euler` macro

Typeface	Font name	Typeface	Font name
Roman text	rm-antpr10	**Boldface text**	rm-antpb10
Math italic	eurm10	`Typewriter text`	ly1-zi4r-1
Math symbols	cmsy10	***Italic boldface text***	rm-antpbi10
Math extension	euex10	***Slanted boldface text***	rm-antpbi10
Italic text	rm-antpri10	CAPS	rm-antpr10-sc
Slanted text	rm-antpri10	**CAPS IN BOLDFACE**	rm-antpb10-sc

Bera Serif with Concrete

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

This macro enables us to type text in Bera serif and math in Concrete. The macro is declared by typing `\input font_bera_concrete`. The macro typesets text in Bera serif fonts from Walter Schmidt's bera package (based on Bitstream Vera serif font designed by Jim Lyles of Bitstream Inc.) and math is typeset using in Jackowski, Ryćko and Bzyl's cc-pl package (based on Knuth's Concrete Roman fonts). Details of this TEX macro are given in the table below.

Font assignment in `font_bera_concrete` macro

Typeface	Font name	Typeface	Font name
Roman text	fver8t	**Boldface text**	fveb8t
Math italic	pcmi10	`Typewriter text`	fvmr8t
Math symbols	cmsy10	***Italic boldface text***	fvebo8t
Math extension	cmex10	***Slanted boldface text***	fvebo8t
Italic text	fvero8t	No caps	—
Slanted text	fvero8t	No caps in bold	—

Bera Serif with Euler

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

This macro enables us to type text in Bera serif and math in Euler. The macro is declared by typing `\input font_bera_euler`. The macro typesets text in Bera serif fonts from Walter Schmidt's bera package (based on Bitstream Vera serif font designed by Jim Lyles of Bitstream Inc.) and math in Walter Schmidt's Euler-VM fonts (based on Hermann Zapf's Euler and Knuth's CM fonts). Details of this TEX macro are given in the table below.

Font assignment in `font_bera_euler` macro

Typeface	Font name	Typeface	Font name
Roman text	fver8t	**Boldface text**	fveb8t
Math italic	eurm10	`Typewriter text`	fvmr8t
Math symbols	cmsy10	***Italic boldface text***	fvebo8t
Math extension	euex10	***Slanted boldface text***	fvebo8t
Italic text	fvero8t	No caps	—
Slanted text	fvero8t	No caps in bold	—

Bera Serif with Fouriernc

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\,dz = 0$$

for any closed contour γ completely contained in R.

This macro enables us to type text in Bera serif and math in Fouriernc (originally used with New Century). The macro is declared by typing `\input font_bera_fnc`. The macro typesets text in Bera serif fonts from Walter Schmidt's bera package (based on Bitstream Vera serif font designed by Jim Lyles of Bitstream Inc.) and math using in Michael Zedler's fouriernc package. Details of this TEX macro are given in the table below.

Font assignment in `font_bera_fnc` macro

Typeface	Font name	Typeface	Font name
Roman text	fver8t	**Boldface text**	fveb8t
Math italic	fncmii	`Typewriter text`	fvmr8t
Math symbols	fncsy	***Italic boldface text***	fvebo8t
Math extension	cmex10	***Slanted boldface text***	fvebo8t
Italic text	fvero8t	No caps	—
Slanted text	fvero8t	No caps in bold	—

Artemisia with Euler

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If f(z) is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

This macro enables us to type text in GFS Artemisia and math in Euler. The macro is declared by typing `\input font_artemisia_euler`. The macro typesets text in Antonis Tsolomitis, George D. Matthiopoulos and The Greek Font Society's GFS Artemisia fonts and math in Walter Schmidt's Euler-VM fonts (based on Hermann Zapf's Euler and Knuth's CM fonts). Details of this TEX macro are given in the table below.

Font assignment in `font_artemisia_euler` macro

Typeface	Font name	Typeface	Font name
Roman text	artemisiarg8a	**Boldface text**	artemisiab8a
Math italic	zeurm10	Typewriter text	ly1-zi4r-1
Math symbols	zeusm10	***Italic boldface text***	artemisiabi8a
Math extension	zeuex10	***Slanted boldface text***	artemisiabo8a
Italic text	artemisiai8a	Caps	artemisiasc8a
Slanted text	artemisiao8a	No caps in bold	–

Libertine with Kp-Fonts

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\,dz = 0$$

for any closed contour γ completely contained in R.

This macro enables us to type text in Linux-Libertine and math in Kp-Fonts. The macro is declared by typing `\input font_libertine_kp`. The macro typesets text in Michael Niedermair's Linux-Libertine font and math in Christophe Caignaert's Kp-Fonts. The fonts of this macro provide their own AMS symbols. Details of this TEX macro are given in the table below.

Font assignment in `font_libertine_kp` macro

Typeface	Font name	Typeface	Font name
Roman text	LinLibertineT-lf-ot1	**Boldface text**	LinLibertineTZ-lf-ot1
Math italic	jkpmi	`Typewriter text`	ly1-zi4r-1
Math symbols	jkpsy	***Italic boldface text***	LinLibertineTZI-lf-ot1
Math extension	jkpex	***Slanted boldface text***	LinLibertineTZI-lf-ot1
Italic text	LinLibertineTI-lf-ot1	CAPS	LinLibertineT-lf-sc-ot1
Slanted text	LinLibertineTI-lf-ot1	**CAPS IN BOLDFACE**	LinLibertineTZ-lf-sc-ot1

Matching AMS symbols: ® ¥ ■ ≊ ⩾ ⪷ ⪾ ⪷ ≦ ⩽ ≶ ≺ ⊀ ⋠ ℝ 𝔼 ℂ ...

Libertine with Palatino

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

This macro enables us to type text in Linux-Libertine and math in PX Fonts. The macro is declared by typing `\input font_libertine_palatino`. The macro typesets text in Michael Niedermair's Linux-Libertine font and math in Young Ryu's pxfonts, which corresponds to URW++ Palladio text fonts designed by Herman Zapf. The URW++ Palladio font is based on the Palatino font which was originally designed by Hermann Zapf for the Stempel foundry in 1950. The fonts of this macro provide their own AMS symbols. Details of this TEX macro are given in the table below.

Font assignment in `font_libertine_palatino` macro

Typeface	Font name	Typeface	Font name
Roman text	LinLibertineT-lf-ot1	**Boldface text**	LinLibertineTZ-lf-ot1
Math italic	pxmi	`Typewriter text`	ly1-zi4r-1
Math symbols	pxsy	***Italic boldface text***	LinLibertineTZI-lf-ot1
Math extension	pxex	***Slanted boldface text***	LinLibertineTZI-lf-ot1
Italic text	LinLibertineTI-lf-ot1	CAPS	LinLibertineT-lf-sc-ot1
Slanted text	LinLibertineTI-lf-ot1	**CAPS IN BOLDFACE**	LinLibertineTZ-lf-sc-ot1

Matching AMS symbols: ® ¥ ■ ≋ ⩾ ⪷ ⪰ ⪯ ≦ ⩽ ≶ ≮ ≰ ≴ ℝ 𝔼 ℂ ...

Libertine with Times

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

This macro enables us to type text in Linux Libertine and math in TX Fonts. The macro is declared by typing `\input font_libertine_times`. The macro typesets text in Michael Niedermair's Linux-Libertine font and math in Young Ryu's txfonts, which corresponds to Adobe Times text fonts. The fonts of this macro provide their own AMS symbols. Details of this TEX macro are given in the table below.

Font assignment in `font_libertine_times` macro

Typeface	Font name	Typeface	Font name
Roman text	LinLibertineT-lf-ot1	**Boldface text**	LinLibertineTZ-lf-ot1
Math italic	txmi	`Typewriter text`	cmtt10
Math symbols	txsy	***Italic boldface text***	LinLibertineTZI-lf-ot1
Math extension	txex	***Slanted boldface text***	LinLibertineTZI-lf-ot1
Italic text	LinLibertineTI-lf-ot1	CAPS	LinLibertineT-lf-sc-ot1
Slanted text	LinLibertineTI-lf-ot1	**CAPS IN BOLDFACE**	LinLibertineTZ-lf-sc-ot1

Matching AMS symbols: ® ¥ ■ ≋ ⩾ ⪷ ⪾ ⪷ ≦ ⩽ ≶ ≮ ≰ ≴ ℝ 𝔼 ℂ ...

Concrete

Euler Formula: The Euler formula, also known as Euler identity, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

This macro enables us to type text and math in Donald Knuth's Concrete fonts. The macro is declared by typing `\input font_concrete`. The macro uses Jackowski, Ryćko and Bzyl's cc-pl package which is based on Knuth's Concrete Roman fonts. Details of this TEX macro are given in the table below.

Font assignment in `font_concrete` macro

Typeface	Font name	Typeface	Font name
Roman text	pcr10	No boldface text	—
Math italic	pcmi10	`Typewriter text`	cmtt10
Math symbols	cmsy10	No italic boldface text	—
Math extension	cmex10	No slanted boldface text	—
Italic text	pcti10	Caps	pccsc10
Slanted text	pcsl10	No caps in bold	—

Computer Modern

Euler Formula: The Euler formula, also known as **Euler identity**, states

$$e^{\imath x} = \cos(x) + \imath \sin(x),$$

where $\imath$ is the *imaginary unit*.

The Euler formula can be expanded as a series:

$$\begin{aligned} e^{\imath x} &= \sum_{n=0}^{\infty} \frac{(\imath x)^n}{n!} \\ &= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + \imath \sum_{1}^{\infty} \frac{(-1)^{n-1} x^{2n-1}}{(2n-1)!} \\ &= \cos(x) + \imath \sin(x). \end{aligned}$$

Cauchy Integral Theorem: If $f(z)$ is analytic and its partial derivatives are continuous throughout some simply connected region R, then

$$\oint_{\gamma} f(z)\, dz = 0$$

for any closed contour γ completely contained in R.

This macro enables us to type text in Computer Modern font (serif). Though TEX typesets documents in Donald Knuth's Computer Modern fonts by default, this macro is being supplied so that the user can use the different sizes as discussed in this document and in case the main font of any TEX document is other than Computer Modern then by using this macro we can set the font to Computer Modern in some group. The macro is declared by typing `\input font_cm`. Details of this TEX macro are given in the table below.

Font assignment in `font_cm` macro

Typeface	Font name	Typeface	Font name
Roman text	cmr10	**Boldface text**	cmbx10
Math italic	cmmi10	`Typewriter text`	cmtt10
Math symbols	cmsy10	***Italic boldface text***	cmbxti10
Math extension	cmex10	***Slanted boldface text***	cmbxsl10
Italic text	cmti10	CAPS	cmcsc10
Slanted text	cmsl10	No caps in Boldface	—

Typefaces and Sizes

Given below are various typefaces and sizes that our macros offer.

Roman

This text is in 20 pt size.
This text is in 18 pt size.
This text is in 16 pt size.
This text is in 14 pt size.
This text is in 12 pt size.
This text is in 10 pt size.
This text is in 9 pt size.
This text is in 8 pt size.
This text is in 7 pt size.
This text is in 6 pt size.
This text is in 5 pt size.

Italic

This text is in 20 pt size.
This text is in 18 pt size.
This text is in 16 pt size.
This text is in 14 pt size.
This text is in 12 pt size.
This text is in 10 pt size.
This text is in 9 pt size.
This text is in 8 pt size.
This text is in 7 pt size.
This text is in 6 pt size.
This text is in 5 pt size.

Slanted

This text is in 20 pt size.
This text is in 18 pt size.
This text is in 16 pt size.
This text is in 14 pt size.
This text is in 12 pt size.
This text is in 10 pt size.
This text is in 9 pt size.
This text is in 8 pt size.
This text is in 7 pt size.
This text is in 6 pt size.
This text is in 5 pt size.

Boldface

This text is in 20 pt size.
This text is in 18 pt size.
This text is in 16 pt size.
This text is in 14 pt size.
This text is in 12 pt size.
This text is in 10 pt size.
This text is in 9 pt size.
This text is in 8 pt size.
This text is in 7 pt size.
This text is in 6 pt size.
This text is in 5 pt size.

Italic boldface

This text is in 20 pt size.
This text is in 18 pt size.
This text is in 16 pt size.
This text is in 14 pt size.
This text is in 12 pt size.
This text is in 10 pt size.
This text is in 9 pt size.
This text is in 8 pt size.
This text is in 7 pt size.
This text is in 6 pt size.
This text is in 5 pt size.

Slanted boldface

This text is in 20 pt size.
This text is in 18 pt size.
This text is in 16 pt size.
This text is in 14 pt size.
This text is in 12 pt size.
This is 10 pt slanted boldface.
This text is in 9 pt size.
This text is in 8 pt size.
This text is in 7 pt size.
This text is in 6 pt size.
This text is in 5 pt size.

Caps

THIS TEXT IS IN 20 PT SIZE.
THIS TEXT IS IN 18 PT SIZE.
THIS TEXT IS IN 16 PT SIZE.

THIS TEXT IS IN 14 PT SIZE.
THIS TEXT IS IN 12 PT SIZE.
THIS TEXT IS IN 10 PT SIZE.
THIS TEXT IS IN 9 PT SIZE.
THIS TEXT IS IN 8 PT SIZE.
THIS TEXT IS IN 7 PT SIZE.
THIS TEXT IS IN 6 PT SIZE.
THIS TEXT IS IN 5 PT SIZE.

Caps in boldface

THIS TEXT IS IN 20 PT SIZE.
THIS TEXT IS IN 18 PT SIZE.
THIS TEXT IS IN 16 PT SIZE.
THIS TEXT IS IN 14 PT SIZE.
THIS TEXT IS IN 12 PT SIZE.
THIS TEXT IS IN 10 PT SIZE.
THIS TEXT IS IN 9 PT SIZE.
THIS TEXT IS IN 8 PT SIZE.
THIS TEXT IS IN 7 PT SIZE.
THIS TEXT IS IN 6 PT SIZE.
THIS TEXT IS IN 5 PT SIZE.

Inter-Line and Inter-Word Spacing

As typefaces are very dear to typographic style, so is their arrangement. Of course, the value of the meaning and purpose of text, which holds even if sentences have been scribbled, is beyond comparison, but it is good to arrange good text in a good way. This part of our discussion deals with two salient features of typeset text arrangement — inter-line and inter-word spacing.

If the text font in TEX is changed, the inter-line and inter-word spacing is not changed accordingly. This is not such a problem if we declare the new font at the same size as the preceding one. But if the new font is declared at a considerably larger or smaller size, the typesetting might not be aesthetically elegant.

We deal with the inter-line and inter-word spacing problem first-hand by starting with an example. Then an "acceptable" solution to the spacing problem has been elaborated. The solution is not perfect but it is handy and a passable compromise. Then we move towards theoretical aspects of spacing. The discussion is fairly brief and can act as a good starting point for re-evaluating the "space problem". When it comes to word spacing, the best guide is our own experience. If we try to justify text (12 pt) in triple columns on an A4 page, then we are likely to face some problems. Narrower the column, sterner the justification. We will not deliberate on microtypography — a distinctive approach that devotes much to spacing issues and can be used with pdfTEX. Curious readers are referred to these three works: [1], [2], and [3].

Example

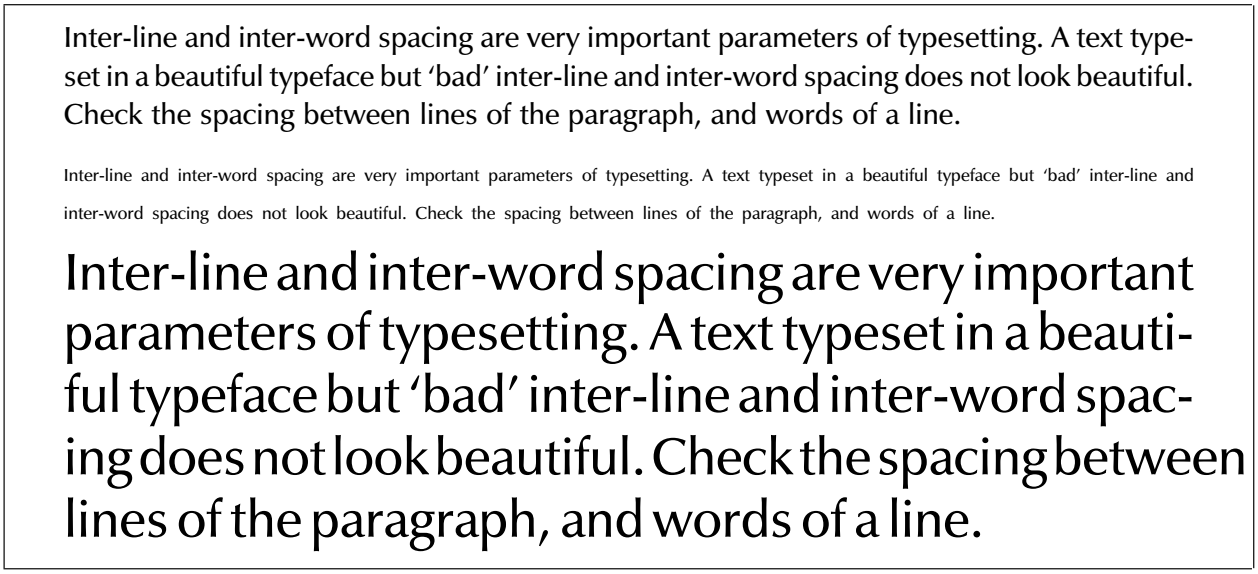
A sample TEX source file as shown below:

```
\parindent=0pt
\input font_epigrafica_euler % the font size is 10pt
Inter-line and inter-word spacing are very important parameters of
typesetting. A text typeset in a beautiful typeface but 'bad'
inter-line and inter-word spacing does not look beautiful. Check
the spacing between lines of the paragraph, and words of a line.
\medskip

\sixrm % changes the font size to 6pt
Inter-line and inter-word spacing are very important parameters of
typesetting. A text typeset in a beautiful typeface but 'bad'
inter-line and inter-word spacing does not look beautiful. Check
the spacing between lines of the paragraph, and words of a line.
\medskip

\eighteenrm % changes the font size to 18pt
Inter-line and inter-word spacing are very important parameters of
typesetting. A text typeset in a beautiful typeface but 'bad'
inter-line and inter-word spacing does not look beautiful. Check
the spacing between lines of the paragraph, and words of a line.
```

after compilation should produce something like this:



In the output we can notice that both inter-line and inter-word spacing are quite fine when the font size is 10 pt. In the 6 pt text the inter-line space is too much and and the inter-word space is more then needed. In the text at 18 pt both inter-line and inter-word spacing are less then adequate. This is because TEX is still working according to the default space values, which are declared for 10 pt font size. To tackle this, TEX offers two very useful primitive control statements ([4], pp. 76, 78). These are:

`\spaceskip` to control the inter-word space,
`\baselineskip` to control the inter-line space.

An Easy Solution

Here I am stating a technique that I use to confront spacing problems when using different fonts at different sizes. Let us make a new definition called `\fontspacing`.

```
\def\fontspacing{\baselineskip=2.8ex plus0pt minus0pt
          \spaceskip=0.333333em plus0.122222em minus0.0999999em}
```

The units, *ex* and *em* are relative ([4], pp. 60). This makes our definition more general.

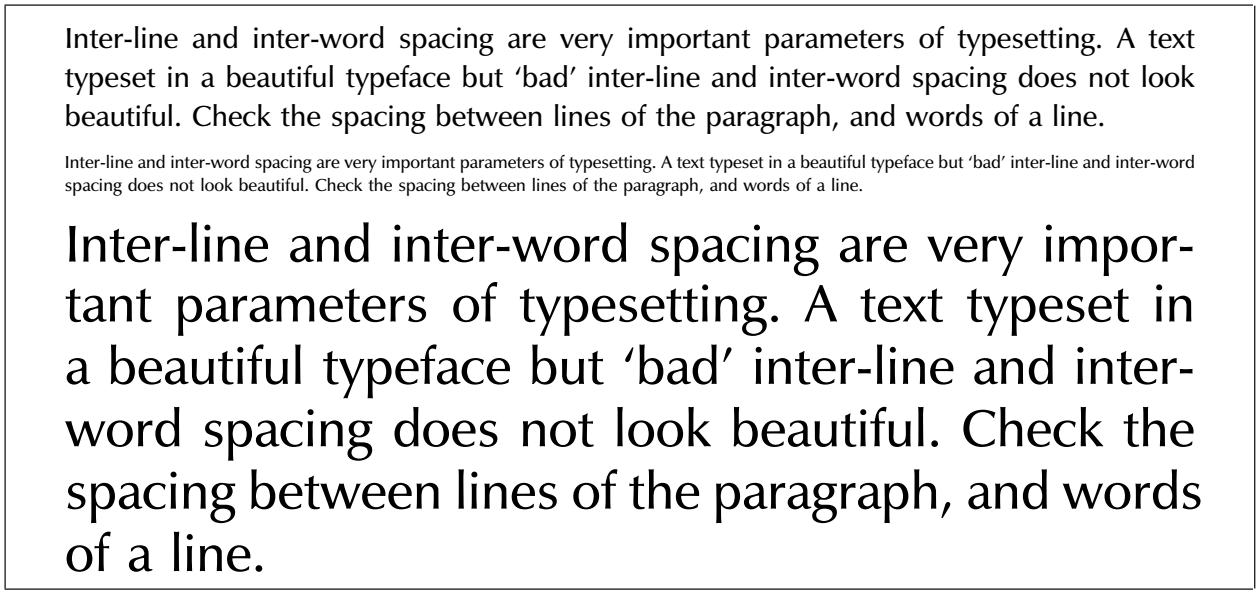
em is the width of a "quad" in the current font,
ex is the "x-height" of the current font.

Declaring `\fontspacing` would set our inter-line space to 2.8ex (= 12.05553 pt in case of font `cmr10` at 10 pt) with no *stretchability* (given after *plus*) or *shrinkability* (given after *minus*). Also `\fontspacing` would set our inter-word space to 0.333333 em, with 0.122222 em of stretchability and 0.0999999 em of shrinkability allowed. In case of font `cmr10`, these values (default) are 3.33333 pt, 1.66666 pt, and 1.11111 pt, respectively.

Let us try to use `\fontspacing` in the example given at the beginning of this chapter. A sample TEX source file as given here:

```
\parindent=0pt
\input font_epigrafica_euler % the font size is 10pt
\fontspacing % \baselineskip and \spaceskip are set accordingly
Inter-line and inter-word spacing are very important parameters of
typesetting. A text typeset in a beautiful typeface but ‘bad’
inter-line and inter-word spacing does not look beautiful. Check
the spacing between lines of the paragraph, and words of a line.
\medskip
\sixrm % changes the font size to 6pt
\fontspacing % \baselineskip and \spaceskip are set accordingly
Inter-line and inter-word spacing are very important parameters of
typesetting. A text typeset in a beautiful typeface but ‘bad’
inter-line and inter-word spacing does not look beautiful. Check
the spacing between lines of the paragraph, and words of a line.
\medskip
\eighteenrm % changes the font size to 18pt
\fontspacing % \baselineskip and \spaceskip are set accordingly
Inter-line and inter-word spacing are very important parameters of
typesetting. A text typeset in a beautiful typeface but ‘bad’
inter-line and inter-word spacing does not look beautiful. Check
the spacing between lines of the paragraph, and words of a line.
```

after compilation should produce something like this:



By using the control primitives `\spaceskip` and `\baselineskip` we get the desired spacing and these can be declared almost anywhere. For more details on spacing, please refer to [4].

Ideal Spacing?

It is a well-known fact that inter-line and inter-word spacing are vital aspects of good typography. Inter-line space is also referred to as *leading*, *line space*, *interlinear space*, and *interline space*. Inter-word space is also known as *word space* and *interword space*. What are the "best" values for inter-line and inter-word space? For sure there is no one-line answer to this question. It is subjective; what might be the "best" for someone, may look to "poor" someone else.

It can be noted that spacing is certainly dependent on the size of typesetting font. Fonts at larger sizes have different spacing requirements than font at normal or smaller sizes. Also, spacing (inter-line or inter-word) is not directly or inversely proportional to font-size, though it can serve as a good approximation and in our solution we had used the proportionality concept. Different typefaces have different spacing demands. The medium of representation also influences spacing values — text on paper is different from text on computer screens or projected slides. Spacing requirements vary if text is a single line and is meant to pass the eye in a glance, e.g., file names in a list, or if it is for continued reading, e.g., this paragraph.

Let us streamline our discussion by considering the most likely case, i.e. normal text; we find it in books, novels, and magazines. In this case the text is designed for continued reading. Even in this case, for a particular font, spacing requisites depend on the width of the text. A text that runs 15 cm wide should be typeset with different spacing parameters than some text that runs only 6 cm, e.g., in a column of a multiple-column page. But this is for some other time. For now we focus on the general case — the case of continued normal text, which is mostly in 10 – 14 pt. From this point we will discuss inter-line and inter-word space one at a time.

Inter-Word Space

We commence with Jan Tschichold's text composition rules which are constituents of The Penguin Composition Rules, which are a compilation of Tschichold's ideas. They can be found here. On text composition it is mentioned:

1. *All text composition should be as closely word-spaced as possible. As a rule, the spacing should be about a middle space or the thickness of an 'i' in the type size used.*
2. *Wide spaces should be strictly avoided. Words may be freely broken whenever necessary to void wide spacing, as breaking words is less harmful to the appearance of the page than too much space between words.*
3. *All major punctuation marks — full point, colon, and semicolon — should be followed by the same spacing as is used throughout the rest of the line.*

In this game there are no rigid rules. Robert Bringhurst writes in his influential book ([5]):

> *For a normal text face in a normal text size, a typical value for the word space is a quarter of an em which can be written M/4. A quarter of an em is typically about the same as, or slightly more than, the set-width of the letter t.*

The optimum (without stretching or shrinking) inter-word space in TEX's default regular font (`cmr10` at 10 pt) is 3.33333 pt. The width of letter 'i' of `cmr10` at 10 pt is 2.77779 pt and of letter 't' is 3.8889 pt. One quarter of an em of `cmr10` at 10 pt is 2.5 pt. A small manipulation in inter-word space, its stretchability or shrinkability, can lead to quite apparent changes.

Ideally inter-word spacing should be constant in the whole text but in justified text this is almost impossible to attain. The amount of stretching and shrinking of inter-word space and hyphenation of words has its limits. Some people would agree with Tschichold and opt for more hyphenation and less flexible inter-word space to maintain better page color while others would say

that excessive hyphenation hinders readability and they would set wider and flexible inter-word space that might lead to rivers. Over the years the inter-word space in text has increased or maybe it is too language dependent or the lack of paper was the issue — compare the inter-word space in Gutenberg's Bible, hallmark of excellent typography, and book [4], a book typeset with typographic elegance.

In book [4], Knuth instructed TEX to give some extra space after periods, commas, question and exclamation marks, colons and semicolons. By default plain TEX would do this unless we use the control sequence `\frenchspacing`. Tschichold urges not to give such extra space. In this document, I have used `\frenchspacing` as the typeset text seemed to have even color without white blocks or rivers. But when I write a scientific report or thesis, which contains mathematics, symbols, variables, etc., I prefer Knuth's way which puts extra space after punctuation — I think it makes text more readable and easier to understand. In multiple columns with normal size text on an A4 or letter size page, my experience suggests that extra space after punctuation leads to rivers and blocks of white.

Different fonts demand different inter-word space. Bitstream Charter, the current typeface, can bear and looks better with stiffer and lesser inter-word space than Computer Modern. In case we desire prime typography then we should set inter-word space according to the font in use.

Book [5] mentions a 'reasonable' value of inter-word space with stretch and shrink values. When translated into TEX's language, it becomes `\spaceskip=0.25em plus0.08em minus0.05em`. Try it to find out how good it is. Does it fill the page with black boxes? What effect does it have on hyphenation? What if multiple columns are used?

Our discussion on inter-word space concludes with the statement: *There are no ideal or perfect or best inter-word space parameters*. We are the judge of our own work and refinement in judgement comes with experience, so let's see what's coming.

Inter-Line Space

Managing inter-line space is usually easy, unless we encounter a club or widow line. In case of normal size text, the inter-line space is usually 0 – 4 pt more than the typeface size in points. The regular font this document is `mdbchr7t` at 10 pt, with an inter-line space of `12.9384pt`, and for the global magnification, `\magnification=1100` has been used.

On a page, say A4 size, for any particular font, it is acceptable to have lesser inter-line space when using multiple columns. The eye does not loose track of the line and is at ease in stepping down to the next line when the column width is less, e.g., about 6 cm. In the realm of inter-line spacing there are challenges like grid typesetting and widow lines but we will not discuss them here. TEX's instruction, `\baselineskip`, we have already discussed and more can be found in [4] and [6].

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[2] The reader has been referred to most of the references (they have not been listed on this page) via hyperlinks provided in this PDF document.