# Oz∀n∈ℝTEX Documentation

## Ozaner Hansha

## What is Oz∀n∈ℝTEX?

The eponymous Oz∀n∈ℝTEX is a TEX package of miscellaneous commands, preformatting, and default package inclusions. Rather than append these definitions at the top of all my LaTEX files, I decided to factor them out as a package.

This document will serve as documentation, both in the form of examples and rationale, of this package. It also serves as a sort of unit test because, if it compiles, the package probably works.

## Contents

# 0  Preformatting

## 0.1  Margins

Via the `geometry` package, Oz∀n∈ℝTₑX changes the default margin size to 1.5in. For reference, the article document class uses a margin size of 1.875in.

## 0.2  Title starting height

Using the `titling` package, set the starting height of the title back by 7em.

## 0.3  Hyper-reference styling

Instead of colored boxes, hyper-references use colored text instead:

- Internal link: blue

- File link: magenta

- URL: cyan

# 1  Base packages

The Oz∀n∈ℝTₑX package includes several `\usepackage` declarations. These are packages that I use commonly enough to simply include in every document. These packages are, in order of inclusion, listed below:

*Note*: Nested bullets denote packages that are included as dependencies of the parent bullet. These are only listed if I use them independently of their parent package.

- `fontenc`: properly renders certain special characters in text-mode.

- `geometry`: used to adjust the document margins.

- `titling`: used to push back the title starting height.

- `hyperref`: adds commands for hyper-referencing, and adds hyper-references to the table of contents.

- `amssymb`: Adds many useful mathematical symbols (e.g. blackboard bold letters ($\mathbb{R}$), arrows ($\curvearrowright$), inequalities ($\ngeq$), etc.).

- `physics`: adds a whole bunch of common functions (i.e. trig, logs, exp, matrix ops) as well as commands for typesetting matrices, derivatives, and vectors. Crucially, can now use **v** (`\vb v`) instead of $\vec{v}$ (`\vec v`) for vectors.

  - `amsmath`: A general math package that adds many misc. features including: equation alignment, matrix environments, fraction variants, extensible arrows, creating operators, and substacks.

## 2   Textual Commands

### 2.1   \Ozaner & \Ozanerbf

\Ozaner{} $\longrightarrow$ Oz$\forall$n$\in\mathbb{R}$
\Ozanerbf{} $\longrightarrow$ **Oz$\forall$n$\in\mathbb{R}$**

The stylized version of my name I use in various places, including this package. The bolded version (i.e. \Ozanerbf) is necessary as \textbf won't boldface embedded math symbols.

*Note*: to typeset Oz$\forall$n$\in\mathbb{R}$T$_{\text{E}}$X simply append \TeX to the command, i.e. \Ozaner\TeX{}.

## 3   Calculus Commands

### 3.1   \evalb

\evalb{f(x)}{a}{b} $\longrightarrow [f(x)]_a^b$

Intended to denote the result of a definite integral after integration, but before evaluation:

$$\int_0^5 2x\,\mathrm{d}x = \left[x^2\right]_0^5 = 5^2 - 0^2$$

### 3.2   \diff

\diff x $\longrightarrow \mathrm{d}x$

The \diff is simply the \dd command, from the physics package, prepended with a space. It, along with a variable following it, are intended to be used as the differential in an integral:

$$\int x\,\mathrm{d}x = x^2 + C$$

Without the prepended space, i.e. using \dd, the differential is too close to the integrand:

$$\int x\mathrm{d}x = x^2 + C$$