

# Xmath Documentation

October 19, 2020

## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Macros</b>	<b>1</b>
2.1	Classical sets . . . . .	1
2.2	Other sets . . . . .	1
2.3	Operators . . . . .	2
2.4	Others . . . . .	2
<b>3</b>	<b>License</b>	<b>3</b>

## 1 Introduction

The Xmath package is an easy way to write math in L<sup>A</sup>T<sub>E</sub>X. Xmath is an extension of the `amsthm`, `amssymb`, `amsmath` and `dsfont` packages. This package implements a large number of macros for sets, functions, operators commonly used in math. Xmath is a project developed by Martin Debaisieux, student at the University of Mons (UMONS) in Belgium. If you have any suggestions, please send me a pull request on <https://github.com/MartinDbx/xmath-package>.

## 2 Macros

### 2.1 Classical sets

- `\nat` The set of all natural numbers  $\mathbb{N}$ .
- `\intg` The set of all integer numbers  $\mathbb{Z}$ .
- `\rat` The set of all rational numbers  $\mathbb{Q}$ .
- `\real` The set of all real numbers  $\mathbb{R}$ .
- `\comp` The set of all complex numbers  $\mathbb{C}$ .

`\field` The field  $\mathbb{F}$ .

`\znZ` The ring  $\mathbb{Z}/n\mathbb{Z}$ . This macro takes as argument the value of  $n$ .

## 2.2 Other sets

`\A` The alternating group  $A$ .

`\Aut` The automorphism group  $\text{Aut}$ .

`\D` The dihedral group  $D$ .

`\E` The set  $E$ .

`\im` The image set  $\text{im}$ .

`\GL` The general linear group  $\text{GL}$ .

`\Graph` The graph set  $\text{Graph}$ .

`\L` The  $L$  space.

`\M` The matrix set  $M$ .

`\N` The normalizer  $N$ .

`\O` The orthogonal group  $O$ .

`\Orb` The orbit  $\text{Orb}$ .

`\Q` The quaternion group  $Q$ .

`\SL` The special linear group  $\text{SL}$ .

`\SO` The special orthogonal group  $\text{SO}$ .

`\Stab` The stabilizer set  $\text{Stab}$ .

`\S` The symmetric group  $S$ .

`\Z` The center of a group  $Z$ .

## 2.3 Operators

`\card` The cardinality of a set  $\text{card}$ .

`\d` The derivative  $d$ .

`\Id` The identity function  $\text{Id}$ .

`\normal` The sub group normal symbol  $\triangleleft$ .

`\gen` The generating set of a group  $\langle g \rangle$ . This macro takes as argument the value of  $g$ .

`\ord` The order of an element `ord`.

`\pgcd` [FR] The greatest common divisor `pgcd`.

`\ppcm` [FR] The lowest common multiple `ppcm`.

`\Var` The variance function `Var`.

## 2.4 Others

`\xbox` Draw a box around your parameter  $x$  `\x`.

## 3 License

Copyright © 2020 by Martin Debaisieux. This file may be distributed and/or modified under the conditions of the L<sup>A</sup>T<sub>E</sub>XProject Public License, either version 1.3 of this license or (at your option) any later version. The latest version of this license is in <http://www.latex-project.org/lppl.txt> and version 1.3 or later is part of all distributions of L<sup>A</sup>T<sub>E</sub>Xversion 2005/12/01 or later.