Math fonts for `newtx` and `newpx`

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1 Introduction

This file adds some information updating the information in `implementation.pdf`, showing the relationships between the various forms of math fonts. For simplicity, we discuss only regular weight fonts—there is for each a corresponding bold weight constructed in the same way. Font constructed for use with script-style (7pt) and scriptscriptstyle (5pt) are also ignored, as their construction was adequately described in `implementation.pdf`. Likewise, we ignore the variant triggered by `varg`, which is indicated by the 1 appended near the end of the math font name.

The math fonts used in these packages are of the following families:

operators (`\fam0`) is a copy of the Roman text font;

letters (`\fam1`—OML encoding, 7-bit (128 characters)) containing the math italic Roman and mathematical Greek italic letters, among others;

symbols (`\fam2`—OMS encoding, 7-bit (128 characters)) containing most common mathematical symbols;

largesymbols (`\fam3`—sometimes OMX encoding, 7-bit (128 characters), sometimes LMX encoding, 8-bit (256 characters)) containing extensible delimiters and large mathematical symbols;

lettersA (unencoded 8-bit (256 characters)) with upright Greek, Gothic and assorted symbols;

AMSa (unencoded 8-bit (256 characters)) with replacements for the AMSA characters;

AMSb (unencoded 8-bit (256 characters)) with replacements for the AMSB characters;

symbolsC (unencoded−8-bit (256 characters)) containing less common mathematical symbols;

largesymbolsA (unencoded−8-bit (256 characters)) containing less common extensible or large mathematical symbols.

The options you choose affect only `letters`, `lettersA` and `largesymbols`, and these are the only ones discussed below.

LETTERS:

- `newtx`:
    - The default is Times Roman and Greek italic shapes—ntxmi;
    - `minion` uses Roman and Greek italic shapes taken from MinionPro—zmnmi;
    - `garamondx` uses Times italic Greek plus Roman italic shapes taken from garamondx—zgmmi;

- – `libertine` uses Roman and Greek italic shapes taken from libertine—`nxlmi`.

- newpx:

  - – The default is Palatino (clone) Roman and Greek italic shapes—`npxmi`;

LETTERSA:
Among other unique glyphs, this also contains variant forms for other characters such as small delimiters.

- newtx:

  - – The default is Times Greek upright shapes—`ntxmia`;

  - – `minion` substitutes Greek upright shapes taken from MinionPro—`zmnmia`;

  - – `libertine` substitutes Greek upright shapes taken from libertine—`nxlmia`.

- newpx:

  - – The default is Palatino (clone) Greek upright shapes—`npxmia`;

LARGESYMBOLS:
The glyphs don't depend on the font options but do on the option `bigdelims`. OMX encoding is not used for this family, in favor of an LMX-(un)encoded 8-bit math extension.

- newtx:

  - – The LMX-(un)encoded 8-bit math extension brings in new glyphs mainly from `txex-bar`, `ntxexb` and `ntxsyralt`, and goes by the name `ntxexx`.

- newpx:

  - – The LMX-(un)encoded 8-bit math extension goes by the name `npxexx`, constructed by scaling up `ntxexx`.