Minion2 (zmn) as an add-on to the New TX font package

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1 Preliminaries

The package `newtxmath` (versions 1.00 and higher) has an option `minion` that allows the use of MinionPro as math letters (Latin and Greek) within the math font, with a modified math italic v (v) that is distinct from \nu (ν), unlike the MinionPro package on CTAN. There are some caveats:

- You must use a recent version (2.0 or higher) of MinionPro, such as the version that comes with recent versions of Adobe Reader.

- In addition, the fonts must installed under special names so they can be recognized by the support files and have distinct tfm and PostScript names which will not interfere with a separate installation of MinionPro as a text file—the details are spelled out below.

1.1 How to install your MinionPro fonts

The underlying issue is that the new versions (version 2.00 and greater) have glyphs that were not present in the original family, and the names of some glyphs have been changed. (You may see this problem if you try to install the MinionPro package from 2007 (on CTAN) where the encoding files are no longer entirely appropriate.) My goal is to allow you to use older versions of the MinionPro fonts with that package for text only, while not raising conflicts with the use of the new versions in `newtxmath`. To cover the possible sources of problems, we need to give the new versions new filenames and, in addition, new PostScript names. The methods described below are revisions of the original, made necessary by the apparent failure in this case of cfftot1 to make pfb files compatible with those generated by FontForge.

The following subsection provides the basic procedure.

1.2 A method that works for all platforms

Navigate to `http://www.freefontconverter.com` and use their File Chooser to choose, one at a time, the files

```
MinionPro-Regular.otf
MinionPro-Bold.otf
MinionPro-It.otf
MinionPro-BoldIt.otf
```

choosing the `pfa` (`PostScript`) as the output file format. Move the output files to a working folder and change their names to:

```
zmnr.pfa   ## from minionproregular.pfa
zmnb.pfa   ## from minionprobold.pfa
zmnri.pfa  ## from minionproit.pfa
zmnbi.pfa  ## from minionproboldit.pfa
```

Using a plain text editor (*not* Word), change the text in the line near the top starting with

```
/FontName /MinionPro
```

to

```
/FontName /Minion2Pro
```

in each of the four `.pfa` files. Finally, change the resulting `pfa` files to `pfb` (`PostScript`) format using once again the `freefontconverter` site. You should now have four `pfb` files named `zmnr.pfb`, `zmnri.pfb`, `zmnb.pfb`, `zmnbi.pfb`) that can be copied into the `fonts/type1/adobe/minion2` subfolder of your downloaded `minion2newtx.tds`, ready to install as instructed in the accompanying README.

(These names are used to preserve the Karl Berry font naming scheme to some extent—mn is the symbol for MinionPro, but your original versions most likely used `pmn`, the initial `p` indicating Adobe. We can't reuse `pmn` so we use `zmn`, the initial `z` indicating a non-standard situation, but this avoids a naming conflict.)

After refreshing your database, you need to enable the map file `zmn.map` and run the appropriate version of `updmap` for your setup. See the README for details.

1.3   Using the same fonts for text

If you wish to use the new versions also as text fonts with [pdf]latex, you will also need to convert them to `.pfb` format without changing the names, which may be achieved as above to make `MinionPro-Regular.pfb`, etc and using the MinionPro package from CTAN.

If you wish to avoid encoding problems with version 2 MinionPro, replace the original encoding files

```
base-MinionPro-aa.enc
base-MinionPro-ab.enc
base-MinionPro-ac.enc
base-MinionPro-ad.enc
base-MinionPro-ae.enc
```

with those in the file `attachment.zip` from
`https://lists.berlios.de/pipermail/minionpro-devel/attachments/20090814/4e956ea2/` (This site seems to no longer exist.)

Another option is to use otfinst or `autoinst` to make a text package. One advantage over the package on CTAN is that you have the option to scale all text as you wish. (With Mac OS X, TeXFontUtility2013 handles generating the text support files and enabling them automatically.) To use `autoinst`, make a folder with just the `.otf` files, create a subfolder named `texmf`, and run the version of the following command line appropriate to your platform:

```
# OS X
```

```
/usr/texbin/autoinst --inferiors --fractions --verbose --noupdmap\
  --notitling --target=./texmf --encoding=OT1,LY1,T1 --vendor=adobe\
  --typeface=minion2pro *.otf


# Linux---assumes you have added path to TeXLive's bin to your $PATH
autoinst --inferiors --fractions --verbose --noupdmap\
  --notitling --target=./texmf --encoding=OT1,LY1,T1 --vendor=adobe\
  --typeface=minion2pro *.otf


# Windows---assumes you have installed the current TeX Live.
autoinst --inferiors --fractions --verbose --noupdmap\
  --notitling --target=./texmf --encoding=OT1,LY1,T1 --vendor=adobe\
  --typeface=minion2pro *.otf
```

The result will be LaTeX support files created in standard TDS layout within the folder `texmf`, which may be installed in the usual way. If you do use `autoinst` to generate the support files, you may find that `minion2pro.sty` (in a subfolder of the `doc` folder) is much more capable than the one generated, and can be used in its place.

Notes for Windows users: To install TeX Live, navigate to `https://www.tug.org/texlive/quickinstall.html` and follow the directions. Choose the full installation. You will end up, after a lengthy download, with the full array of packages, the binaries (this is the part you really want) and scripts. After installation, your PATH will be modified to place the `texlive` installation `bin` ahead of MikTeX's binaries, and you will most likely wish to undo that after finishing the project. There is no need after that to erase the `texlive` installation unless you are short of space on your machine. By the way, the support files can be made on any platform, so you can simply take your `.otf` files to a friendly mathematician who has an account on a `*nix` machine (even a Raspberry Pi) with TeXLive installed and ask them to make the support files.

Example:

```
\usepackage[lf,onlytext]{MinionPro}% no osf, no math
\usepackage[sf]{myriad}
\usepackage[T1]{fontenc}
\usepackage[scaled=0.85]{beramono}
\usepackage[leqno]{amsmath}
\usepackage[minion,vvarbb,bigdelims,cmintegrals]{newtxmath}
\usepackage[bb=boondox,frak=boondox]{mathalfa}
\usepackage{bm}
\renewcommand{\rmdefault}{MinionPro-TOSF} % use osf except in math
```

Sample output:

The typeset math below follows the ISO recommendations that only variables be set in italic. Note the use of upright shapes for d, e and π. (The first two are entered as `\mathrm{d}` and `\mathrm{e}`, and in fonts derived from `newtxmath` or `mtpro2`, the last is entered as `\uppi`.)

Simplest form of the *Central Limit Theorem*: *Let* $X_1, X_2, \cdots$ *be a sequence of iid random variables with mean* 0 *and variance* 1 *on a probability space* $(\Omega, \mathscr{F}, \mathbb{P})$. *Then*

$$\mathbb{P}\left(\frac{X_1 + \cdots + X_n}{\sqrt{n}} \le y\right) \to \mathfrak{N}(y) := \int_{-\infty}^{y} \frac{\mathrm{e}^{-t^2/2}}{\sqrt{2\pi}}\,\mathrm{d}t \quad \text{as } n \to \infty,$$

or, equivalently, letting $S_n := \sum_1^n X_k$,

$$\mathbb{E}f(S_n/\sqrt{n}) \to \int_{-\infty}^{\infty} f(t)\frac{e^{-t^2/2}}{\sqrt{2\pi}}\,\mathrm{d}t \quad \text{as } n \to \infty, \text{ for every } f \in b\mathscr{C}(\mathbb{R}).$$

2   Manifest

```
rzmn-gr-b.tfm      % bold greek from new MinionPro (zmn)
rzmn-gr-bit.tfm    % bold italic greek from new MinionPro
rzmn-gr-it.tfm     % italic greek from new MinionPro
rzmn-gr-r.tfm      % regular greek from new MinionPro
rzmnb.tfm          % raw tfm for bold new MinionPro
rzmnbi.tfm         % raw tfm for bold italic new MinionPro
rzmnr.tfm          % raw tfm for regular new MinionPro
rzmnri.tfm         % raw tfm for italic new MinionPro
zmnbmi.{tfm,vf}    % virtual font---bold math italic, zmn letters
zmnbmia.{tfm,vf}   % virtual font---bold math italicA, zmn letters
zmnmi.{tfm,vf}     % virtual font---math italic, zmn letters
zmnmia.{tfm,vf}    % virtual font---math italicA, zmn letters
```