

# The unicode-math test suite

Will Robertson

Compiled: September 29, 2009

## Preamble

The following pieces of output are generated from the code shown. As well as being good minimal examples, these tests are useful to ensure that new bugs don't affect old behaviour. When the test suite is run, the new output is compared pixel by pixel with that shown here and warnings produced if the outputs are not identical.

### 1 Test 001a

```
\input{umtest-preamble}  
\usepackage[math-style=TeX]{unicode-math}  
\setmathfont{Cambria Math}  
\begin{document}  
\[\LATINtext\]  
\[\latintext\]  
\[\LATINmath\]  
\[\latinmath\]  
\end{document}
```

*ABCDEFGHIJKLMNOPQRSTUVWXYZ*  
*abcdefghijklmnopqrstuvwxyz*  
*ABCDEFGHIJKLMNOPQRSTUVWXYZ*  
*abcdefghijklmnopqrstuvwxyz*

### 2 Test 001b

```
\input{umtest-preamble}  
\usepackage[math-style=ISO]{unicode-math}  
\setmathfont{Cambria Math}  
\begin{document}  
\[\LATINtext\]  
\[\latintext\]  
\[\LATINmath\]  
\[\latinmath\]  
\end{document}
```

*ABCDEFGHIJKLMNOPQRSTUVWXYZ*  
*abcdefghijklmnopqrstuvwxyz*  
*ABCDEFGHIJKLMNOPQRSTUVWXYZ*  
*abcdefghijklmnopqrstuvwxyz*

### 3 Test 001c

```
\input{umtest-preamble}
\usepackage[math-style=literal]{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\backslash\mathrm{LATINtext}\]
\[\backslash\mathrm{latintext}\]
\[\backslash\mathrm{LATINmath}\]
\[\backslash\mathrm{latinmath}\]
\end{document}
```

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

### 4 Test 001d

```
\input{umtest-preamble}
\usepackage[math-style=French]{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\backslash\mathrm{LATINtext}\]
\[\backslash\mathrm{latintext}\]
\[\backslash\mathrm{LATINmath}\]
\[\backslash\mathrm{latinmath}\]
\end{document}
```

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

### 5 Test 002a

```
\input{umtest-preamble}
\usepackage[math-style=TeX]{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\backslash\mathrm{GREEKtext}\]
\[\backslash\mathrm{greektext}\]
\[\backslash\mathrm{GREEKmath}\]
\[\backslash\mathrm{greekmath}\]
\end{document}
```

ΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ

αβγδεζηθικλμνξοπρρςστυφφχψω

ΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ

αβγδεζηθικλμνξοπρρςστυφφχψω

## 6 Test 002b

```
\input{umtest-preamble}
\usepackage[math-style=ISO]{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\GREEKtext\]
\[\greektext\]
\[\GREEKmath\]
\[\greekmath\]
\end{document}
```

*ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ*  
*αβγδεεζηθικκλμνξοπωρρςστυφφχψω*  
*ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ*  
*αβγδεεζηθικκλμνξοπωρρςστυφφχψω*

## 7 Test 002c

```
\input{umtest-preamble}
\usepackage[math-style=literal]{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\GREEKtext\]
\[\greektext\]
\[\GREEKmath\]
\[\greekmath\]
\end{document}
```

*ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ*  
*αβγδεεζηθικκλμνξοπωρρςστυφφχψω*  
*ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ*  
*αβγδεεζηθικκλμνξοπωρρςστυφφχψω*

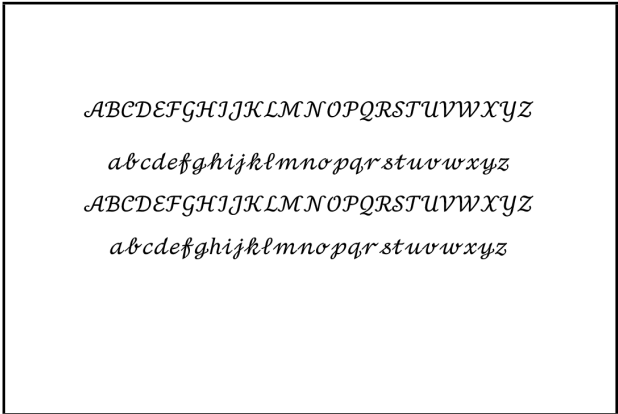
## 8 Test 002d

```
\input{umtest-preamble}
\usepackage[math-style=French]{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\GREEKtext\]
\[\greektext\]
\[\GREEKmath\]
\[\greekmath\]
\end{document}
```

*ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ*  
*αβγδεεζηθικκλμνξοπωρρςστυφφχψω*  
*ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ*  
*αβγδεεζηθικκλμνξοπωρρςστυφφχψω*

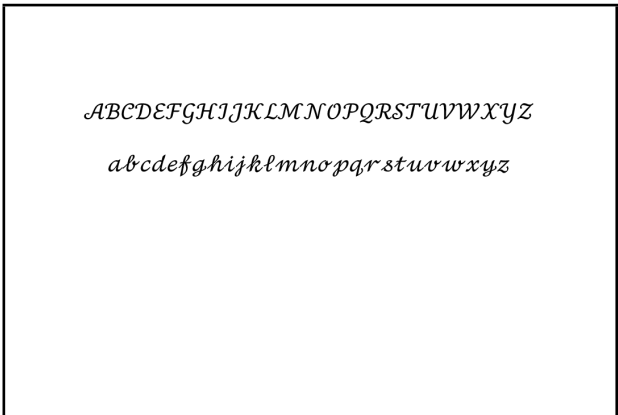
9 Test 010a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\mathcal{\text{LATINtext}}\]
\[\mathcal{\text{latintext}}\]
\[\mathcal{\text{LATINmath}}\]
\[\mathcal{\text{latinmath}}\]
\end{document}
```



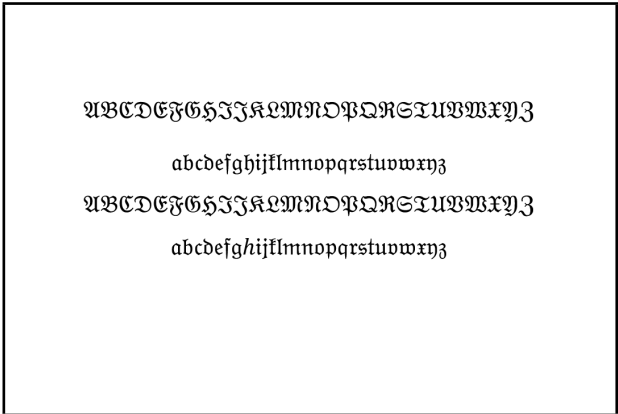
10 Test 010b

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\text{LATINmathscr}\]
\[\text{latinmathscr}\]
\[\text{reservedmathscr}\]
\end{document}
```



11 Test 010c

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\mathfrak{\text{LATINtext}}\]
\[\mathfrak{\text{latintext}}\]
\[\mathfrak{\text{LATINmath}}\]
\[\mathfrak{\text{latinmath}}\]
\end{document}
```



## 12 Test 011a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\mathup{\text{LATINtext}}\]
\[\mathup{\text{LATINtext}}\]
\[\mathup{\text{LATINmath}}\]
\[\mathup{\text{LATINmath}}\]
\end{document}
```

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

## 13 Test 011b

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\mathup{\text{GREEKtext}}\]
\[\mathup{\text{GREEKtext}}\]
\[\mathup{\text{GREEKmath}}\]
\[\mathup{\text{GREEKmath}}\]
\end{document}
```

ΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ

αβγδεζηθικλμνξοπρρςστυφχψω

ΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ

αβγδεζηθικλμνξοπρρςστυφχψω

## 14 Test 012a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\mathit{\text{LATINtext}}\]
\[\mathit{\text{LATINtext}}\]
\[\mathit{\text{LATINmath}}\]
\[\mathit{\text{LATINmath}}\]
\end{document}
```

*ABCDEFGHIJKLMNOPQRSTUVWXYZ*

*abcdefghijklmnopqrstuvwxyz*

*ABCDEFGHIJKLMNOPQRSTUVWXYZ*

*abcdefghijklmnopqrstuvwxyz*

# 15 Test 012b

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\mathit{\text{\GREEKtext}}\]
\[\mathit{\text{\greektext}}\]
\[\mathit{\text{\GREEKmath}}\]
\[\mathit{\text{\greekmath}}\]
\end{document}
```

ABΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ

αβγδεεζηθικκλμνξοπρρςστυφφχψω

ABΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ

αβγδεεζηθικκλμνξοπρρςστυφφχψω

# 16 Test 013a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\mathbb{\text{\LATINtext}}\]
\[\mathbb{\text{\latintext}}\]
\[\mathbb{\text{\LATINmath}}\]
\[\mathbb{\text{\latinmath}}\]
\end{document}
```

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

ABDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

# 17 Test 013b

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\mathbb{0123456789}\]
\[\numbersmathbb{\}]
\end{document}
```

0123456789

0123456789

## 18 Test 013c

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\backslash\mathrm{LATINmathbb}\backslash
\backslash\mathrm{latinmathbb}\backslash
\backslash\mathrm{reservedmathbb}\backslash
\end{document}
```

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

## 19 Test 100a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[ \left( \left( \left( \left( \left( \left( x^2 \right)^2 \right)^2 \right)^2 \right)^2 \right)^2 \right)
\end{document}
```

$$\left(\left(\left(\left(\left(\left(x^2\right)^2\right)^2\right)^2\right)^2\right)^2\right)$$

## 20 Test 100b

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[ \left[ \left[ \left[ \left[ \left[ \left[ x^2
      \right]^2 \right]^2 \right]^2 \right]^2 \right]^2 \right]^2
\end{document}
```

$$\left[\left[\left[\left[\left[x^2\right]^2\right]^2\right]^2\right]^2\right]^2$$

## 21 Test 100c

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[ \left\{ \left\{ \left\{ \left\{ \left\{ \left\{ \left\{ \left\{ \right\}^2 \right\}^2 \right\}^2 \right\}^2 \right\} \right. \right. \right. \right. \right. \right. \right. \right.
\end{document}
```

$$\left\{\left\{\left\{\left\{\left\{\left\{\left\{x^2\right\}^2\right\}^2\right\}^2\right\}^2\right\}^2\right\}^2\right\}$$

## 22 Test 100d

[illegible]

$$\left| \left| \left| \left| \left| \left| x^2 \right|^2 \right|^2 \right|^2 \right|^2 \right|^2 \right|$$

## 23 Test 100e

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[ \left \left \left \left \left \left x^2
\right ^2 \right ^2 \right ^2 \right ^2 \right
\[ \left\Vert \left\Vert \left\Vert \left\Vert \left\Vert \left\Vert
\right\Vert^2 \right\Vert^2 \right\Vert^2 \right\Vert^2 \right\Vert^2
\end{document}
```

The figure consists of two vertically stacked diagrams. Each diagram shows a series of vertical lines of varying heights, creating a stepped profile. In the top diagram, a horizontal line segment is drawn across the middle of the grid, labeled with the expression  $x^2$ . In the bottom diagram, a similar horizontal line segment is drawn, also labeled with  $x^2$ . The diagrams illustrate the construction of a 2D grid for a numerical method.



24    Test 150a

```
\input{umtest-preamble}  
\usepackage{amsmath,unicode-math}  
\setmathfont{Cambria Math}  
\begin{document}  
\centerline{$\int\!\!\!\int\!\!\!\int\!\!\!\int\!\!\!\int$}  
\[\int\!\!\!\int\!\!\!\int\!\!\!\int\!\!\!\int\!\!\!\int\]  
\end{document}
```

$$\int \int \cdots \int$$
$$\int \int \cdots \int$$