

# The unicode-math test suite

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Compiled: October 9, 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}  
\[ \text{LATINtext} \]  
\[ \text{latin} \]  
\[ \text{LATINmath} \]  
\[ \text{latin} \]  
\end{document}
```

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

### 2 Test 001b

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

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

### 3 Test 001c

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

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
*abcdefghijklmnopqrstuvwxyz*  
ABCDEFGHIJKLMNOPQRSTUVWXYZ  
*abcdefghijklmnopqrstuvwxyz*

### 4 Test 001d

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

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
*abcdefghijklmnopqrstuvwxyz*  
ABCDEFGHIJKLMNOPQRSTUVWXYZ  
*abcdefghijklmnopqrstuvwxyz*

### 5 Test 001e

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

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
*abcdefghijklmnopqrstuvwxyz*  
ABCDEFGHIJKLMNOPQRSTUVWXYZ  
*abcdefghijklmnopqrstuvwxyz*

## 6 Test 002a

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

ΑΒΓΔΕΖΗΘΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
*αβγδεεζηθθικλμνξοπρρςστυφφχψω*  
ΑΒΓΔΕΖΗΘΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
*αβγδεεζηθθικλμνξοπρρςστυφφχψω*

## 7 Test 002b

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

ΑΒΓΔΕΖΗΘΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
*αβγδεεζηθθικλμνξοπρρςστυφφχψω*  
ΑΒΓΔΕΖΗΘΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
*αβγδεεζηθθικλμνξοπρρςστυφφχψω*

## 8 Test 002c

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

ΑΒΓΔΕΖΗΘΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
*αβγδεεζηθθικλμνξοπρρςστυφφχψω*  
ΑΒΓΔΕΖΗΘΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
*αβγδεεζηθθικλμνξοπρρςστυφφχψω*

## 9 Test 002d

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

ΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
αβγδεζηθικλμνξοπρρςστυφφχψω  
ΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
αβγδεζηθικλμνξοπρρςστυφφχψω

## 10 Test 002e

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

ΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
αβγδεζηθικλμνξοπρρςστυφφχψω  
ΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
αβγδεζηθικλμνξοπρρςστυφφχψω

## 11 Test 010a

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

*ΑΒΓΔΕΦΓΗΙJKΛΜΝΟΡQΡSTUVWXYZ*  
*αβcdefghijklmnopqrstuvwx yz*  
*ΑΒΓΔΕΦΓΗΙJKΛΜΝΟΡQΡSTUVWXYZ*  
*αβcdefghijklmnopqrstuvwx yz*

## 12 Test 010b

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

*ABCDEFGHIJKLMNOPQRSTUVWXYZ*  
*abcdefghijklmnopqrstuvwxyz*

## 13 Test 010c

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

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

## 14 Test 010d

```
\input{umtest-preamble}  
\usepackage{unicode-math}  
\setmathfont{Cambria Math}  
\begin{document}  
\[\LATINmathfrak\  
\[\latinmathfrak\  
\[\reservedmathfrak\  
\end{document}
```

*ABCDEFGHIJKLMNOPQRSTUVWXYZ*  
*abcdefghijklmnopqrstuvwxyz*

# 15 Test 011a

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

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
*abcdefghijklmnopqrstuvwxyz*  
ABCDEFGHIJKLMNOPQRSTUVWXYZ  
*abcdefghijklmnopqrstuvwxyz*

# 16 Test 011b

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

ΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
*αβγδεζηθικλμνξοπρρςστυφχψω*  
ΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
*αβγδεζηθικλμνξοπρρςστυφχψω*

# 17 Test 012a

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

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

## 18 Test 012b

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

*ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ*  
*αβγδεεζηθικκλμνξοπρρςστυφφχψω*  
*ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ*  
*αβγδεεζηθικκλμνξοπρρςστυφφχψω*

## 19 Test 013a

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

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz  
ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

## 20 Test 013b

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

0123456789  
0123456789

21 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

22 Test 013d

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{STIXGeneral}
\begin{document}
\[\backslash\mathrm{mathbb}\{\pi\Gamma\}\quad\backslash\mathrm{mathbb}\{\sum\}\backslash
\[\backslash\mathrm{mathbb}\{\sum\}\backslash
\[\backslash\mathrm{mathbb}\{\sum\}\backslash
\[\backslash\mathrm{mathbb}\{\sum\}\backslash
\end{document}
```

$\pi\Gamma$      $\pi\Gamma$

$\sum_0^1$

$\sum_0^1$

$\sum_0^1$

23 Test 013e

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\backslash\mathrm{mathbb}\mathrm{it}\{Ddeij\}\quad\backslash\mathrm{mathbb}\mathrm{it}\{\sum\}\backslash
\end{document}
```

*Ddeij*    *Ddeij*



24    Test 014a

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

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz  
ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

25    Test 014b

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

0123456789  
0123456789

26    Test 014c

```
\input{umtest-preamble}  
\usepackage{unicode-math}  
\setmathfont{Cambria Math}  
\begin{document}  
\[\LATINmathsfup\]  
\[\latinmathsfup\]  
\end{document}
```

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

## 27 Test 015a

```
\input{umtest-preamble}  
\usepackage{unicode-math}  
\setmathfont{Cambria Math}  
\begin{document}  
\[\mathsf{fit}\{LATINtext}\]  
\[\mathsf{fit}\{latintext}\]  
\[\mathsf{fit}\{LATINmath}\]  
\[\mathsf{fit}\{latinmath}\]  
\[\mathsf{fit}\{0123456789}\]  
\end{document}
```

*ABCDEFGHIJKLMNOPQRSTUVWXYZ*  
*abcdefghijklmnopqrstuvwxyz*  
*ABCDEFGHIJKLMNOPQRSTUVWXYZ*  
*abcdefghijklmnopqrstuvwxyz*  
0123456789

## 28 Test 015b

```
\input{umtest-preamble}  
\usepackage{unicode-math}  
\setmathfont{Cambria Math}  
\begin{document}  
\[\LATINmathsf{fit}\]  
\[\latinmathsf{fit}\]  
\end{document}
```

*ABCDEFGHIJKLMNOPQRSTUVWXYZ*  
*abcdefghijklmnopqrstuvwxyz*

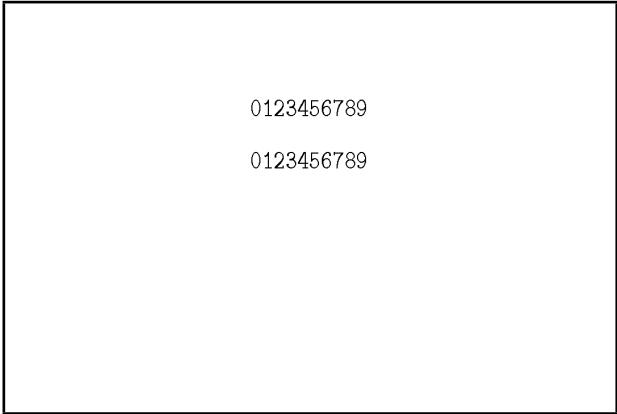
## 29 Test 016a

```
\input{umtest-preamble}  
\usepackage{unicode-math}  
\setmathfont{Asana Math}  
\begin{document}  
\[\mathhtt{fit}\{LATINtext}\]  
\[\mathhtt{fit}\{latintext}\]  
\[\mathhtt{fit}\{LATINmath}\]  
\[\mathhtt{fit}\{latinmath}\]  
\end{document}
```

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

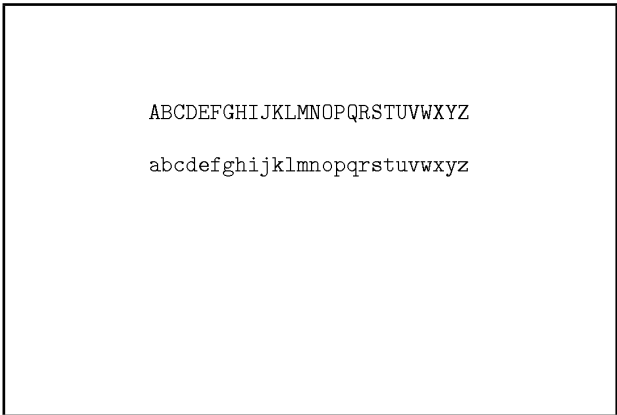
### 30 Test 016b

```
\input{umtest-preamble}  
\usepackage{unicode-math}  
\setmathfont{Asana Math}  
\begin{document}  
\[\mathhtt{0123456789}\]  
\[\numbersmathtt\]  
\end{document}
```



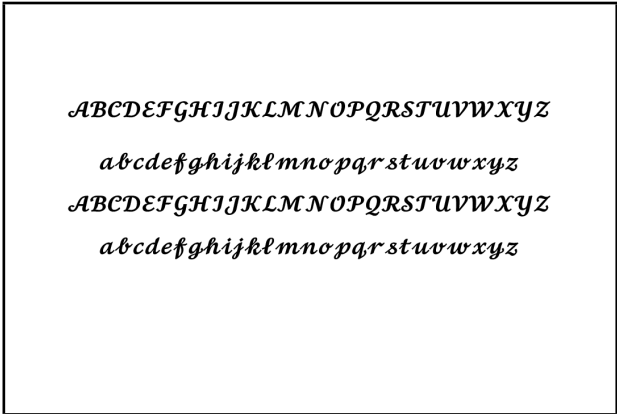
### 31 Test 016c

```
\input{umtest-preamble}  
\usepackage{unicode-math}  
\setmathfont{Asana Math}  
\begin{document}  
\[\LATINmathtt\]  
\[\latinmathtt\]  
\end{document}
```



### 32 Test 017a

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



### 33 Test 017b

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

*ABCDEFGHIJKLMNOPQRSTUVWXYZ*  
*abcdefghijklmnopqrstuvwxyz*

### 34 Test 017c

```
\input{umtest-preamble}  
\usepackage{unicode-math}  
\setmathfont{Cambria Math}  
\begin{document}  
\[\mathbf{\frac{\backslash\mathrm{text}}{\backslash\mathrm{text}}}\]  
\[\mathbf{\frac{\backslash\mathrm{text}}{\backslash\mathrm{text}}}\]  
\[\mathbf{\frac{\backslash\mathrm{math}}{\backslash\mathrm{math}}}\]  
\[\mathbf{\frac{\backslash\mathrm{math}}{\backslash\mathrm{math}}}\]  
\end{document}
```

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

### 35 Test 017d

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

*ABCDEFGHIJKLMNOPQRSTUVWXYZ*  
*abcdefghijklmnopqrstuvwxyz*

### 36 Test 018a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\mathbfup{\LATINtext}\]
\[\mathbfup{\latintext}\]
\[\mathbfup{\LATINmath}\]
\[\mathbfup{\latinmath}\]
\[\mathbfup{0123456789}\]
\end{document}
```

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz  
ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz  
0123456789

### 37 Test 018b

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

ΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
αβγδεζηθικλμνξοπρρςστυφφχψω  
ΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩ  
αβγδεζηθικλμνξοπρρςστυφφχψω

### 38 Test 019a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\mathbfit{\LATINtext}\]
\[\mathbfit{\latintext}\]
\[\mathbfit{\LATINmath}\]
\[\mathbfit{\latinmath}\]
\[\mathbfit{0123456789}\]
\end{document}
```

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz  
ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz  
0123456789

## 39 Test 019b

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

**ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ**  
*αβγδεεζηθθικκλμνξοπωρρςστυφφχψω*  
**ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ**  
*αβγδεεζηθθικκλμνξοπωρρςστυφφχψω*

## 40 Test 020a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\mathbf{\text{LATINtext}}\]
\[\mathbf{\text{latintext}}\]
\[\mathbf{\text{LATINmath}}\]
\[\mathbf{\text{latinmath}}\]
\[\mathbf{0123456789}\]
\end{document}
```

**ΑΒCDEFΓHΙJΚLΜNOPQΡSTUVWXYΖ**  
*abcde fghijklmnopqrstu vwx yz*  
**ΑΒCDEFΓHΙJΚLΜNOPQΡSTUVWXYΖ**  
*abcde fghijklmnopqrstu vwx yz*  
**0123456789**

## 41 Test 020b

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{STIXGeneral-Bold}
\begin{document}
\[\mathbf{\text{GREEKtext}}\]
\[\mathbf{\text{greektext}}\]
\[\mathbf{\text{GREEKmath}}\]
\[\mathbf{\text{greekmath}}\]
\end{document}
```

**ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ**  
*αβγδεεζηθθικκλμνξοπωρρςστυφφχψω*  
**ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ**  
*αβγδεεζηθθικκλμνξοπωρρςστυφφχψω*

## 42 Test 021a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\mathbfsfit{\LATINtext}\]
\[\mathbfsfit{\latintext}\]
\[\mathbfsfit{\LATINmath}\]
\[\mathbfsfit{\latinmath}\]
\[\mathbfsfit{0123456789}\]
\end{document}
```

**ABCDEFGHIJKLMNOPQRSTUVWXYZ**  
*abcdefghijklmnopqrstuvwxyz*  
**ABCDEFGHIJKLMNOPQRSTUVWXYZ**  
*abcdefghijklmnopqrstuvwxyz*  
**0123456789**

## 43 Test 021b

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{STIXGeneral-BoldItalic}
\begin{document}
\[\mathbfsfit{\GREEKtext}\]
\[\mathbfsfit{\greektext}\]
\[\mathbfsfit{\GREEKmath}\]
\[\mathbfsfit{\greekmath}\]
\end{document}
```

**ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ**  
*αβγδεεζηθδικκλμνξοπρρςστυφφχψω*  
**ΑΒΓΔΕΖΗΘΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ**  
*αβγδεεζηθδικκλμνξοπρρςστυφφχψω*




## 44 Test 030a



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



$\mathbb{N}$   
 $\mathbb{N}$   
 $\mathbb{N}$   
 $\mathbb{N}$



## 45 Test 031a

```
\input{umtest-preamble}
\usepackage[nabla=upright]{unicode-math}
\setmathfont{Free Serif}
\begin{document}
\[\quad\quad\quad]
\[\mathup{\quad}\quad\mathit{\quad}]
\[\mathbfup{\quad}\quad\mathbfit{\quad}]
\[\mathbfsfup{\quad}\quad\mathbfsf{\quad}]
\end{document}
```



















## 46 Test 031b

```
\input{umtest-preamble}
\usepackage[nabla=italic]{unicode-math}
\setmathfont{Free Serif}
\begin{document}
\[\quad\quad\quad]
\[\mathup{\quad}\quad\mathit{\quad}]
\[\mathbfup{\quad}\quad\mathbfit{\quad}]
\[\mathbfsfup{\quad}\quad\mathbfsf{\quad}]
\end{document}
```

## 47 Test 032a

```
\input{umtest-preamble}
\usepackage[partial=upright]{unicode-math}
\setmathfont{Asana Math}
\begin{document}
\[\partial \quad \partial \quad \partial \backslash]
\[\mathup{\partial} \quad \quad \mathit{\partial} \backslash]
\[\mathbfup{\partial} \quad \quad \mathbfit{\partial} \backslash]
\[\mathbfsfup{\partial} \quad \quad \mathbfsf it{\partial} \backslash]
\end{document}
```

$\partial\partial$     $\partial\partial$     $\partial\partial$   
 $\partial\partial$     $\partial\partial$   
 $\partial\partial$     $\partial\partial$   
 $\partial\partial$     $\partial\partial$



# Test 032b

```
\input{umtest-preamble}
\usepackage[partial=italic]{unicode-math}
\setmathfont{Asana Math}
\begin{document}
\[\partial \quad \partial \quad \partial\]
\[\mathup{\partial} \quad \quad \mathit{\partial}\]
\[\mathbfup{\partial} \quad \quad \mathbf{fit{\partial}}\]
\[\mathbfsfup{\partial} \quad \quad \mathbfsf{fit{\partial}}\]
\end{document}
```

$\partial\partial$     $\partial\partial$     $\partial\partial$   
 $\partial\partial$     $\partial\partial$   
 $\partial\partial$     $\partial\partial$   
 $\partial\partial$     $\partial\partial$

## Test 100a

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

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

## Test 100b

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

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

## 51 Test 100c

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

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

## 52 Test 100d

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

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

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

## 53 Test 100e

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

[illegible]

[illegible]

## 54 Test 101a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\ a>b \quad c<d \]
\[\ \left< \left< \left< \left< x \right>^2 \right>^2 \right>^2 \right>^2 \]
\end{document}
```

$$a > b \quad c < d$$

$$\left\langle \left\langle \left\langle x^2 \right\rangle^2 \right\rangle^2 \right\rangle^2$$

## 55 Test 102a

```
\input{umtest-preamble}
\usepackage[slash-delimiter=frac]{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\ \left.\left.\left[\begin{array}{cc} a & b \\ c & d \end{array}\right]\right/\left[\begin{array}{cc} 1 & 1 \\ 1 & 0 \end{array}\right]\right.\]
\end{document}
```

$$\left[\begin{array}{cc} a & b \\ c & d \end{array}\right] / \left[\begin{array}{cc} 1 & 1 \\ 1 & 0 \end{array}\right]$$

## 56 Test 150a

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

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

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

## 57 Test 151a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[ \hat i \quad \hat x \quad \hat M \quad \hat N ]
\[ \widehat i \quad \widehat x \quad \widehat M \quad \widehat N ]
\[ \tilde i \quad \tilde x \quad \tilde M \quad \tilde N ]
\[ \widetilde i \quad \widetilde x \quad \widetilde M \quad \widetilde N ]
\end{document}
```

$\hat{i}$	$\hat{x}$	$\hat{M}$	$\widehat{x+y}$
$\hat{i}$	$\hat{x}$	$\hat{M}$	$\widehat{x+y}$
$\tilde{i}$	$\tilde{x}$	$\tilde{M}$	$\widetilde{x+y}$
$\tilde{i}$	$\tilde{x}$	$\tilde{M}$	$\widetilde{x+y}$

## 58 Test 200a

```
\input{umtest-preamble}
\usepackage{amsmath,unicode-math}
\setmathfont{Cambria Math}
\begin{document}
  [${x\prime\prime\prime}$]
  [${x\prime\prime\prime\prime\prime\prime}$]
  [${x'}$]
  [${x'''}$]
  [${x''''''}$]
  [${x\frac{1}{2}}$]
  [${x\frac{1}{2}\frac{1}{2}}$]
  [${x\frac{1}{2}'\prime\prime}$]
\end{document}
```

$$[x'''] [x'''''] [x'] [x'''] [x'''''] [x'] [x'''] [x''''']$$

## 59 Test 201a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[ \sqrt{\sin^2 x + \cos^2 x} = 1 \quad \backslash
\[ \sqrt{1 + \sqrt{1 + \sqrt{1 + \sqrt{1 + x}}}} \backslash
\end{document}
```

$$\sqrt{\sin^2 x + \cos^2 x} = 1$$

$$\sqrt{1 + \sqrt{1 + \sqrt{1 + \sqrt{1 + x}}}}$$

## 60 Test 202a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[a\colon b\qqquad a: b
\qqquad a^{^^^2236} b\]
\end{document}
```

$$a\colon b \quad a: b \quad a: b$$

## 61 Test 202b

```
\input{umtest-preamble}
\usepackage[colon=literal]{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[a\colon b\qqquad a: b
\qqquad a^{^^^2236} b\]
\end{document}
```

$$a\colon b \quad a: b \quad a: b$$

## 62 Test 203a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[a-b\]
\[a\minus b\]
\end{document}
```

$$a - b$$

$$a - b$$

## 63 Test 204a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\setlength\parskip{12pt}
\begin{document}
 $X_{012}$   $X_{123}$   $X_{234}$   $X_{345}$   $X_{456}$   $X_{567}$   $X_{678}$   $X_{789}$   $X_{89+}$ 

 $X_{9+-}$   $X_{+-}$   $(X_{-}(=$   $X_{(=)}$   $X_{=)a}$   $X_{)ae}$   $X_{aeo}$   $X_{eox}$   $X_{ox0}$   $X_{x01}$ 

 $X^{0i+}n2$   $X^{i+}n2$   $X^{n2}$   $X^{2i+}n$ 

 $X_{34}^{2i+}n$ 

 $X_{34}^{2i+}n$ 

 $X_{34}^{2i+}n$ 

\end{document}
```

$X_{012}$   $X_{123}$   $X_{234}$   $X_{345}$   $X_{456}$   $X_{567}$   $X_{678}$   $X_{789}$   $X_{89+}$

$X_{9+-}$   $X_{+-}$   $(X_{-}(=$   $X_{(=)}$   $X_{=)a}$   $X_{)ae}$   $X_{aeo}$   $X_{eox}$   $X_{ox0}$   $X_{x01}$

$X^{0i+}n2$   $X^{i+}n2$   $X^{n2}$   $X^{2i+}n$

$X_{34}^{2i+}n$

## 64 Test 205a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont{Cambria Math}
\begin{document}
\[\iiint_V\]
\removenolimits\iiint
\[\iiint_V\]
\addnolimits\iiint
\[\iiint_V\]
\end{document}
```

$$\iiint_V$$

$$\iiint_V$$

$$\iiint_V$$

## 65 Test 500a

```
\input{umtest-preamble}
\usepackage{unicode-math}
\setmathfont[Colour=000000]{Cambria Math}
\setmathfont[range={\mathop}, Colour=FF0000]{Cambria Math}
\setmathfont[range={\equal}, Colour=009900]{Cambria Math}
\setmathfont[range={\mathopen,\mathclose},
Colour=0000FF]{Cambria Math}
\setlength\parskip{12pt}
\begin{document}
\[
F(s)=\mathscr{L}\left\{f(t)\right\}=
\int_0^\infty\mathop{e}\nolimits^{-st}f(t)\,\mathop{d}t
\]
\end{document}
```

$$F(s) = \mathscr{L}\{f(t)\} = \int_0^\infty e^{-st} f(t) dt$$