

Alphabetic maths font mappings

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1 What is this?

This is an attempt to access maths characters in X_ET_EX conveniently. As it stands, process this file or `maths-font-mappings.ins` with `xelatex` or equivalent to obtain a whole bunch of X_ET_EX font mappings that convert ASCII input to various ranges in the mathematical part of Unicode Plane 1. They need to be processed with `teckit_compile` before they can be used, for which a shell script is provided.

2 Covered ranges and future work

For now, only Latin characters [a-zA-Z] and arabic numbers [0-9] are covered. There are no italic numbers; italic mappings correspond to their upright numbers in an equivalent style, if possible. I'll probably add Greek letters [alpha-omega, etc.] at a later date. Mappings are provided for

- italic
- bold
- italic-bold
- script
- script-bold
- blackboard
- fraktur
- fraktur-bold
- sans
- sans-bold
- sans-italic
- sans-italic-bold

- typewriter

Luckily, X_ET_EX allows more than 16 maths families, or we'd be mighty squeezed for space.

3 Testing

abc def ghi jkl mno pqr stu vw xyz
ABC DEF GHI JKL MNO PQR STU VW XYZ
 1234567890

abc def ghi jkl mno pqr stu vw xyz
ABC DEF GHI JKL MNO PQR STU VW XYZ
1234567890

abc def ghi jkl mno pqr stu vw xyz
ABC DEF GHI JKL MNO PQR STU VW XYZ
 1234567890

abc def ghi jkl mno pqr stu vw xyz
ABC DEF GHI JKL MNO PQR STU VW XYZ
 1234567890

abc def ghi jkl mno pqr stu vw xyz
ABC DEF GHI JKL MNO PQR STU VW XYZ
 1234567890

abc def ghi jkl mno pqr stu vw xyz
ABC DEF GHI JKL MNO PQR STU VW XYZ
 1234567890

abc def ghi jkl mno pqr stu vw xyz
ABC DEF GHI JKL MNO PQR STU VW XYZ
 1234567890

abc def ghi jkl mno pqr stu vw xyz
ABC DEF GHI JKL MNO PQR STU VW XYZ
 1234567890

abc def ghi jkl mno pqr stu vw xyz
ABC DEF GHI JKL MNO PQR STU VW XYZ
 1234567890

abc def ghi jkl mno pqr stu vw xyz
ABC DEF GHI JKL MNO PQR STU VW XYZ
 1234567890

abc def ghi jkl mno pqr stu vw xyz
ABC DEF GHI JKL MNO PQR STU VW XYZ
 1234567890

abc def ghi jkl mno pqr stu vw xyz
ABC DEF GHI JKL MNO PQR STU VW XYZ
 1234567890

000 000 000 000 000 000 000 000
000 000 000 000 000 000 000 000
1234567890

File I

Example

```
1 \documentclass[12pt]{article}
2 \usepackage{fontspec}
3 \setromanfont{Cambria Math}
4 \setlength\parindent{0pt}
5 \setlength\parskip{1ex}
6 \newcommand\test[1]{%
7   \addfontfeature{#1}
8   abc def ghi jkl mno pqr stu vw xyz\\
9   ABC DEF GHI JKL MNO PQR STU VW XYZ\\
10  1234567890\par}
11 \begin{document}
12 \test{Mapping = ascii-maths-italic}
13 \test{Mapping = ascii-maths-bold}
14 \test{Mapping = ascii-maths-italic-bold}
15 \test{Mapping = ascii-maths-script}
16 \test{Mapping = ascii-maths-script-bold}
17 \test{Mapping = ascii-maths-blackboard}
18 \test{Mapping = ascii-maths-fraktur}
19 \test{Mapping = ascii-maths-fraktur-bold}
20 \test{Mapping = ascii-maths-sans}
21 \test{Mapping = ascii-maths-sans-bold}
22 \test{Mapping = ascii-maths-sans-italic}
23 \test{Mapping = ascii-maths-sans-italic-bold}
24 \test{Mapping = ascii-maths-typewriter}
25 \end{document}
```

4 The font mappings

4.1 Mapping compilation shell script

Run the following shell script `sh maths-map.sh` to compile the following font mappings definitions to their binary (useable) form.

```
26 teckit_compile ascii-maths-italic
27 teckit_compile ascii-maths-bold
28 teckit_compile ascii-maths-italic-bold
29 teckit_compile ascii-maths-script
30 teckit_compile ascii-maths-script-bold
31 teckit_compile ascii-maths-blackboard
32 teckit_compile ascii-maths-fraktur
33 teckit_compile ascii-maths-fraktur-bold
34 teckit_compile ascii-maths-sans
35 teckit_compile ascii-maths-sans-bold
36 teckit_compile ascii-maths-sans-italic
37 teckit_compile ascii-maths-sans-bold-italic
38 teckit_compile ascii-maths-typewriter
```

4.2 The font mappings

Note that various characters had to be omitted, due to those characters being reserved, for whatever reason, in Unicode.

Italic/\it(regular variables)

```
39 LHSName "ascii"
40 RHSName "unicode-italic-maths"
41
42 pass(Unicode)
43
44 latin_small_letter_a <-> mathematical_italic_small_a
45 latin_small_letter_b <-> mathematical_italic_small_b
46 latin_small_letter_c <-> mathematical_italic_small_c
47 latin_small_letter_d <-> mathematical_italic_small_d
48 latin_small_letter_e <-> mathematical_italic_small_e
49 latin_small_letter_f <-> mathematical_italic_small_f
50 latin_small_letter_g <-> mathematical_italic_small_g
51
52 ; latin_small_letter_h <-> mathematical_italic_small_h
53 latin_small_letter_h <-> planck_constant
54
55 latin_small_letter_i <-> mathematical_italic_small_i
56 latin_small_letter_j <-> mathematical_italic_small_j
57 latin_small_letter_k <-> mathematical_italic_small_k
58 latin_small_letter_l <-> mathematical_italic_small_l
59 latin_small_letter_m <-> mathematical_italic_small_m
60 latin_small_letter_n <-> mathematical_italic_small_n
61 latin_small_letter_o <-> mathematical_italic_small_o
62 latin_small_letter_p <-> mathematical_italic_small_p
63 latin_small_letter_q <-> mathematical_italic_small_q
64 latin_small_letter_r <-> mathematical_italic_small_r
65 latin_small_letter_s <-> mathematical_italic_small_s
66 latin_small_letter_t <-> mathematical_italic_small_t
67 latin_small_letter_u <-> mathematical_italic_small_u
68 latin_small_letter_v <-> mathematical_italic_small_v
69 latin_small_letter_w <-> mathematical_italic_small_w
70 latin_small_letter_x <-> mathematical_italic_small_x
71 latin_small_letter_y <-> mathematical_italic_small_y
72 latin_small_letter_z <-> mathematical_italic_small_z
73
74 latin_capital_letter_a <-> mathematical_italic_capital_a
75 latin_capital_letter_b <-> mathematical_italic_capital_b
76 latin_capital_letter_c <-> mathematical_italic_capital_c
77 latin_capital_letter_d <-> mathematical_italic_capital_d
78 latin_capital_letter_e <-> mathematical_italic_capital_e
79 latin_capital_letter_f <-> mathematical_italic_capital_f
80 latin_capital_letter_g <-> mathematical_italic_capital_g
81 latin_capital_letter_h <-> mathematical_italic_capital_h
82 latin_capital_letter_i <-> mathematical_italic_capital_i
83 latin_capital_letter_j <-> mathematical_italic_capital_j
```

```

84 latin_capital_letter_k <> mathematical_italic_capital_k
85 latin_capital_letter_l <> mathematical_italic_capital_l
86 latin_capital_letter_m <> mathematical_italic_capital_m
87 latin_capital_letter_n <> mathematical_italic_capital_n
88 latin_capital_letter_o <> mathematical_italic_capital_o
89 latin_capital_letter_p <> mathematical_italic_capital_p
90 latin_capital_letter_q <> mathematical_italic_capital_q
91 latin_capital_letter_r <> mathematical_italic_capital_r
92 latin_capital_letter_s <> mathematical_italic_capital_s
93 latin_capital_letter_t <> mathematical_italic_capital_t
94 latin_capital_letter_u <> mathematical_italic_capital_u
95 latin_capital_letter_v <> mathematical_italic_capital_v
96 latin_capital_letter_w <> mathematical_italic_capital_w
97 latin_capital_letter_x <> mathematical_italic_capital_x
98 latin_capital_letter_y <> mathematical_italic_capital_y
99 latin_capital_letter_z <> mathematical_italic_capital_z

```

Bold/\bf

```

100 LHSName "ascii"
101 RHSName "unicode-bold-maths"
102
103 pass(Unicode)
104
105 latin_small_letter_a <> mathematical_bold_small_a
106 latin_small_letter_b <> mathematical_bold_small_b
107 latin_small_letter_c <> mathematical_bold_small_c
108 latin_small_letter_d <> mathematical_bold_small_d
109 latin_small_letter_e <> mathematical_bold_small_e
110 latin_small_letter_f <> mathematical_bold_small_f
111 latin_small_letter_g <> mathematical_bold_small_g
112 latin_small_letter_h <> mathematical_bold_small_h
113 latin_small_letter_i <> mathematical_bold_small_i
114 latin_small_letter_j <> mathematical_bold_small_j
115 latin_small_letter_k <> mathematical_bold_small_k
116 latin_small_letter_l <> mathematical_bold_small_l
117 latin_small_letter_m <> mathematical_bold_small_m
118 latin_small_letter_n <> mathematical_bold_small_n
119 latin_small_letter_o <> mathematical_bold_small_o
120 latin_small_letter_p <> mathematical_bold_small_p
121 latin_small_letter_q <> mathematical_bold_small_q
122 latin_small_letter_r <> mathematical_bold_small_r
123 latin_small_letter_s <> mathematical_bold_small_s
124 latin_small_letter_t <> mathematical_bold_small_t
125 latin_small_letter_u <> mathematical_bold_small_u
126 latin_small_letter_v <> mathematical_bold_small_v
127 latin_small_letter_w <> mathematical_bold_small_w
128 latin_small_letter_x <> mathematical_bold_small_x
129 latin_small_letter_y <> mathematical_bold_small_y
130 latin_small_letter_z <> mathematical_bold_small_z
131
132 latin_capital_letter_a <> mathematical_bold_capital_a

```

```

133 latin_capital_letter_b <> mathematical_bold_capital_b
134 latin_capital_letter_c <> mathematical_bold_capital_c
135 latin_capital_letter_d <> mathematical_bold_capital_d
136 latin_capital_letter_e <> mathematical_bold_capital_e
137 latin_capital_letter_f <> mathematical_bold_capital_f
138 latin_capital_letter_g <> mathematical_bold_capital_g
139 latin_capital_letter_h <> mathematical_bold_capital_h
140 latin_capital_letter_i <> mathematical_bold_capital_i
141 latin_capital_letter_j <> mathematical_bold_capital_j
142 latin_capital_letter_k <> mathematical_bold_capital_k
143 latin_capital_letter_l <> mathematical_bold_capital_l
144 latin_capital_letter_m <> mathematical_bold_capital_m
145 latin_capital_letter_n <> mathematical_bold_capital_n
146 latin_capital_letter_o <> mathematical_bold_capital_o
147 latin_capital_letter_p <> mathematical_bold_capital_p
148 latin_capital_letter_q <> mathematical_bold_capital_q
149 latin_capital_letter_r <> mathematical_bold_capital_r
150 latin_capital_letter_s <> mathematical_bold_capital_s
151 latin_capital_letter_t <> mathematical_bold_capital_t
152 latin_capital_letter_u <> mathematical_bold_capital_u
153 latin_capital_letter_v <> mathematical_bold_capital_v
154 latin_capital_letter_w <> mathematical_bold_capital_w
155 latin_capital_letter_x <> mathematical_bold_capital_x
156 latin_capital_letter_y <> mathematical_bold_capital_y
157 latin_capital_letter_z <> mathematical_bold_capital_z
158
159 digit_one <> mathematical_bold_digit_one
160 digit_two <> mathematical_bold_digit_two
161 digit_three <> mathematical_bold_digit_three
162 digit_four <> mathematical_bold_digit_four
163 digit_five <> mathematical_bold_digit_five
164 digit_six <> mathematical_bold_digit_six
165 digit_seven <> mathematical_bold_digit_seven
166 digit_eight <> mathematical_bold_digit_eight
167 digit_nine <> mathematical_bold_digit_nine
168 digit_zero <> mathematical_bold_digit_zero

```

Bold Italic/\bfit

```

169 LHSName "ascii"
170 RHSName "unicode-bold-italic-maths"
171
172 pass(Unicode)
173
174 latin_small_letter_a <> mathematical_bold_italic_small_a
175 latin_small_letter_b <> mathematical_bold_italic_small_b
176 latin_small_letter_c <> mathematical_bold_italic_small_c
177 latin_small_letter_d <> mathematical_bold_italic_small_d
178 latin_small_letter_e <> mathematical_bold_italic_small_e
179 latin_small_letter_f <> mathematical_bold_italic_small_f
180 latin_small_letter_g <> mathematical_bold_italic_small_g
181 latin_small_letter_h <> mathematical_bold_italic_small_h

```

```

182 latin_small_letter_i <-> mathematical_bold_italic_small_i
183 latin_small_letter_j <-> mathematical_bold_italic_small_j
184 latin_small_letter_k <-> mathematical_bold_italic_small_k
185 latin_small_letter_l <-> mathematical_bold_italic_small_l
186 latin_small_letter_m <-> mathematical_bold_italic_small_m
187 latin_small_letter_n <-> mathematical_bold_italic_small_n
188 latin_small_letter_o <-> mathematical_bold_italic_small_o
189 latin_small_letter_p <-> mathematical_bold_italic_small_p
190 latin_small_letter_q <-> mathematical_bold_italic_small_q
191 latin_small_letter_r <-> mathematical_bold_italic_small_r
192 latin_small_letter_s <-> mathematical_bold_italic_small_s
193 latin_small_letter_t <-> mathematical_bold_italic_small_t
194 latin_small_letter_u <-> mathematical_bold_italic_small_u
195 latin_small_letter_v <-> mathematical_bold_italic_small_v
196 latin_small_letter_w <-> mathematical_bold_italic_small_w
197 latin_small_letter_x <-> mathematical_bold_italic_small_x
198 latin_small_letter_y <-> mathematical_bold_italic_small_y
199 latin_small_letter_z <-> mathematical_bold_italic_small_z
200
201 latin_capital_letter_a <-> mathematical_bold_italic_capital_a
202 latin_capital_letter_b <-> mathematical_bold_italic_capital_b
203 latin_capital_letter_c <-> mathematical_bold_italic_capital_c
204 latin_capital_letter_d <-> mathematical_bold_italic_capital_d
205 latin_capital_letter_e <-> mathematical_bold_italic_capital_e
206 latin_capital_letter_f <-> mathematical_bold_italic_capital_f
207 latin_capital_letter_g <-> mathematical_bold_italic_capital_g
208 latin_capital_letter_h <-> mathematical_bold_italic_capital_h
209 latin_capital_letter_i <-> mathematical_bold_italic_capital_i
210 latin_capital_letter_j <-> mathematical_bold_italic_capital_j
211 latin_capital_letter_k <-> mathematical_bold_italic_capital_k
212 latin_capital_letter_l <-> mathematical_bold_italic_capital_l
213 latin_capital_letter_m <-> mathematical_bold_italic_capital_m
214 latin_capital_letter_n <-> mathematical_bold_italic_capital_n
215 latin_capital_letter_o <-> mathematical_bold_italic_capital_o
216 latin_capital_letter_p <-> mathematical_bold_italic_capital_p
217 latin_capital_letter_q <-> mathematical_bold_italic_capital_q
218 latin_capital_letter_r <-> mathematical_bold_italic_capital_r
219 latin_capital_letter_s <-> mathematical_bold_italic_capital_s
220 latin_capital_letter_t <-> mathematical_bold_italic_capital_t
221 latin_capital_letter_u <-> mathematical_bold_italic_capital_u
222 latin_capital_letter_v <-> mathematical_bold_italic_capital_v
223 latin_capital_letter_w <-> mathematical_bold_italic_capital_w
224 latin_capital_letter_x <-> mathematical_bold_italic_capital_x
225 latin_capital_letter_y <-> mathematical_bold_italic_capital_y
226 latin_capital_letter_z <-> mathematical_bold_italic_capital_z
227
228 digit_one <-> mathematical_bold_digit_one
229 digit_two <-> mathematical_bold_digit_two
230 digit_three <-> mathematical_bold_digit_three
231 digit_four <-> mathematical_bold_digit_four
232 digit_five <-> mathematical_bold_digit_five

```

```

233 digit_six <math>\leftrightarrow</math> mathematical_bold_digit_six
234 digit_seven <math>\leftrightarrow</math> mathematical_bold_digit_seven
235 digit_eight <math>\leftrightarrow</math> mathematical_bold_digit_eight
236 digit_nine <math>\leftrightarrow</math> mathematical_bold_digit_nine
237 digit_zero <math>\leftrightarrow</math> mathematical_bold_digit_zero

Script\scr
238 LHSName "ascii"
239 RHSName "unicode-maths-script"
240
241 pass(Unicode)
242
243 latin_small_letter_a <math>\leftrightarrow</math> mathematical_script_small_a
244 latin_small_letter_b <math>\leftrightarrow</math> mathematical_script_small_b
245 latin_small_letter_c <math>\leftrightarrow</math> mathematical_script_small_c
246 latin_small_letter_d <math>\leftrightarrow</math> mathematical_script_small_d
247
248 ; latin_small_letter_e <math>\leftrightarrow</math> mathematical_script_small_e
249 latin_small_letter_e <math>\leftrightarrow</math> script_small_e
250
251 latin_small_letter_f <math>\leftrightarrow</math> mathematical_script_small_f
252
253 latin_small_letter_g <math>\leftrightarrow</math> script_small_g
254 ; latin_small_letter_g <math>\leftrightarrow</math> mathematical_script_small_g
255
256 latin_small_letter_h <math>\leftrightarrow</math> mathematical_script_small_h
257 latin_small_letter_i <math>\leftrightarrow</math> mathematical_script_small_i
258 latin_small_letter_j <math>\leftrightarrow</math> mathematical_script_small_j
259 latin_small_letter_k <math>\leftrightarrow</math> mathematical_script_small_k
260
261 ; latin_small_letter_l <math>\leftrightarrow</math> mathematical_script_small_l
262 latin_small_letter_l <math>\leftrightarrow</math> script_small_l
263
264 latin_small_letter_m <math>\leftrightarrow</math> mathematical_script_small_m
265 latin_small_letter_n <math>\leftrightarrow</math> mathematical_script_small_n
266
267 ; latin_small_letter_o <math>\leftrightarrow</math> mathematical_script_small_o
268 latin_small_letter_o <math>\leftrightarrow</math> script_small_o
269
270 latin_small_letter_p <math>\leftrightarrow</math> mathematical_script_small_p
271 latin_small_letter_q <math>\leftrightarrow</math> mathematical_script_small_q
272 latin_small_letter_r <math>\leftrightarrow</math> mathematical_script_small_r
273 latin_small_letter_s <math>\leftrightarrow</math> mathematical_script_small_s
274 latin_small_letter_t <math>\leftrightarrow</math> mathematical_script_small_t
275 latin_small_letter_u <math>\leftrightarrow</math> mathematical_script_small_u
276 latin_small_letter_v <math>\leftrightarrow</math> mathematical_script_small_v
277 latin_small_letter_w <math>\leftrightarrow</math> mathematical_script_small_w
278 latin_small_letter_x <math>\leftrightarrow</math> mathematical_script_small_x
279 latin_small_letter_y <math>\leftrightarrow</math> mathematical_script_small_y
280 latin_small_letter_z <math>\leftrightarrow</math> mathematical_script_small_z
281

```

```

282 latin_capital_letter_a <> mathematical_script_capital_a
283
284 ; latin_capital_letter_b <> mathematical_script_capital_b
285 latin_capital_letter_b <> script_capital_b
286
287 latin_capital_letter_c <> mathematical_script_capital_c
288 latin_capital_letter_d <> mathematical_script_capital_d
289
290 ; latin_capital_letter_e <> mathematical_script_capital_e
291 latin_capital_letter_e <> script_capital_e
292
293 ; latin_capital_letter_f <> mathematical_script_capital_f
294 latin_capital_letter_f <> script_capital_f
295
296 latin_capital_letter_g <> mathematical_script_capital_g
297
298 ; latin_capital_letter_h <> mathematical_script_capital_h
299 latin_capital_letter_h <> script_capital_h
300
301 ; latin_capital_letter_i <> mathematical_script_capital_i
302 latin_capital_letter_i <> script_capital_i
303
304 latin_capital_letter_j <> mathematical_script_capital_j
305 latin_capital_letter_k <> mathematical_script_capital_k
306
307 ; latin_capital_letter_l <> mathematical_script_capital_l
308 latin_capital_letter_l <> script_capital_l
309
310 ; latin_capital_letter_m <> mathematical_script_capital_m
311 latin_capital_letter_m <> script_capital_m
312
313 latin_capital_letter_n <> mathematical_script_capital_n
314 latin_capital_letter_o <> mathematical_script_capital_o
315
316 latin_capital_letter_p <> mathematical_script_capital_p
317 ; latin_capital_letter_p <> script_capital_p
318
319 latin_capital_letter_q <> mathematical_script_capital_q
320
321 ; latin_capital_letter_r <> mathematical_script_capital_r
322 latin_capital_letter_r <> script_capital_r
323
324 latin_capital_letter_s <> mathematical_script_capital_s
325 latin_capital_letter_t <> mathematical_script_capital_t
326 latin_capital_letter_u <> mathematical_script_capital_u
327 latin_capital_letter_v <> mathematical_script_capital_v
328 latin_capital_letter_w <> mathematical_script_capital_w
329 latin_capital_letter_x <> mathematical_script_capital_x
330 latin_capital_letter_y <> mathematical_script_capital_y
331 latin_capital_letter_z <> mathematical_script_capital_z

```

Script Bold/\bfscr

```
332 LHSName "ascii"
333 RHSName "unicode-maths-script-bold"
334
335 pass(Unicode)
336
337 latin_small_letter_a <> mathematical_bold_script_small_a
338 latin_small_letter_b <> mathematical_bold_script_small_b
339 latin_small_letter_c <> mathematical_bold_script_small_c
340 latin_small_letter_d <> mathematical_bold_script_small_d
341 latin_small_letter_e <> mathematical_bold_script_small_e
342 latin_small_letter_f <> mathematical_bold_script_small_f
343 latin_small_letter_g <> mathematical_bold_script_small_g
344 latin_small_letter_h <> mathematical_bold_script_small_h
345 latin_small_letter_i <> mathematical_bold_script_small_i
346 latin_small_letter_j <> mathematical_bold_script_small_j
347 latin_small_letter_k <> mathematical_bold_script_small_k
348 latin_small_letter_l <> mathematical_bold_script_small_l
349 latin_small_letter_m <> mathematical_bold_script_small_m
350 latin_small_letter_n <> mathematical_bold_script_small_n
351 latin_small_letter_o <> mathematical_bold_script_small_o
352 latin_small_letter_p <> mathematical_bold_script_small_p
353 latin_small_letter_q <> mathematical_bold_script_small_q
354 latin_small_letter_r <> mathematical_bold_script_small_r
355 latin_small_letter_s <> mathematical_bold_script_small_s
356 latin_small_letter_t <> mathematical_bold_script_small_t
357 latin_small_letter_u <> mathematical_bold_script_small_u
358 latin_small_letter_v <> mathematical_bold_script_small_v
359 latin_small_letter_w <> mathematical_bold_script_small_w
360 latin_small_letter_x <> mathematical_bold_script_small_x
361 latin_small_letter_y <> mathematical_bold_script_small_y
362 latin_small_letter_z <> mathematical_bold_script_small_z
363
364 latin_capital_letter_a <> mathematical_bold_script_capital_a
365 latin_capital_letter_b <> mathematical_bold_script_capital_b
366 latin_capital_letter_c <> mathematical_bold_script_capital_c
367 latin_capital_letter_d <> mathematical_bold_script_capital_d
368 latin_capital_letter_e <> mathematical_bold_script_capital_e
369 latin_capital_letter_f <> mathematical_bold_script_capital_f
370 latin_capital_letter_g <> mathematical_bold_script_capital_g
371 latin_capital_letter_h <> mathematical_bold_script_capital_h
372 latin_capital_letter_i <> mathematical_bold_script_capital_i
373 latin_capital_letter_j <> mathematical_bold_script_capital_j
374 latin_capital_letter_k <> mathematical_bold_script_capital_k
375 latin_capital_letter_l <> mathematical_bold_script_capital_l
376 latin_capital_letter_m <> mathematical_bold_script_capital_m
377 latin_capital_letter_n <> mathematical_bold_script_capital_n
378 latin_capital_letter_o <> mathematical_bold_script_capital_o
379 latin_capital_letter_p <> mathematical_bold_script_capital_p
380 latin_capital_letter_q <> mathematical_bold_script_capital_q
381 latin_capital_letter_r <> mathematical_bold_script_capital_r
```

```

382 latin_capital_letter_s <> mathematical_bold_script_capital_s
383 latin_capital_letter_t <> mathematical_bold_script_capital_t
384 latin_capital_letter_u <> mathematical_bold_script_capital_u
385 latin_capital_letter_v <> mathematical_bold_script_capital_v
386 latin_capital_letter_w <> mathematical_bold_script_capital_w
387 latin_capital_letter_x <> mathematical_bold_script_capital_x
388 latin_capital_letter_y <> mathematical_bold_script_capital_y
389 latin_capital_letter_z <> mathematical_bold_script_capital_z
390
391 digit_one <> mathematical_bold_digit_one
392 digit_two <> mathematical_bold_digit_two
393 digit_three <> mathematical_bold_digit_three
394 digit_four <> mathematical_bold_digit_four
395 digit_five <> mathematical_bold_digit_five
396 digit_six <> mathematical_bold_digit_six
397 digit_seven <> mathematical_bold_digit_seven
398 digit_eight <> mathematical_bold_digit_eight
399 digit_nine <> mathematical_bold_digit_nine
400 digit_zero <> mathematical_bold_digit_zero

```

Blackboard/\Bbb

```

401 LHSName "ascii"
402 RHSName "unicode-maths-blackboard"
403
404 pass(Unicode)
405
406 latin_small_letter_a <> mathematical_double_struck_small_a
407 latin_small_letter_b <> mathematical_double_struck_small_b
408 latin_small_letter_c <> mathematical_double_struck_small_c
409 latin_small_letter_d <> mathematical_double_struck_small_d
410 latin_small_letter_e <> mathematical_double_struck_small_e
411 latin_small_letter_f <> mathematical_double_struck_small_f
412 latin_small_letter_g <> mathematical_double_struck_small_g
413 latin_small_letter_h <> mathematical_double_struck_small_h
414 latin_small_letter_i <> mathematical_double_struck_small_i
415 latin_small_letter_j <> mathematical_double_struck_small_j
416 latin_small_letter_k <> mathematical_double_struck_small_k
417 latin_small_letter_l <> mathematical_double_struck_small_l
418 latin_small_letter_m <> mathematical_double_struck_small_m
419 latin_small_letter_n <> mathematical_double_struck_small_n
420 latin_small_letter_o <> mathematical_double_struck_small_o
421 latin_small_letter_p <> mathematical_double_struck_small_p
422 latin_small_letter_q <> mathematical_double_struck_small_q
423 latin_small_letter_r <> mathematical_double_struck_small_r
424 latin_small_letter_s <> mathematical_double_struck_small_s
425 latin_small_letter_t <> mathematical_double_struck_small_t
426 latin_small_letter_u <> mathematical_double_struck_small_u
427 latin_small_letter_v <> mathematical_double_struck_small_v
428 latin_small_letter_w <> mathematical_double_struck_small_w
429 latin_small_letter_x <> mathematical_double_struck_small_x
430 latin_small_letter_y <> mathematical_double_struck_small_y

```

```

431 latin_small_letter_z <> mathematical_double_struck_small_z
432
433 latin_capital_letter_a <> mathematical_double_struck_capital_a
434 latin_capital_letter_b <> mathematical_double_struck_capital_b
435
436 ; latin_capital_letter_c <> mathematical_double_struck_capital_c
437 latin_capital_letter_c <> double_struck_capital_c
438
439 latin_capital_letter_d <> mathematical_double_struck_capital_d
440 latin_capital_letter_e <> mathematical_double_struck_capital_e
441 latin_capital_letter_f <> mathematical_double_struck_capital_f
442 latin_capital_letter_g <> mathematical_double_struck_capital_g
443
444 ; latin_capital_letter_h <> mathematical_double_struck_capital_h
445 latin_capital_letter_h <> double_struck_capital_h
446
447 latin_capital_letter_i <> mathematical_double_struck_capital_i
448 latin_capital_letter_j <> mathematical_double_struck_capital_j
449 latin_capital_letter_k <> mathematical_double_struck_capital_k
450 latin_capital_letter_l <> mathematical_double_struck_capital_l
451 latin_capital_letter_m <> mathematical_double_struck_capital_m
452
453 ; latin_capital_letter_n <> mathematical_double_struck_capital_n
454 latin_capital_letter_n <> double_struck_capital_n
455
456 latin_capital_letter_o <> mathematical_double_struck_capital_o
457
458 ; latin_capital_letter_p <> mathematical_double_struck_capital_p
459 ; latin_capital_letter_q <> mathematical_double_struck_capital_q
460 ; latin_capital_letter_r <> mathematical_double_struck_capital_r
461 latin_capital_letter_p <> double_struck_capital_p
462 latin_capital_letter_q <> double_struck_capital_q
463 latin_capital_letter_r <> double_struck_capital_r
464
465 latin_capital_letter_s <> mathematical_double_struck_capital_s
466 latin_capital_letter_t <> mathematical_double_struck_capital_t
467 latin_capital_letter_u <> mathematical_double_struck_capital_u
468 latin_capital_letter_v <> mathematical_double_struck_capital_v
469 latin_capital_letter_w <> mathematical_double_struck_capital_w
470 latin_capital_letter_x <> mathematical_double_struck_capital_x
471 latin_capital_letter_y <> mathematical_double_struck_capital_y
472
473 ; latin_capital_letter_z <> mathematical_double_struck_capital_z
474 latin_capital_letter_z <> double_struck_capital_z
475
476 digit_one <> mathematical_double_struck_digit_one
477 digit_two <> mathematical_double_struck_digit_two
478 digit_three <> mathematical_double_struck_digit_three
479 digit_four <> mathematical_double_struck_digit_four
480 digit_five <> mathematical_double_struck_digit_five
481 digit_six <> mathematical_double_struck_digit_six

```

```

482 digit_seven <-> mathematical_double_struck_digit_seven
483 digit_eight <-> mathematical_double_struck_digit_eight
484 digit_nine <-> mathematical_double_struck_digit_nine
485 digit_zero <-> mathematical_double_struck_digit_zero

```

Fraktur/\frak

```

486 LHSName "ascii"
487 RHSName "unicode-maths-fraktur"
488
489 pass(Unicode)
490
491 latin_small_letter_a <-> mathematical_fraktur_small_a
492 latin_small_letter_b <-> mathematical_fraktur_small_b
493 latin_small_letter_c <-> mathematical_fraktur_small_c
494 latin_small_letter_d <-> mathematical_fraktur_small_d
495 latin_small_letter_e <-> mathematical_fraktur_small_e
496 latin_small_letter_f <-> mathematical_fraktur_small_f
497 latin_small_letter_g <-> mathematical_fraktur_small_g
498 latin_small_letter_h <-> mathematical_fraktur_small_h
499 latin_small_letter_i <-> mathematical_fraktur_small_i
500 latin_small_letter_j <-> mathematical_fraktur_small_j
501 latin_small_letter_k <-> mathematical_fraktur_small_k
502 latin_small_letter_l <-> mathematical_fraktur_small_l
503 latin_small_letter_m <-> mathematical_fraktur_small_m
504 latin_small_letter_n <-> mathematical_fraktur_small_n
505 latin_small_letter_o <-> mathematical_fraktur_small_o
506 latin_small_letter_p <-> mathematical_fraktur_small_p
507 latin_small_letter_q <-> mathematical_fraktur_small_q
508 latin_small_letter_r <-> mathematical_fraktur_small_r
509 latin_small_letter_s <-> mathematical_fraktur_small_s
510 latin_small_letter_t <-> mathematical_fraktur_small_t
511 latin_small_letter_u <-> mathematical_fraktur_small_u
512 latin_small_letter_v <-> mathematical_fraktur_small_v
513 latin_small_letter_w <-> mathematical_fraktur_small_w
514 latin_small_letter_x <-> mathematical_fraktur_small_x
515 latin_small_letter_y <-> mathematical_fraktur_small_y
516 latin_small_letter_z <-> mathematical_fraktur_small_z
517
518 latin_capital_letter_a <-> mathematical_fraktur_capital_a
519 latin_capital_letter_b <-> mathematical_fraktur_capital_b
520
521 ; latin_capital_letter_c <-> mathematical_fraktur_capital_c
522 latin_capital_letter_c <-> black_letter_capital_c
523
524 latin_capital_letter_d <-> mathematical_fraktur_capital_d
525 latin_capital_letter_e <-> mathematical_fraktur_capital_e
526 latin_capital_letter_f <-> mathematical_fraktur_capital_f
527 latin_capital_letter_g <-> mathematical_fraktur_capital_g
528
529 ; latin_capital_letter_h <-> mathematical_fraktur_capital_h
530 ; latin_capital_letter_i <-> mathematical_fraktur_capital_i

```

```

531 latin_capital_letter_h <-> black_letter_capital_h
532 latin_capital_letter_i <-> black_letter_capital_i
533
534 latin_capital_letter_j <-> mathematical_fraktur_capital_j
535 latin_capital_letter_k <-> mathematical_fraktur_capital_k
536 latin_capital_letter_l <-> mathematical_fraktur_capital_l
537 latin_capital_letter_m <-> mathematical_fraktur_capital_m
538 latin_capital_letter_n <-> mathematical_fraktur_capital_n
539 latin_capital_letter_o <-> mathematical_fraktur_capital_o
540 latin_capital_letter_p <-> mathematical_fraktur_capital_p
541 latin_capital_letter_q <-> mathematical_fraktur_capital_q
542
543 ; latin_capital_letter_r <-> mathematical_fraktur_capital_r
544 latin_capital_letter_r <-> black_letter_capital_r
545
546 latin_capital_letter_s <-> mathematical_fraktur_capital_s
547 latin_capital_letter_t <-> mathematical_fraktur_capital_t
548 latin_capital_letter_u <-> mathematical_fraktur_capital_u
549 latin_capital_letter_v <-> mathematical_fraktur_capital_v
550 latin_capital_letter_w <-> mathematical_fraktur_capital_w
551 latin_capital_letter_x <-> mathematical_fraktur_capital_x
552 latin_capital_letter_y <-> mathematical_fraktur_capital_y
553
554 ; latin_capital_letter_z <-> mathematical_fraktur_capital_z
555 latin_capital_letter_z <-> black_letter_capital_z

```

Fractur Bold/\bffrak

```

556 LHSName "ascii"
557 RHSName "unicode-maths-fraktur-bold"
558
559 pass(Unicode)
560
561 latin_small_letter_a <-> mathematical_bold_fraktur_small_a
562 latin_small_letter_b <-> mathematical_bold_fraktur_small_b
563 latin_small_letter_c <-> mathematical_bold_fraktur_small_c
564 latin_small_letter_d <-> mathematical_bold_fraktur_small_d
565 latin_small_letter_e <-> mathematical_bold_fraktur_small_e
566 latin_small_letter_f <-> mathematical_bold_fraktur_small_f
567 latin_small_letter_g <-> mathematical_bold_fraktur_small_g
568 latin_small_letter_h <-> mathematical_bold_fraktur_small_h
569 latin_small_letter_i <-> mathematical_bold_fraktur_small_i
570 latin_small_letter_j <-> mathematical_bold_fraktur_small_j
571 latin_small_letter_k <-> mathematical_bold_fraktur_small_k
572 latin_small_letter_l <-> mathematical_bold_fraktur_small_l
573 latin_small_letter_m <-> mathematical_bold_fraktur_small_m
574 latin_small_letter_n <-> mathematical_bold_fraktur_small_n
575 latin_small_letter_o <-> mathematical_bold_fraktur_small_o
576 latin_small_letter_p <-> mathematical_bold_fraktur_small_p
577 latin_small_letter_q <-> mathematical_bold_fraktur_small_q
578 latin_small_letter_r <-> mathematical_bold_fraktur_small_r
579 latin_small_letter_s <-> mathematical_bold_fraktur_small_s

```

```

580 latin_small_letter_t <> mathematical_bold_fraktur_small_t
581 latin_small_letter_u <> mathematical_bold_fraktur_small_u
582 latin_small_letter_v <> mathematical_bold_fraktur_small_v
583 latin_small_letter_w <> mathematical_bold_fraktur_small_w
584 latin_small_letter_x <> mathematical_bold_fraktur_small_x
585 latin_small_letter_y <> mathematical_bold_fraktur_small_y
586 latin_small_letter_z <> mathematical_bold_fraktur_small_z
587
588 latin_capital_letter_a <> mathematical_bold_fraktur_capital_a
589 latin_capital_letter_b <> mathematical_bold_fraktur_capital_b
590
591 latin_capital_letter_c <> mathematical_bold_fraktur_capital_c
592
593 latin_capital_letter_d <> mathematical_bold_fraktur_capital_d
594 latin_capital_letter_e <> mathematical_bold_fraktur_capital_e
595 latin_capital_letter_f <> mathematical_bold_fraktur_capital_f
596 latin_capital_letter_g <> mathematical_bold_fraktur_capital_g
597
598 latin_capital_letter_h <> mathematical_bold_fraktur_capital_h
599 latin_capital_letter_i <> mathematical_bold_fraktur_capital_i
600
601 latin_capital_letter_j <> mathematical_bold_fraktur_capital_j
602 latin_capital_letter_k <> mathematical_bold_fraktur_capital_k
603 latin_capital_letter_l <> mathematical_bold_fraktur_capital_l
604 latin_capital_letter_m <> mathematical_bold_fraktur_capital_m
605 latin_capital_letter_n <> mathematical_bold_fraktur_capital_n
606 latin_capital_letter_o <> mathematical_bold_fraktur_capital_o
607 latin_capital_letter_p <> mathematical_bold_fraktur_capital_p
608 latin_capital_letter_q <> mathematical_bold_fraktur_capital_q
609
610 latin_capital_letter_r <> mathematical_bold_fraktur_capital_r
611
612 latin_capital_letter_s <> mathematical_bold_fraktur_capital_s
613 latin_capital_letter_t <> mathematical_bold_fraktur_capital_t
614 latin_capital_letter_u <> mathematical_bold_fraktur_capital_u
615 latin_capital_letter_v <> mathematical_bold_fraktur_capital_v
616 latin_capital_letter_w <> mathematical_bold_fraktur_capital_w
617 latin_capital_letter_x <> mathematical_bold_fraktur_capital_x
618 latin_capital_letter_y <> mathematical_bold_fraktur_capital_y
619
620 latin_capital_letter_z <> mathematical_bold_fraktur_capital_z
621
622 digit_one <> mathematical_bold_digit_one
623 digit_two <> mathematical_bold_digit_two
624 digit_three <> mathematical_bold_digit_three
625 digit_four <> mathematical_bold_digit_four
626 digit_five <> mathematical_bold_digit_five
627 digit_six <> mathematical_bold_digit_six
628 digit_seven <> mathematical_bold_digit_seven
629 digit_eight <> mathematical_bold_digit_eight
630 digit_nine <> mathematical_bold_digit_nine

```

```

631 digit_zero <-> mathematical_bold_digit_zero

Sans/\sans

632 LHSName "ascii"
633 RHSName "unicode-maths-sans-serif"
634
635 pass(Unicode)
636
637 latin_small_letter_a <-> mathematical_sans_serif_small_a
638 latin_small_letter_b <-> mathematical_sans_serif_small_b
639 latin_small_letter_c <-> mathematical_sans_serif_small_c
640 latin_small_letter_d <-> mathematical_sans_serif_small_d
641 latin_small_letter_e <-> mathematical_sans_serif_small_e
642 latin_small_letter_f <-> mathematical_sans_serif_small_f
643 latin_small_letter_g <-> mathematical_sans_serif_small_g
644 latin_small_letter_h <-> mathematical_sans_serif_small_h
645 latin_small_letter_i <-> mathematical_sans_serif_small_i
646 latin_small_letter_j <-> mathematical_sans_serif_small_j
647 latin_small_letter_k <-> mathematical_sans_serif_small_k
648 latin_small_letter_l <-> mathematical_sans_serif_small_l
649 latin_small_letter_m <-> mathematical_sans_serif_small_m
650 latin_small_letter_n <-> mathematical_sans_serif_small_n
651 latin_small_letter_o <-> mathematical_sans_serif_small_o
652 latin_small_letter_p <-> mathematical_sans_serif_small_p
653 latin_small_letter_q <-> mathematical_sans_serif_small_q
654 latin_small_letter_r <-> mathematical_sans_serif_small_r
655 latin_small_letter_s <-> mathematical_sans_serif_small_s
656 latin_small_letter_t <-> mathematical_sans_serif_small_t
657 latin_small_letter_u <-> mathematical_sans_serif_small_u
658 latin_small_letter_v <-> mathematical_sans_serif_small_v
659 latin_small_letter_w <-> mathematical_sans_serif_small_w
660 latin_small_letter_x <-> mathematical_sans_serif_small_x
661 latin_small_letter_y <-> mathematical_sans_serif_small_y
662 latin_small_letter_z <-> mathematical_sans_serif_small_z
663
664 latin_capital_letter_a <-> mathematical_sans_serif_capital_a
665 latin_capital_letter_b <-> mathematical_sans_serif_capital_b
666 latin_capital_letter_c <-> mathematical_sans_serif_capital_c
667 latin_capital_letter_d <-> mathematical_sans_serif_capital_d
668 latin_capital_letter_e <-> mathematical_sans_serif_capital_e
669 latin_capital_letter_f <-> mathematical_sans_serif_capital_f
670 latin_capital_letter_g <-> mathematical_sans_serif_capital_g
671 latin_capital_letter_h <-> mathematical_sans_serif_capital_h
672 latin_capital_letter_i <-> mathematical_sans_serif_capital_i
673 latin_capital_letter_j <-> mathematical_sans_serif_capital_j
674 latin_capital_letter_k <-> mathematical_sans_serif_capital_k
675 latin_capital_letter_l <-> mathematical_sans_serif_capital_l
676 latin_capital_letter_m <-> mathematical_sans_serif_capital_m
677 latin_capital_letter_n <-> mathematical_sans_serif_capital_n
678 latin_capital_letter_o <-> mathematical_sans_serif_capital_o
679 latin_capital_letter_p <-> mathematical_sans_serif_capital_p

```

```

680 latin_capital_letter_q <-> mathematical_sans_serif_capital_q
681 latin_capital_letter_r <-> mathematical_sans_serif_capital_r
682 latin_capital_letter_s <-> mathematical_sans_serif_capital_s
683 latin_capital_letter_t <-> mathematical_sans_serif_capital_t
684 latin_capital_letter_u <-> mathematical_sans_serif_capital_u
685 latin_capital_letter_v <-> mathematical_sans_serif_capital_v
686 latin_capital_letter_w <-> mathematical_sans_serif_capital_w
687 latin_capital_letter_x <-> mathematical_sans_serif_capital_x
688 latin_capital_letter_y <-> mathematical_sans_serif_capital_y
689 latin_capital_letter_z <-> mathematical_sans_serif_capital_z
690
691 digit_one <-> mathematical_sans_serif_digit_one
692 digit_two <-> mathematical_sans_serif_digit_two
693 digit_three <-> mathematical_sans_serif_digit_three
694 digit_four <-> mathematical_sans_serif_digit_four
695 digit_five <-> mathematical_sans_serif_digit_five
696 digit_six <-> mathematical_sans_serif_digit_six
697 digit_seven <-> mathematical_sans_serif_digit_seven
698 digit_eight <-> mathematical_sans_serif_digit_eight
699 digit_nine <-> mathematical_sans_serif_digit_nine
700 digit_zero <-> mathematical_sans_serif_digit_zero

```

Sans Bold/\bfsans

```

701 LHSName "ascii"
702 RHSName "unicode-maths-sans-bold"
703
704 pass(Unicode)
705
706 latin_small_letter_a <-> mathematical_sans_serif_bold_small_a
707 latin_small_letter_b <-> mathematical_sans_serif_bold_small_b
708 latin_small_letter_c <-> mathematical_sans_serif_bold_small_c
709 latin_small_letter_d <-> mathematical_sans_serif_bold_small_d
710 latin_small_letter_e <-> mathematical_sans_serif_bold_small_e
711 latin_small_letter_f <-> mathematical_sans_serif_bold_small_f
712 latin_small_letter_g <-> mathematical_sans_serif_bold_small_g
713 latin_small_letter_h <-> mathematical_sans_serif_bold_small_h
714 latin_small_letter_i <-> mathematical_sans_serif_bold_small_i
715 latin_small_letter_j <-> mathematical_sans_serif_bold_small_j
716 latin_small_letter_k <-> mathematical_sans_serif_bold_small_k
717 latin_small_letter_l <-> mathematical_sans_serif_bold_small_l
718 latin_small_letter_m <-> mathematical_sans_serif_bold_small_m
719 latin_small_letter_n <-> mathematical_sans_serif_bold_small_n
720 latin_small_letter_o <-> mathematical_sans_serif_bold_small_o
721 latin_small_letter_p <-> mathematical_sans_serif_bold_small_p
722 latin_small_letter_q <-> mathematical_sans_serif_bold_small_q
723 latin_small_letter_r <-> mathematical_sans_serif_bold_small_r
724 latin_small_letter_s <-> mathematical_sans_serif_bold_small_s
725 latin_small_letter_t <-> mathematical_sans_serif_bold_small_t
726 latin_small_letter_u <-> mathematical_sans_serif_bold_small_u
727 latin_small_letter_v <-> mathematical_sans_serif_bold_small_v
728 latin_small_letter_w <-> mathematical_sans_serif_bold_small_w

```

```

729 latin_small_letter_x <-> mathematical_sans_serif_bold_small_x
730 latin_small_letter_y <-> mathematical_sans_serif_bold_small_y
731 latin_small_letter_z <-> mathematical_sans_serif_bold_small_z
732
733 latin_capital_letter_a <-> mathematical_sans_serif_bold_capital_a
734 latin_capital_letter_b <-> mathematical_sans_serif_bold_capital_b
735 latin_capital_letter_c <-> mathematical_sans_serif_bold_capital_c
736 latin_capital_letter_d <-> mathematical_sans_serif_bold_capital_d
737 latin_capital_letter_e <-> mathematical_sans_serif_bold_capital_e
738 latin_capital_letter_f <-> mathematical_sans_serif_bold_capital_f
739 latin_capital_letter_g <-> mathematical_sans_serif_bold_capital_g
740 latin_capital_letter_h <-> mathematical_sans_serif_bold_capital_h
741 latin_capital_letter_i <-> mathematical_sans_serif_bold_capital_i
742 latin_capital_letter_j <-> mathematical_sans_serif_bold_capital_j
743 latin_capital_letter_k <-> mathematical_sans_serif_bold_capital_k
744 latin_capital_letter_l <-> mathematical_sans_serif_bold_capital_l
745 latin_capital_letter_m <-> mathematical_sans_serif_bold_capital_m
746 latin_capital_letter_n <-> mathematical_sans_serif_bold_capital_n
747 latin_capital_letter_o <-> mathematical_sans_serif_bold_capital_o
748 latin_capital_letter_p <-> mathematical_sans_serif_bold_capital_p
749 latin_capital_letter_q <-> mathematical_sans_serif_bold_capital_q
750 latin_capital_letter_r <-> mathematical_sans_serif_bold_capital_r
751 latin_capital_letter_s <-> mathematical_sans_serif_bold_capital_s
752 latin_capital_letter_t <-> mathematical_sans_serif_bold_capital_t
753 latin_capital_letter_u <-> mathematical_sans_serif_bold_capital_u
754 latin_capital_letter_v <-> mathematical_sans_serif_bold_capital_v
755 latin_capital_letter_w <-> mathematical_sans_serif_bold_capital_w
756 latin_capital_letter_x <-> mathematical_sans_serif_bold_capital_x
757 latin_capital_letter_y <-> mathematical_sans_serif_bold_capital_y
758 latin_capital_letter_z <-> mathematical_sans_serif_bold_capital_z
759
760 digit_one <-> mathematical_sans_serif_bold_digit_one
761 digit_two <-> mathematical_sans_serif_bold_digit_two
762 digit_three <-> mathematical_sans_serif_bold_digit_three
763 digit_four <-> mathematical_sans_serif_bold_digit_four
764 digit_five <-> mathematical_sans_serif_bold_digit_five
765 digit_six <-> mathematical_sans_serif_bold_digit_six
766 digit_seven <-> mathematical_sans_serif_bold_digit_seven
767 digit_eight <-> mathematical_sans_serif_bold_digit_eight
768 digit_nine <-> mathematical_sans_serif_bold_digit_nine
769 digit_zero <-> mathematical_sans_serif_bold_digit_zero

```

Sans Italic\itsans

```

770 LHSName "ascii"
771 RHSName "unicode-maths-sans-italic"
772
773 pass(Unicode)
774
775 latin_small_letter_a <-> mathematical_sans_serif_italic_small_a
776 latin_small_letter_b <-> mathematical_sans_serif_italic_small_b
777 latin_small_letter_c <-> mathematical_sans_serif_italic_small_c

```

```

778 latin_small_letter_d <-> mathematical_sans_serif_italic_small_d
779 latin_small_letter_e <-> mathematical_sans_serif_italic_small_e
780 latin_small_letter_f <-> mathematical_sans_serif_italic_small_f
781 latin_small_letter_g <-> mathematical_sans_serif_italic_small_g
782 latin_small_letter_h <-> mathematical_sans_serif_italic_small_h
783 latin_small_letter_i <-> mathematical_sans_serif_italic_small_i
784 latin_small_letter_j <-> mathematical_sans_serif_italic_small_j
785 latin_small_letter_k <-> mathematical_sans_serif_italic_small_k
786 latin_small_letter_l <-> mathematical_sans_serif_italic_small_l
787 latin_small_letter_m <-> mathematical_sans_serif_italic_small_m
788 latin_small_letter_n <-> mathematical_sans_serif_italic_small_n
789 latin_small_letter_o <-> mathematical_sans_serif_italic_small_o
790 latin_small_letter_p <-> mathematical_sans_serif_italic_small_p
791 latin_small_letter_q <-> mathematical_sans_serif_italic_small_q
792 latin_small_letter_r <-> mathematical_sans_serif_italic_small_r
793 latin_small_letter_s <-> mathematical_sans_serif_italic_small_s
794 latin_small_letter_t <-> mathematical_sans_serif_italic_small_t
795 latin_small_letter_u <-> mathematical_sans_serif_italic_small_u
796 latin_small_letter_v <-> mathematical_sans_serif_italic_small_v
797 latin_small_letter_w <-> mathematical_sans_serif_italic_small_w
798 latin_small_letter_x <-> mathematical_sans_serif_italic_small_x
799 latin_small_letter_y <-> mathematical_sans_serif_italic_small_y
800 latin_small_letter_z <-> mathematical_sans_serif_italic_small_z
801
802 latin_capital_letter_a <-> mathematical_sans_serif_italic_capital_a
803 latin_capital_letter_b <-> mathematical_sans_serif_italic_capital_b
804 latin_capital_letter_c <-> mathematical_sans_serif_italic_capital_c
805 latin_capital_letter_d <-> mathematical_sans_serif_italic_capital_d
806 latin_capital_letter_e <-> mathematical_sans_serif_italic_capital_e
807 latin_capital_letter_f <-> mathematical_sans_serif_italic_capital_f
808 latin_capital_letter_g <-> mathematical_sans_serif_italic_capital_g
809 latin_capital_letter_h <-> mathematical_sans_serif_italic_capital_h
810 latin_capital_letter_i <-> mathematical_sans_serif_italic_capital_i
811 latin_capital_letter_j <-> mathematical_sans_serif_italic_capital_j
812 latin_capital_letter_k <-> mathematical_sans_serif_italic_capital_k
813 latin_capital_letter_l <-> mathematical_sans_serif_italic_capital_l
814 latin_capital_letter_m <-> mathematical_sans_serif_italic_capital_m
815 latin_capital_letter_n <-> mathematical_sans_serif_italic_capital_n
816 latin_capital_letter_o <-> mathematical_sans_serif_italic_capital_o
817 latin_capital_letter_p <-> mathematical_sans_serif_italic_capital_p
818 latin_capital_letter_q <-> mathematical_sans_serif_italic_capital_q
819 latin_capital_letter_r <-> mathematical_sans_serif_italic_capital_r
820 latin_capital_letter_s <-> mathematical_sans_serif_italic_capital_s
821 latin_capital_letter_t <-> mathematical_sans_serif_italic_capital_t
822 latin_capital_letter_u <-> mathematical_sans_serif_italic_capital_u
823 latin_capital_letter_v <-> mathematical_sans_serif_italic_capital_v
824 latin_capital_letter_w <-> mathematical_sans_serif_italic_capital_w
825 latin_capital_letter_x <-> mathematical_sans_serif_italic_capital_x
826 latin_capital_letter_y <-> mathematical_sans_serif_italic_capital_y
827 latin_capital_letter_z <-> mathematical_sans_serif_italic_capital_z
828

```

```

829 digit_one <-> mathematical_sans_serif_digit_one
830 digit_two <-> mathematical_sans_serif_digit_two
831 digit_three <-> mathematical_sans_serif_digit_three
832 digit_four <-> mathematical_sans_serif_digit_four
833 digit_five <-> mathematical_sans_serif_digit_five
834 digit_six <-> mathematical_sans_serif_digit_six
835 digit_seven <-> mathematical_sans_serif_digit_seven
836 digit_eight <-> mathematical_sans_serif_digit_eight
837 digit_nine <-> mathematical_sans_serif_digit_nine
838 digit_zero <-> mathematical_sans_serif_digit_zero

```

Sans Bold Italic/\bfitsans

```

839 LHSName "ascii"
840 RHSName "unicode-maths-sans-italic-bold"
841
842 pass(Unicode)
843
844 latin_small_letter_a <-> mathematical_sans_serif_bold_italic_small_a
845 latin_small_letter_b <-> mathematical_sans_serif_bold_italic_small_b
846 latin_small_letter_c <-> mathematical_sans_serif_bold_italic_small_c
847 latin_small_letter_d <-> mathematical_sans_serif_bold_italic_small_d
848 latin_small_letter_e <-> mathematical_sans_serif_bold_italic_small_e
849 latin_small_letter_f <-> mathematical_sans_serif_bold_italic_small_f
850 latin_small_letter_g <-> mathematical_sans_serif_bold_italic_small_g
851 latin_small_letter_h <-> mathematical_sans_serif_bold_italic_small_h
852 latin_small_letter_i <-> mathematical_sans_serif_bold_italic_small_i
853 latin_small_letter_j <-> mathematical_sans_serif_bold_italic_small_j
854 latin_small_letter_k <-> mathematical_sans_serif_bold_italic_small_k
855 latin_small_letter_l <-> mathematical_sans_serif_bold_italic_small_l
856 latin_small_letter_m <-> mathematical_sans_serif_bold_italic_small_m
857 latin_small_letter_n <-> mathematical_sans_serif_bold_italic_small_n
858 latin_small_letter_o <-> mathematical_sans_serif_bold_italic_small_o
859 latin_small_letter_p <-> mathematical_sans_serif_bold_italic_small_p
860 latin_small_letter_q <-> mathematical_sans_serif_bold_italic_small_q
861 latin_small_letter_r <-> mathematical_sans_serif_bold_italic_small_r
862 latin_small_letter_s <-> mathematical_sans_serif_bold_italic_small_s
863 latin_small_letter_t <-> mathematical_sans_serif_bold_italic_small_t
864 latin_small_letter_u <-> mathematical_sans_serif_bold_italic_small_u
865 latin_small_letter_v <-> mathematical_sans_serif_bold_italic_small_v
866 latin_small_letter_w <-> mathematical_sans_serif_bold_italic_small_w
867 latin_small_letter_x <-> mathematical_sans_serif_bold_italic_small_x
868 latin_small_letter_y <-> mathematical_sans_serif_bold_italic_small_y
869 latin_small_letter_z <-> mathematical_sans_serif_bold_italic_small_z
870
871 latin_capital_letter_a <-> mathematical_sans_serif_bold_italic_capital_a
872 latin_capital_letter_b <-> mathematical_sans_serif_bold_italic_capital_b
873 latin_capital_letter_c <-> mathematical_sans_serif_bold_italic_capital_c
874 latin_capital_letter_d <-> mathematical_sans_serif_bold_italic_capital_d
875 latin_capital_letter_e <-> mathematical_sans_serif_bold_italic_capital_e
876 latin_capital_letter_f <-> mathematical_sans_serif_bold_italic_capital_f
877 latin_capital_letter_g <-> mathematical_sans_serif_bold_italic_capital_g

```

```

878 latin_capital_letter_h <> mathematical_sans_serif_bold_italic_capital_h
879 latin_capital_letter_i <> mathematical_sans_serif_bold_italic_capital_i
880 latin_capital_letter_j <> mathematical_sans_serif_bold_italic_capital_j
881 latin_capital_letter_k <> mathematical_sans_serif_bold_italic_capital_k
882 latin_capital_letter_l <> mathematical_sans_serif_bold_italic_capital_l
883 latin_capital_letter_m <> mathematical_sans_serif_bold_italic_capital_m
884 latin_capital_letter_n <> mathematical_sans_serif_bold_italic_capital_n
885 latin_capital_letter_o <> mathematical_sans_serif_bold_italic_capital_o
886 latin_capital_letter_p <> mathematical_sans_serif_bold_italic_capital_p
887 latin_capital_letter_q <> mathematical_sans_serif_bold_italic_capital_q
888 latin_capital_letter_r <> mathematical_sans_serif_bold_italic_capital_r
889 latin_capital_letter_s <> mathematical_sans_serif_bold_italic_capital_s
890 latin_capital_letter_t <> mathematical_sans_serif_bold_italic_capital_t
891 latin_capital_letter_u <> mathematical_sans_serif_bold_italic_capital_u
892 latin_capital_letter_v <> mathematical_sans_serif_bold_italic_capital_v
893 latin_capital_letter_w <> mathematical_sans_serif_bold_italic_capital_w
894 latin_capital_letter_x <> mathematical_sans_serif_bold_italic_capital_x
895 latin_capital_letter_y <> mathematical_sans_serif_bold_italic_capital_y
896 latin_capital_letter_z <> mathematical_sans_serif_bold_italic_capital_z
897
898 digit_one <> mathematical_sans_serif_bold_digit_one
899 digit_two <> mathematical_sans_serif_bold_digit_two
900 digit_three <> mathematical_sans_serif_bold_digit_three
901 digit_four <> mathematical_sans_serif_bold_digit_four
902 digit_five <> mathematical_sans_serif_bold_digit_five
903 digit_six <> mathematical_sans_serif_bold_digit_six
904 digit_seven <> mathematical_sans_serif_bold_digit_seven
905 digit_eight <> mathematical_sans_serif_bold_digit_eight
906 digit_nine <> mathematical_sans_serif_bold_digit_nine
907 digit_zero <> mathematical_sans_serif_bold_digit_zero

```

TypeWriter^{^tt}

```

908 LHSName "ascii"
909 RHSName "unicode-maths-typewriter"
910
911 pass(Unicode)
912
913 latin_small_letter_a <> mathematical_monospace_small_a
914 latin_small_letter_b <> mathematical_monospace_small_b
915 latin_small_letter_c <> mathematical_monospace_small_c
916 latin_small_letter_d <> mathematical_monospace_small_d
917 latin_small_letter_e <> mathematical_monospace_small_e
918 latin_small_letter_f <> mathematical_monospace_small_f
919 latin_small_letter_g <> mathematical_monospace_small_g
920 latin_small_letter_h <> mathematical_monospace_small_h
921 latin_small_letter_i <> mathematical_monospace_small_i
922 latin_small_letter_j <> mathematical_monospace_small_j
923 latin_small_letter_k <> mathematical_monospace_small_k
924 latin_small_letter_l <> mathematical_monospace_small_l
925 latin_small_letter_m <> mathematical_monospace_small_m
926 latin_small_letter_n <> mathematical_monospace_small_n

```

```

927 latin_small_letter_o <> mathematical_monospace_small_o
928 latin_small_letter_p <> mathematical_monospace_small_p
929 latin_small_letter_q <> mathematical_monospace_small_q
930 latin_small_letter_r <> mathematical_monospace_small_r
931 latin_small_letter_s <> mathematical_monospace_small_s
932 latin_small_letter_t <> mathematical_monospace_small_t
933 latin_small_letter_u <> mathematical_monospace_small_u
934 latin_small_letter_v <> mathematical_monospace_small_v
935 latin_small_letter_w <> mathematical_monospace_small_w
936 latin_small_letter_x <> mathematical_monospace_small_x
937 latin_small_letter_y <> mathematical_monospace_small_y
938 latin_small_letter_z <> mathematical_monospace_small_z
939
940 latin_capital_letter_a <> mathematical_monospace_capital_a
941 latin_capital_letter_b <> mathematical_monospace_capital_b
942 latin_capital_letter_c <> mathematical_monospace_capital_c
943 latin_capital_letter_d <> mathematical_monospace_capital_d
944 latin_capital_letter_e <> mathematical_monospace_capital_e
945 latin_capital_letter_f <> mathematical_monospace_capital_f
946 latin_capital_letter_g <> mathematical_monospace_capital_g
947 latin_capital_letter_h <> mathematical_monospace_capital_h
948 latin_capital_letter_i <> mathematical_monospace_capital_i
949 latin_capital_letter_j <> mathematical_monospace_capital_j
950 latin_capital_letter_k <> mathematical_monospace_capital_k
951 latin_capital_letter_l <> mathematical_monospace_capital_l
952 latin_capital_letter_m <> mathematical_monospace_capital_m
953 latin_capital_letter_n <> mathematical_monospace_capital_n
954 latin_capital_letter_o <> mathematical_monospace_capital_o
955 latin_capital_letter_p <> mathematical_monospace_capital_p
956 latin_capital_letter_q <> mathematical_monospace_capital_q
957 latin_capital_letter_r <> mathematical_monospace_capital_r
958 latin_capital_letter_s <> mathematical_monospace_capital_s
959 latin_capital_letter_t <> mathematical_monospace_capital_t
960 latin_capital_letter_u <> mathematical_monospace_capital_u
961 latin_capital_letter_v <> mathematical_monospace_capital_v
962 latin_capital_letter_w <> mathematical_monospace_capital_w
963 latin_capital_letter_x <> mathematical_monospace_capital_x
964 latin_capital_letter_y <> mathematical_monospace_capital_y
965 latin_capital_letter_z <> mathematical_monospace_capital_z
966
967 digit_one <> mathematical_monospace_digit_one
968 digit_two <> mathematical_monospace_digit_two
969 digit_three <> mathematical_monospace_digit_three
970 digit_four <> mathematical_monospace_digit_four
971 digit_five <> mathematical_monospace_digit_five
972 digit_six <> mathematical_monospace_digit_six
973 digit_seven <> mathematical_monospace_digit_seven
974 digit_eight <> mathematical_monospace_digit_eight
975 digit_nine <> mathematical_monospace_digit_nine
976 digit_zero <> mathematical_monospace_digit_zero

```