

作りましょう 0.7

パラメタ方式フォントファミリ
校とプリティプリントのソース

Tsukurimashou 0.7

Parametric Font Family
Proofs and pretty-printed
source code

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Proofs and pretty-printed source code for Tsukurimashou
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Volume V

U+3000 to U+4DFF

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30

tsuku-31.mp

31

tsuku-32.mp

32

tsuku-34.mp

34

tsuku-4d.mp

4D


```

1 %
2 % Unicode page 30 (Kana) for Tsukurimashou
3 % Copyright (C) 2011, 2012 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31
32
33 beginfont
34
35 % AUTODEPS
36 input dakuten.mp;
37 input genjimon.mp;
38 input hiragana.mp;
39 input katakana.mp;
40 input punct.mp;
41
42 do_late_includes;
43
44
45

```

Ideographic Symbols And Punctuation

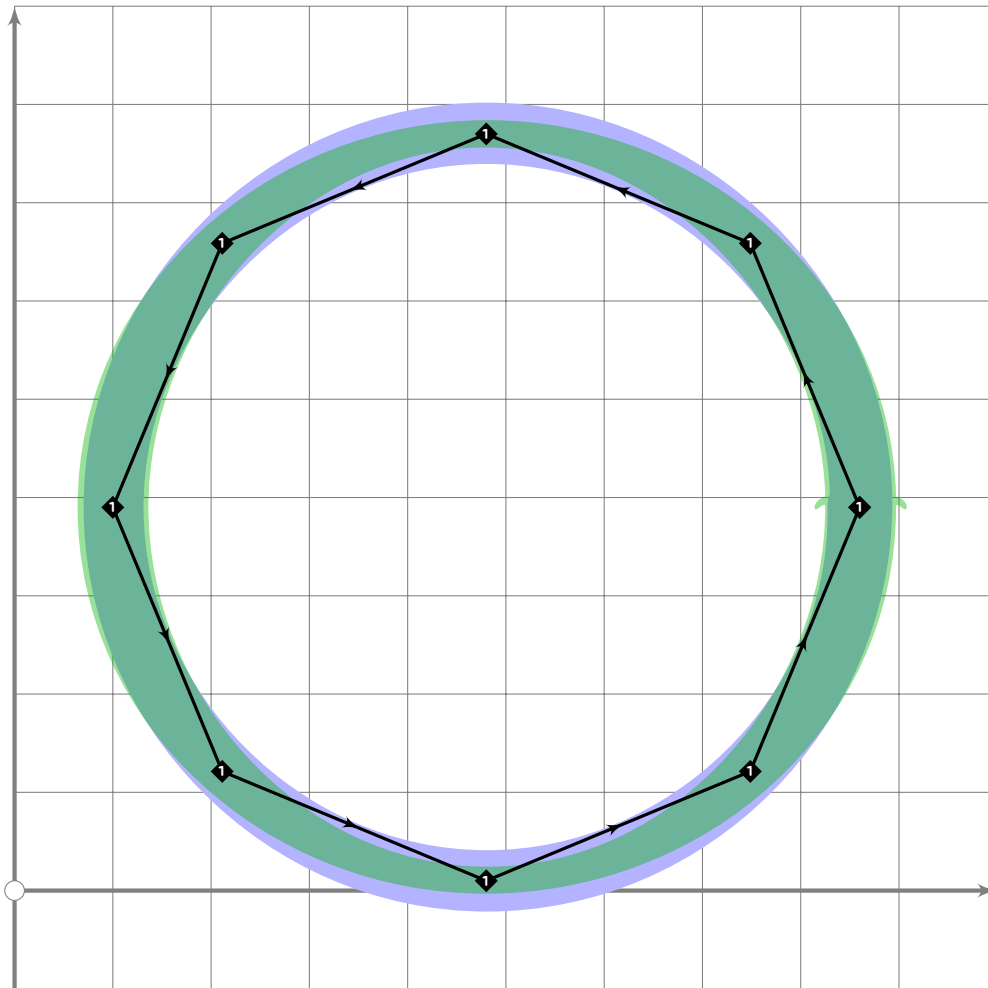
```

46 % IDEOGRAPHIC SYMBOLS AND PUNCTUATION
47
48 % ideographic comma
49 begintsuglyph("uni3001";1);
50     punct.hancomma;
51     tsu_render;
52 endtsuglyph;
53
54 % ideographic full stop
55 begintsuglyph("uni3002";2);
56     punct.full_stop;
57     tsu_render;
58 endtsuglyph;
59

```

[see page 382]

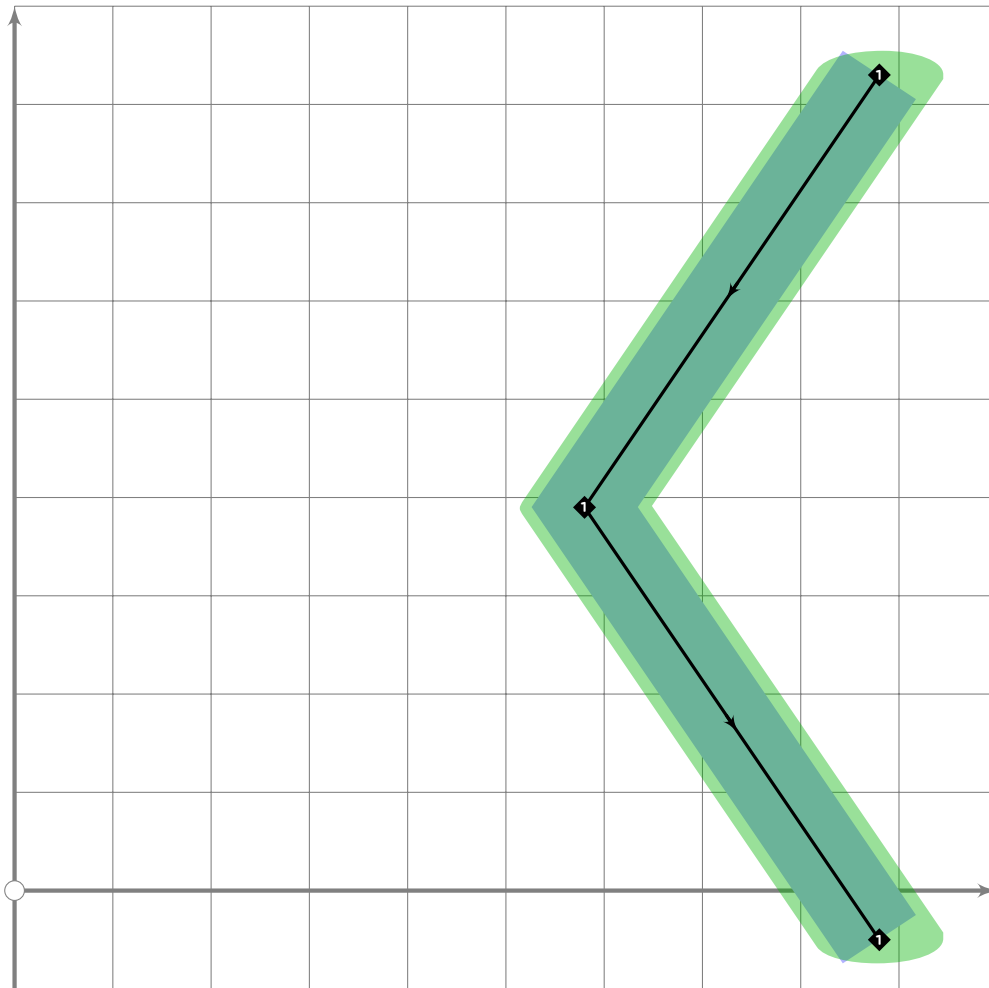
[see page 379]



```

60 % kanji zero
61 begint Suglyph("uni3007";7);
62 % letter brush for this so it blends better with other kanji digits;
63 % let's drag the Japanese kicking and screaming into the Sixth Century!
64 push_stroke(fullcircle scaled 760 shifted (480,390),
65   (1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-cycle);
66 set_bosize(0,90);
67 tsu_render;
68 endtsuglyph;
69
70 path bracket[];
71
72 % left and right single angle brackets
73 bracket1:=(880,830)-(580,390)-(880,-50);

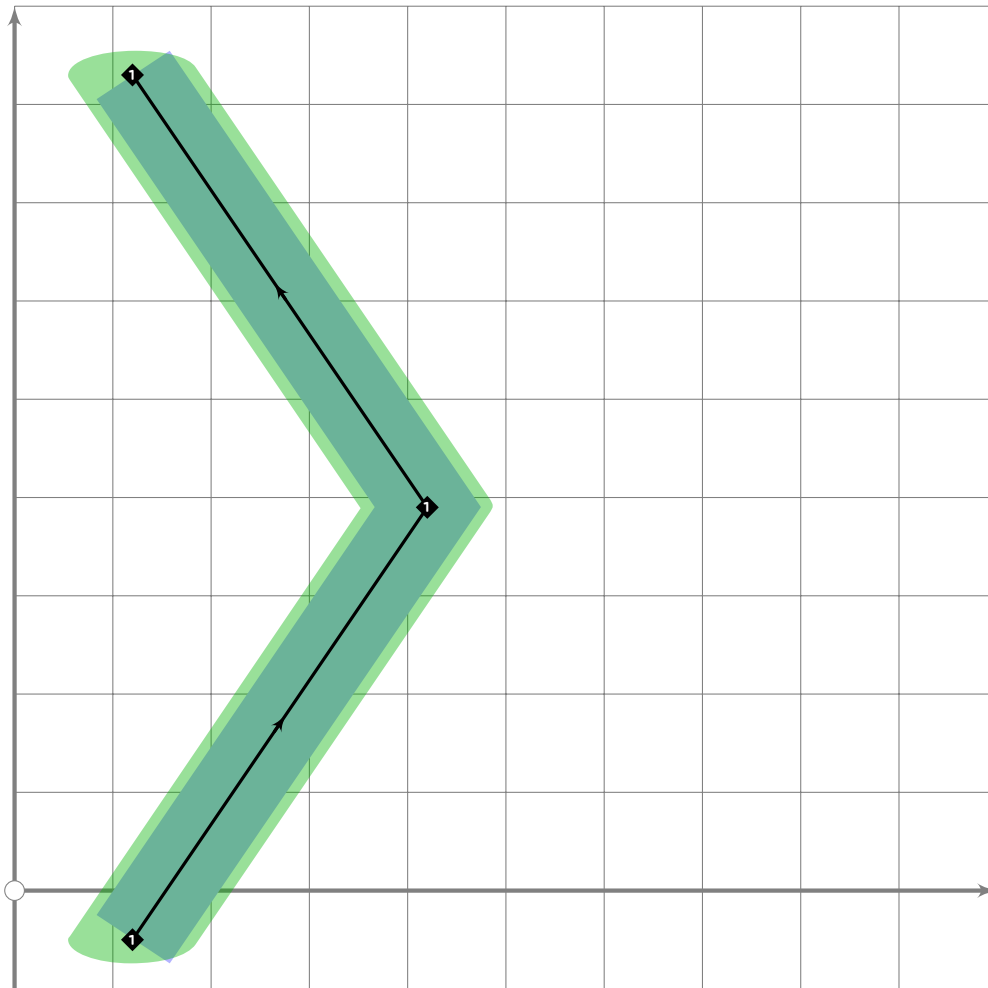
```

```

74 begintsuglyph("uni3008";8);
75  push_stroke((880,830)-(580,390)-(880,50),
76    (2,2)-(2,2)-(2,2));
77  set_bosize(0,120);
78  set_botip(0,1,1);
79  tsu_render;
80 endtsuglyph;

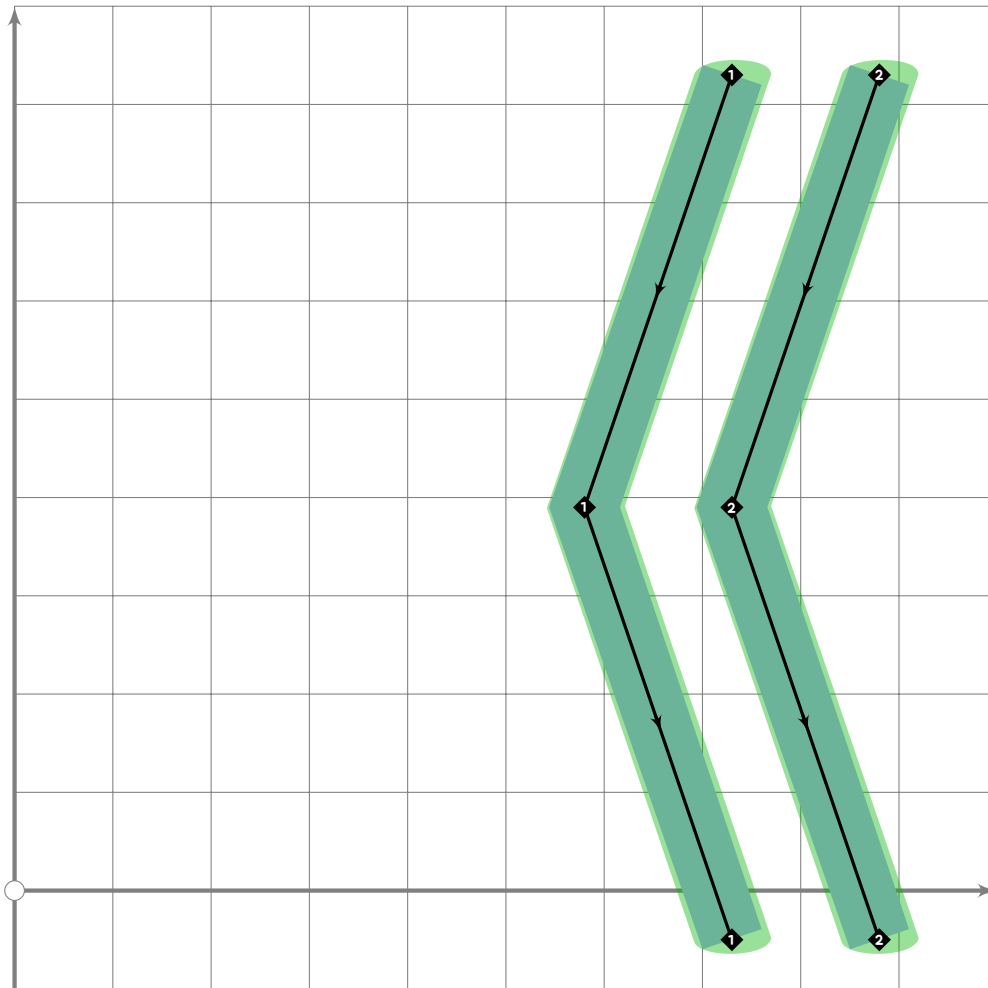
```



```

81 beginsuglyph("uni3009"9);
82  push_stroke(((880,830)-(580,390)-(880,-50)) rotatedaround (centre_pt,180),
83    (2,2)-(2,2)-(2,2));
84  set_bosize(0,120);
85  set_botip(0,1,1);
86  tsu_render;
87 endtsuglyph;
88
89 % left and right double angle brackets
90 bracket1:=(880-tsu_punct_size*3/2,830)-(580,390)
91   -(880-tsu_punct_size*3/2,-50);
92 bracket2:=(880,830)-(580+tsu_punct_size*3/2,390)-(880,-50);

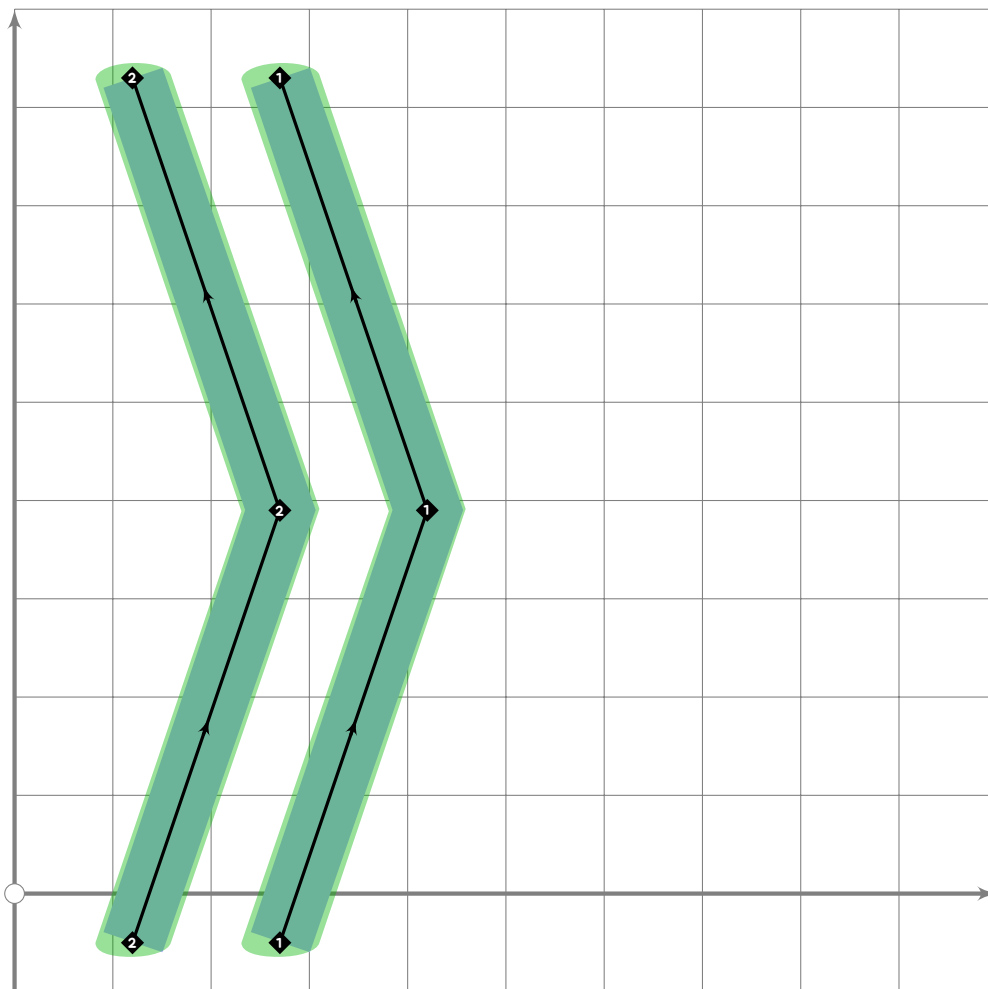
```



```

93 begintsuglyph("uni300A",10);
94   push_stroke(bracket1,
95     (1,7,1,7)–(1,7,1,7)–(1,7,1,7));
96   set_bosize(0,90);
97   set_botip(0,1,1);
98
99   push_stroke(bracket2,
100     (1,7,1,7)–(1,7,1,7)–(1,7,1,7));
101   set_bosize(0,90);
102   set_botip(0,1,1);
103
104   tsu_render;
105 endtsuglyph;

```



```

106 beginsuglyph("uni300B";11);
107   push_stroke(bracket1 rotatedaround (centre_pt,180),
108     (1.7,1.7)-(1.7,1.7)-(1.7,1.7));
109   set_bosize(0,90);
110   set_botip(0,1,1);
111
112   push_stroke(bracket2 rotatedaround (centre_pt,180),
113     (1.7,1.7)-(1.7,1.7)-(1.7,1.7));
114   set_bosize(0,90);
115   set_botip(0,1,1);
116
117   tsu_render;
118 endtsuglyph;
119
120 % left and right corner brackets
121 beginsuglyph("uni300C";12);
122   punct.corner_left;
123   tsu_render;
124 endtsuglyph;
125 beginsuglyph("uni300D";13);
126   punct.corner_right;

```

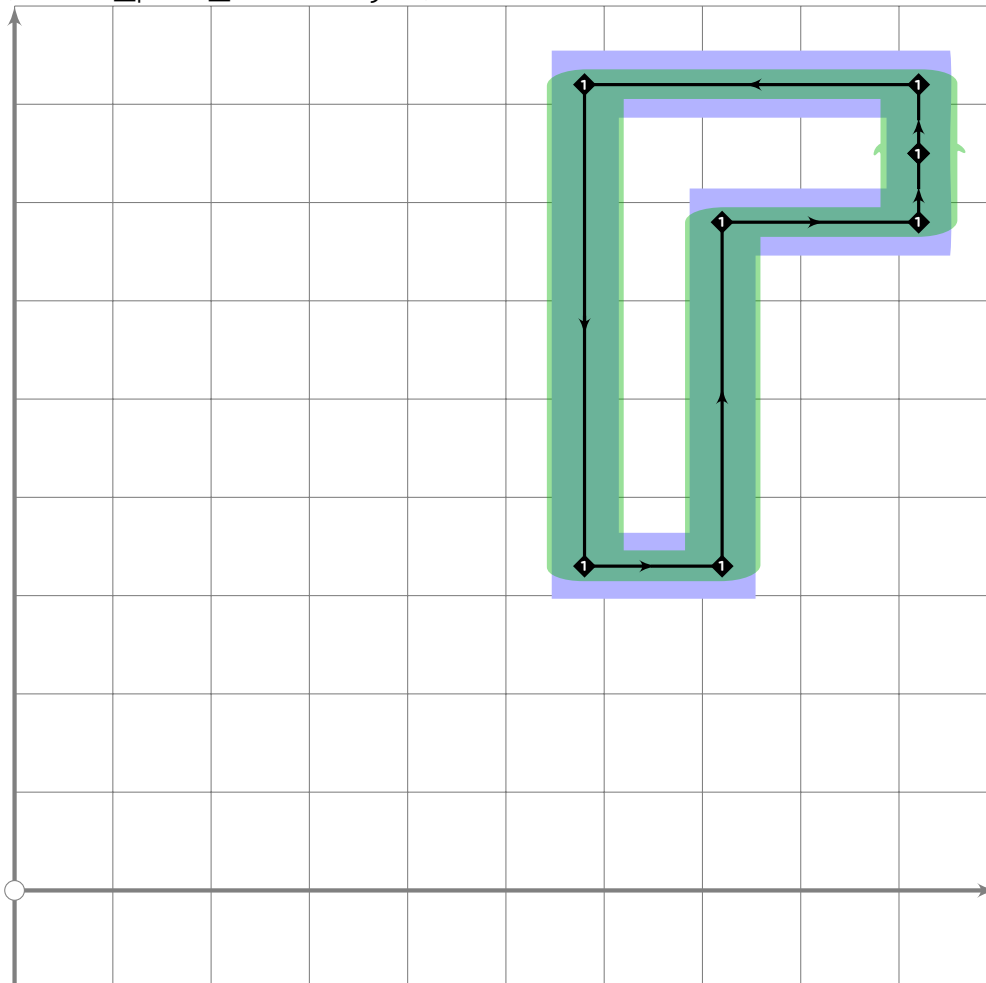
[see page 370]

[see page 371]

```

127 tsu_render;
128 endtsuglyph;
129
130 % left and right white corner brackets
131 bracket1:=(920,750)-
132   (920,750+tsu_punct_size*0.7)-
133   (650+tsu_punct_size*0.7,750+tsu_punct_size*0.7)-
134   (650+tsu_punct_size*0.7,400+tsu_punct_size*0.7)-
135   (650+tsu_punct_size*0.7,400+tsu_punct_size*0.7)-
136   (650+tsu_punct_size*0.7,750+tsu_punct_size*0.7)-
137   (920,750+tsu_punct_size*0.7)-cycle;

```



```

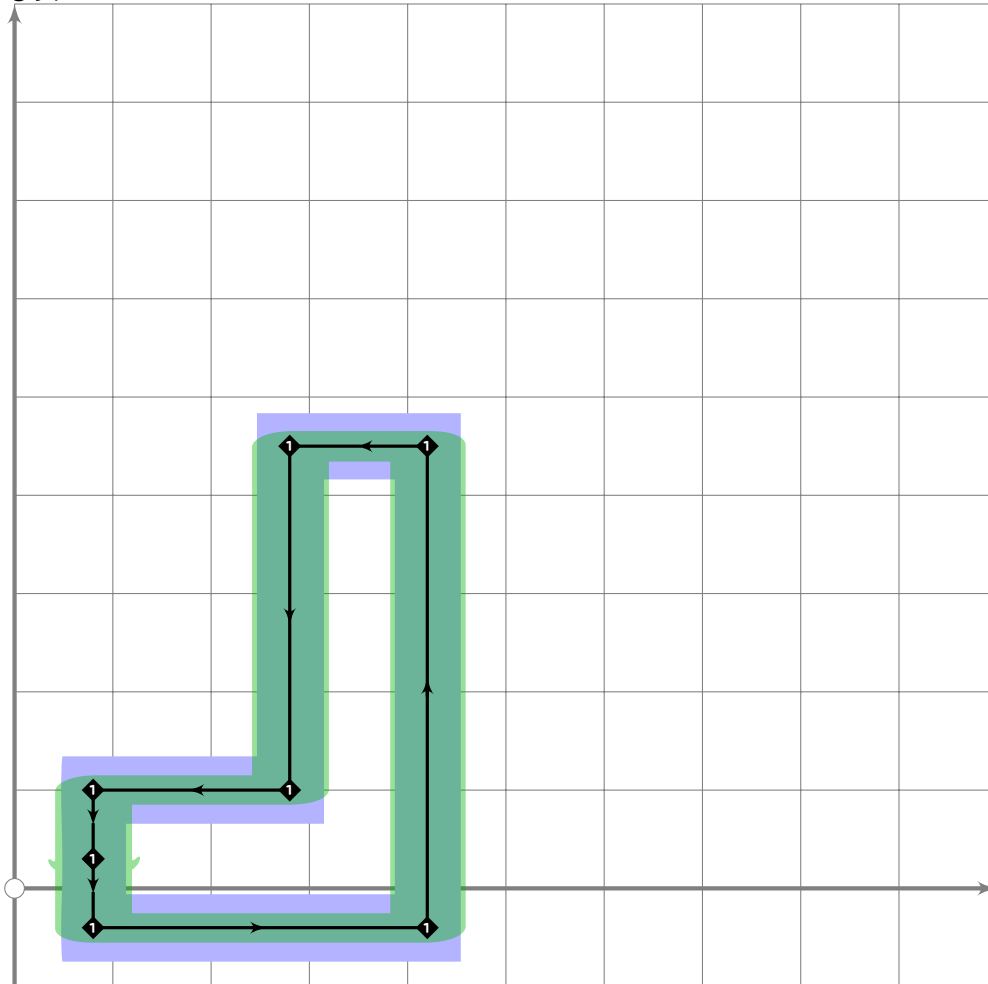
138 beginsuglyph("uni300E",14);
139 push_stroke(bracket1,
140   (1,1,1,7)-(1,1,1,7)-(1,1,1,7)-(1,1,1,7)-(1,1,1,7)-
141   (1,1,1,7)-(1,1,1,7)-cycle);
142 set_bosize(0,90);
143 set_botip(0,1,1);
144 set_botip(0,2,1);
145 set_botip(0,3,1);
146 set_botip(0,4,1);
147 set_botip(0,5,1);

```

U+300F
tsuku.uni300F

30

```
148 set_botip(0,6,1);
149
150 tsu_render;
151 endtsuglyph;
```

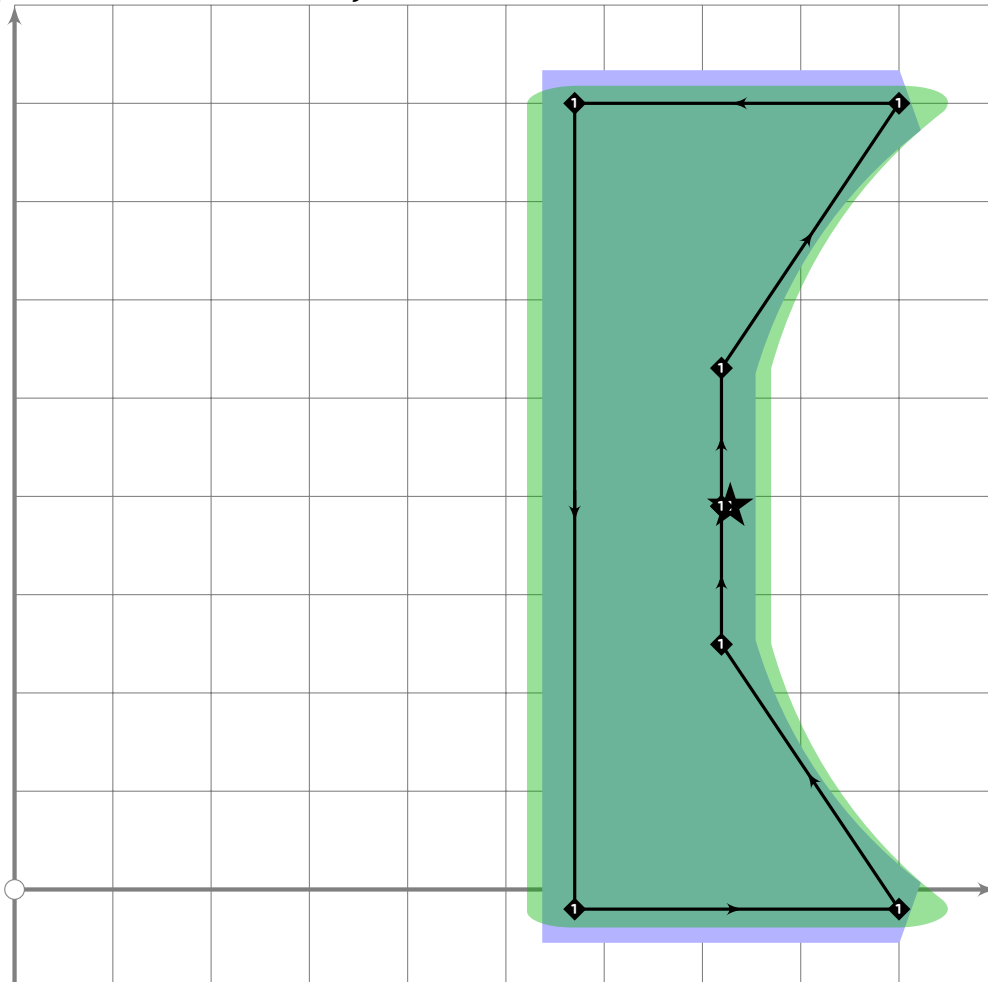


```
152 beginsuglyph("uni300F",15);
153 push_stroke(bracket1 rotatedaround (centre_pt,180),
154   (1,7,1,7)-(1,7,1,7)-(1,7,1,7)-(1,7,1,7)-(1,7,1,7)-
155   (1,7,1,7)-(1,7,1,7)-cycle);
156 set_bosize(0,90);
157 set_botip(0,1,1);
158 set_botip(0,2,1);
159 set_botip(0,3,1);
160 set_botip(0,4,1);
161 set_botip(0,5,1);
162 set_botip(0,6,1);
163
164 tsu_render;
165 endtsuglyph;
166
167 % left and right white and black lenticular brackets
168 % grouped here, out of Unicode sequence, to share the outline
```

```

169 bracket1:=(900-2*tsu_punct_size,390){up}..
170 (900,800)-(900-3.3*tsu_punct_size,800)-
171 (900-3.3*tsu_punct_size,20)-(900,20)..
172 {up}cycle;
173 bracket1:=(0.5[point 0.3 of bracket1,point 4.7 of bracket1])-
174 subpath (0.3,4.7) of bracket1-cycle;

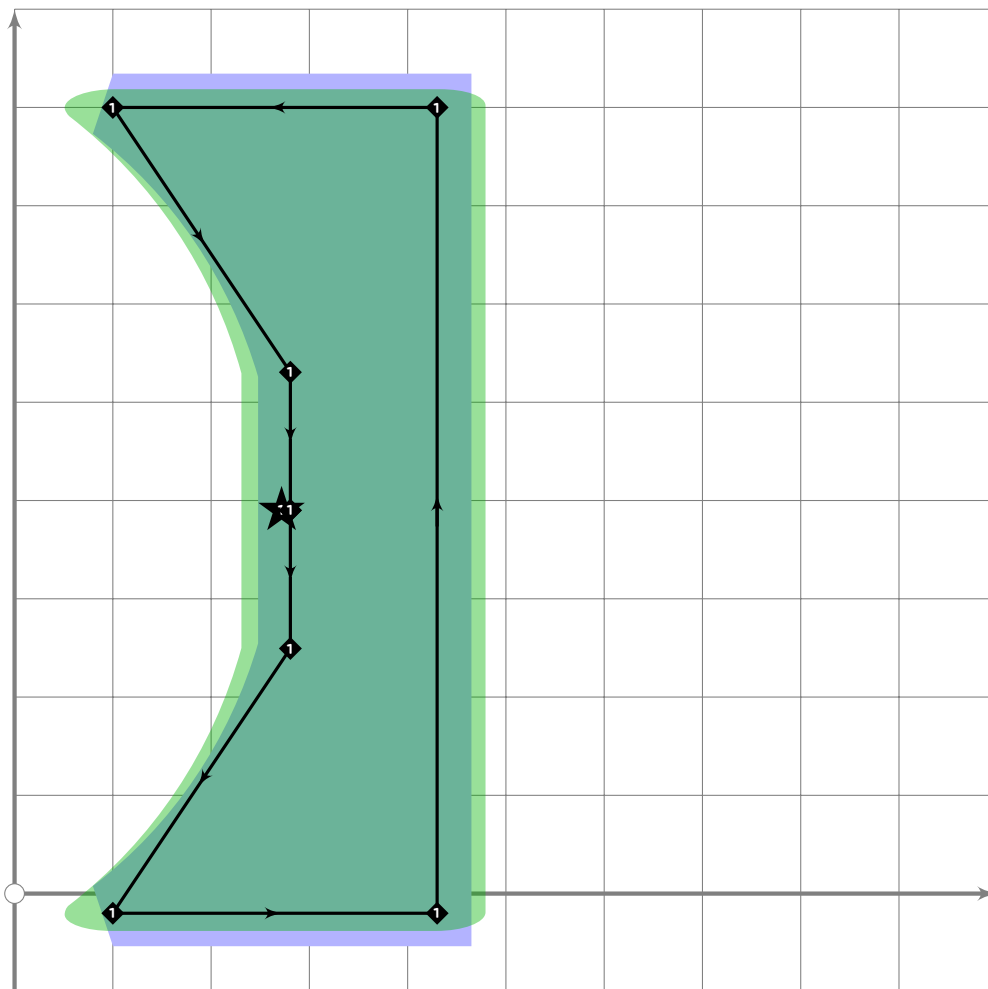
```



```

175 beginsuglyph("uni3010",16);
176 push_stroke(bracket1,
177 (2,2)-(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-cycle);
178 set_bosize(0,90);
179 set_botip(0,1,1);
180 set_botip(0,2,0);
181 set_botip(0,3,1);
182 set_botip(0,4,1);
183 set_botip(0,5,0);
184 set_botip(0,6,1);
185 push_lcblob(get_stroke(0));
186
187 tsu_render;
188 endtsuglyph;

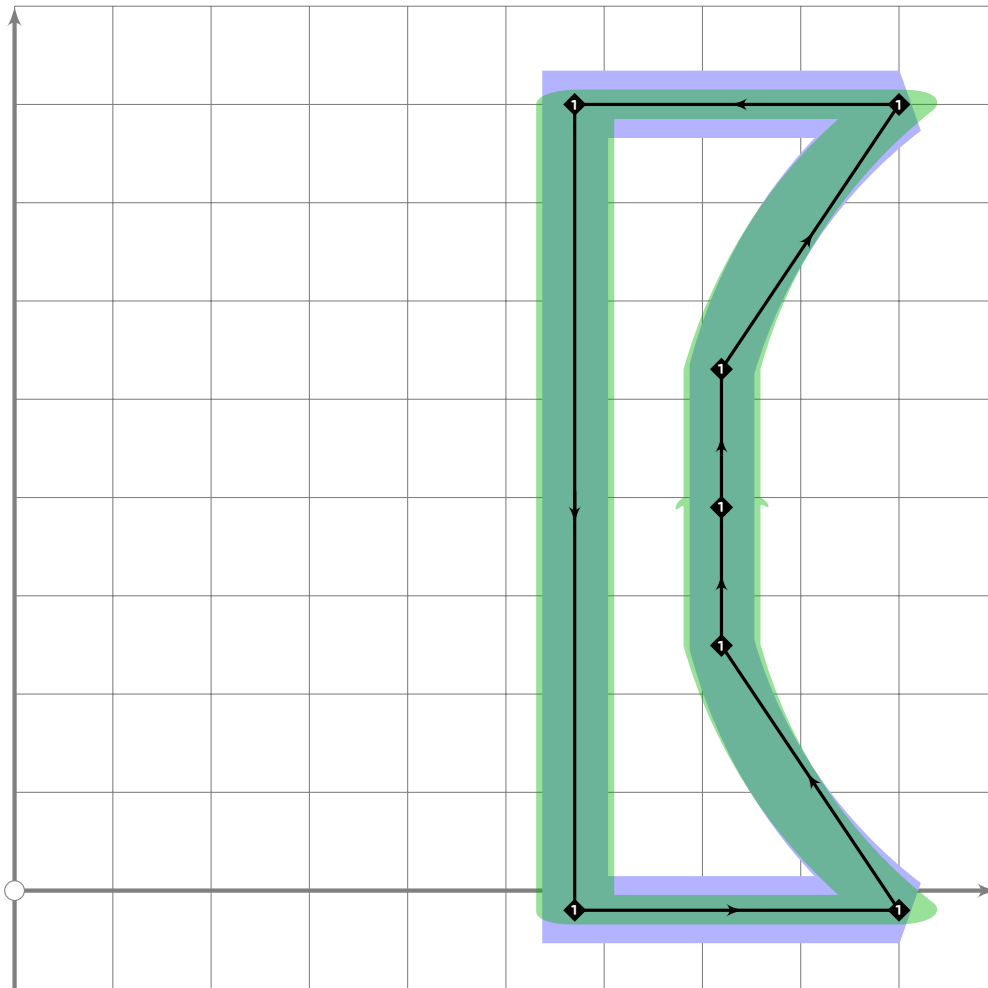
```



```

189 beginsuglyph("uni3011",17);
190  push_stroke(bracket1 rotatedaround (centre_pt,180),
191    (2,2)-(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-cycle);
192  set_bosize(0,90);
193  set_botip(0,1,1);
194  set_botip(0,2,0);
195  set_botip(0,3,1);
196  set_botip(0,4,1);
197  set_botip(0,5,0);
198  set_botip(0,6,1);
199  push_lcblob(get_stroke(0));
200
201  tsu_render;
202 endtsuglyph;

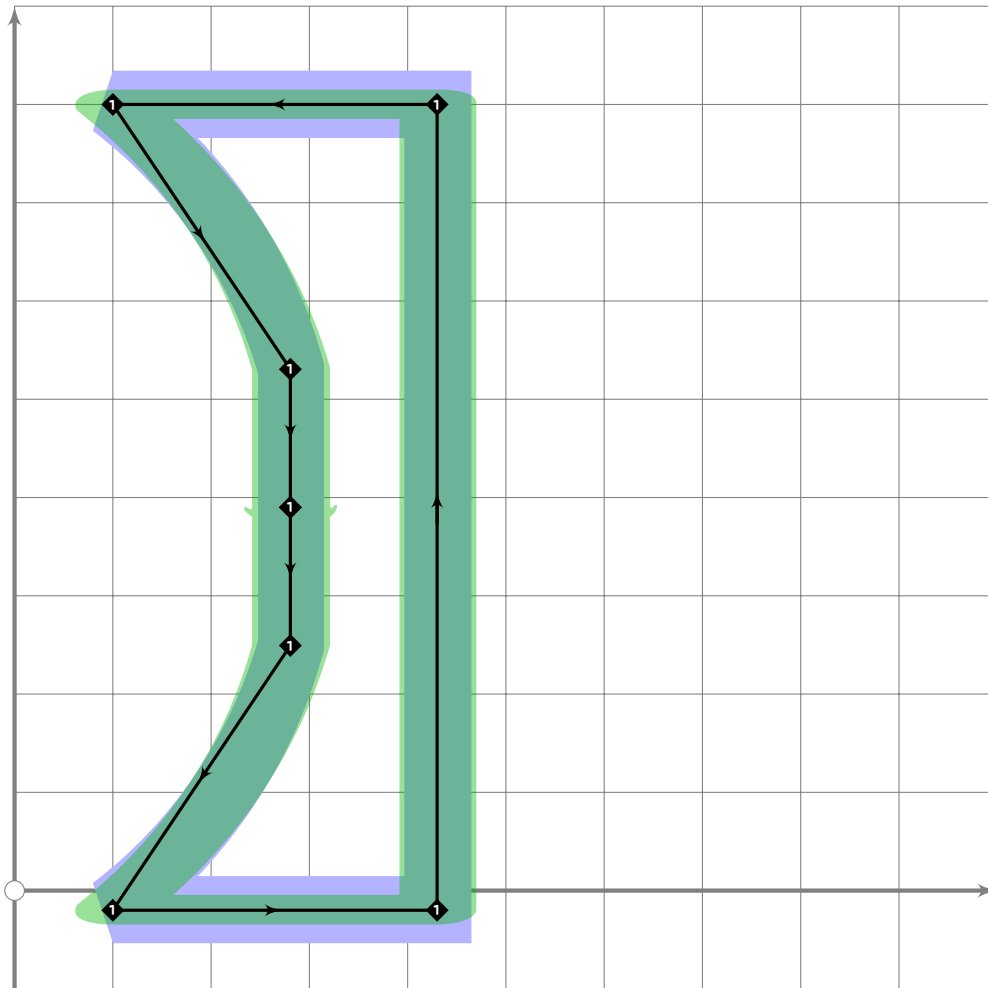
```

```

203 beginsuglyph("uni3016",22);
204   push_stroke(bracket1,
205     (1.7,1.7)–(1.7,1.7)–(1.7,1.7)–(1.7,1.7)–(1.7,1.7)–
206     (1.7,1.7)–(1.7,1.7)–cycle);
207   set_bosize(0,90);
208   set_botip(0,1,1);
209   set_botip(0,2,0);
210   set_botip(0,3,1);
211   set_botip(0,4,1);
212   set_botip(0,5,0);
213   set_botip(0,6,1);
214
215   tsu_render;
216 endtsuglyph;

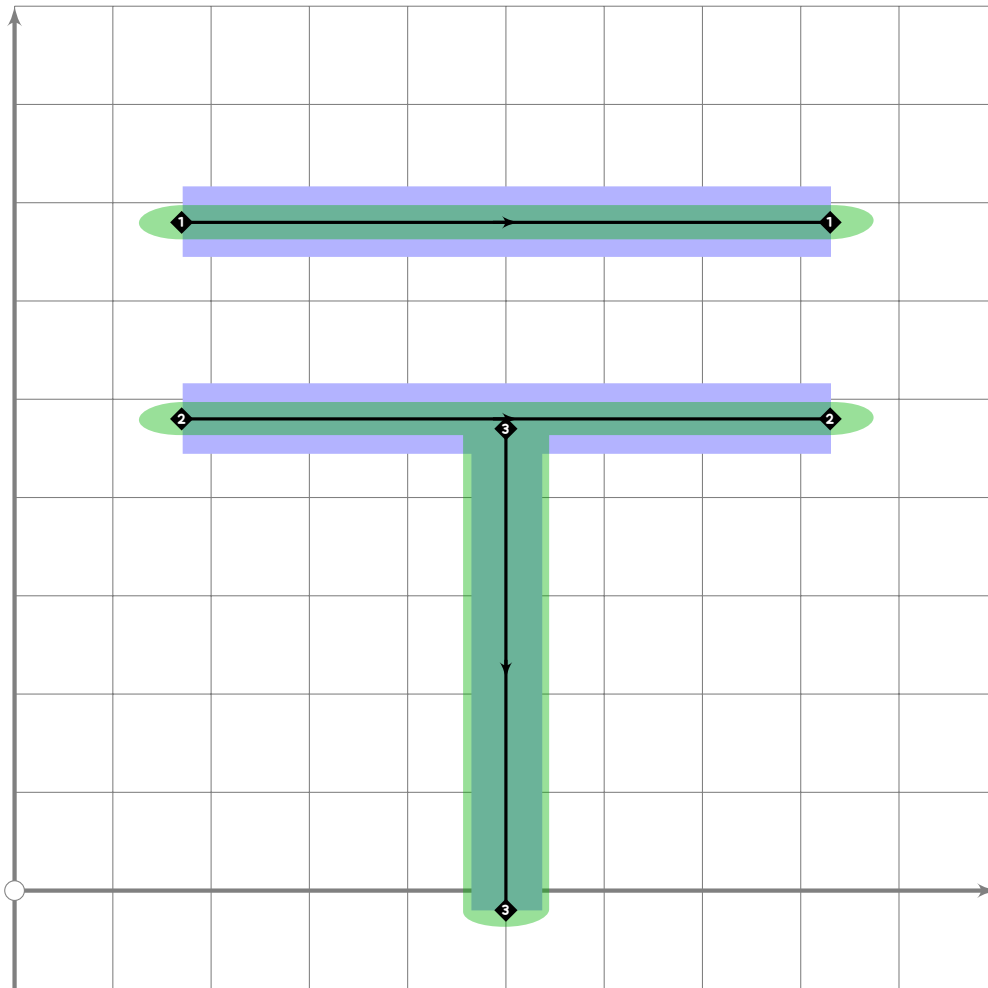
```



```

217 beginsuglyph("uni3017";23);
218   push_stroke(bracket1 rotatedaround (centre_pt,180),
219     (1.7,1.7)–(1.7,1.7)–(1.7,1.7)–(1.7,1.7)–(1.7,1.7)–
220     (1.7,1.7)–(1.7,1.7)–cycle);
221   set_bosize(0,90);
222   set_botip(0,1,1);
223   set_botip(0,2,0);
224   set_botip(0,3,1);
225   set_botip(0,4,1);
226   set_botip(0,5,0);
227   set_botip(0,6,1);
228
229   tsu_render;
230 endsuglyph;
231

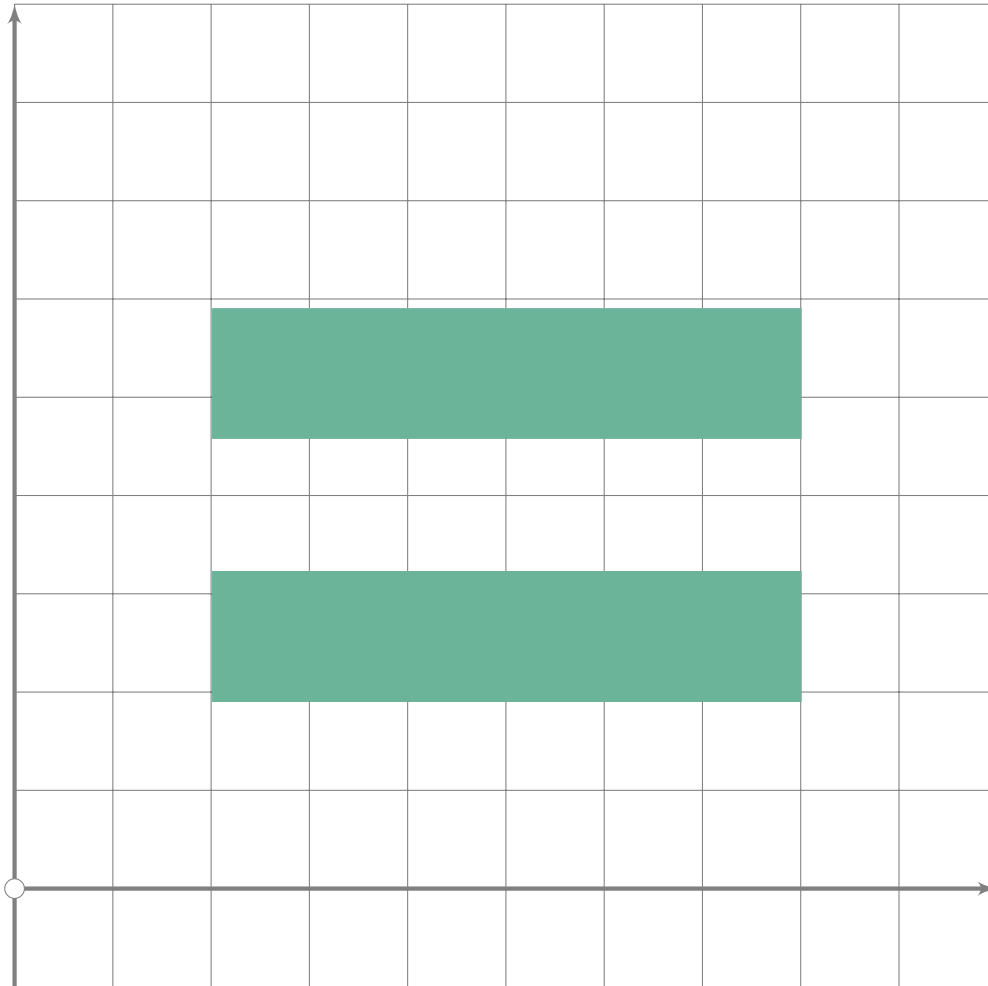
```



```

232 % Japanese postal mark
233 begint Suglyph("uni3012",18);
234   push_stroke((170,680)-(830,680),(1.7,1.7)-(1.7,1.7));
235
236   push_stroke((170,680-2*tsu_punct_size)-(830,680-2*tsu_punct_size),
237     (1.7,1.7)-(1.7,1.7));
238
239   push_stroke((500,720-2.5*tsu_punct_size)-(500,-20),
240     (1.7,1.7)-(1.7,1.7));
241
242   tsu_render;
243 endtsuglyph;
244

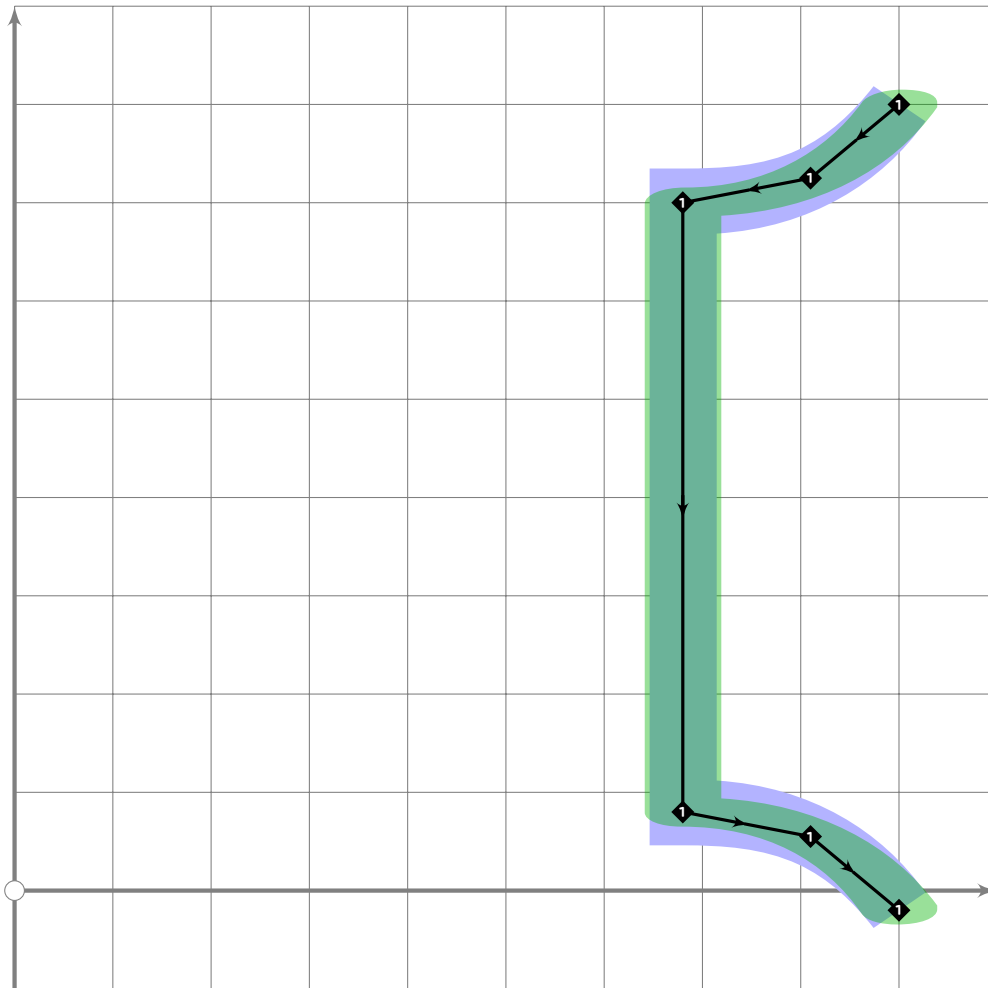
```



```

245 % "geta" or substitute mark
246 begint Suglyph("uni3013",19);
247   x2-x1=6*tsu_punct_size;
248   0.5[x1,x2]=500;
249   y4-y1=4*tsu_punct_size;
250   y2-y1=y3-y2=y4-y3;
251   0.5[y1,y4]=390;
252   dangerousFill
253     (x1,y4)-(x1,y3)-(x2,y3)-(x2,y4)-cycle,
254     (x1,y2)-(x1,y1)-(x2,y1)-(x2,y2)-cycle;
255 endtsuglyph;
256
257 % left and right plain and white tortoise shell brackets
258 % grouped here, out of Unicode sequence, to share the outline
259 bracket1:=(900,800)..
260   (900-tsu_punct_size*0.9,800-tsu_punct_size*3/4)..
261   {left}(900-2.2*tsu_punct_size,800-tsu_punct_size)-
262   (900-2.2*tsu_punct_size,20+tsu_punct_size){right}..
263   (900-tsu_punct_size*0.9,20+tsu_punct_size*3/4)..
264   (900,20);
265 bracket2:=(point 1 of bracket1)-(point 4 of bracket1);

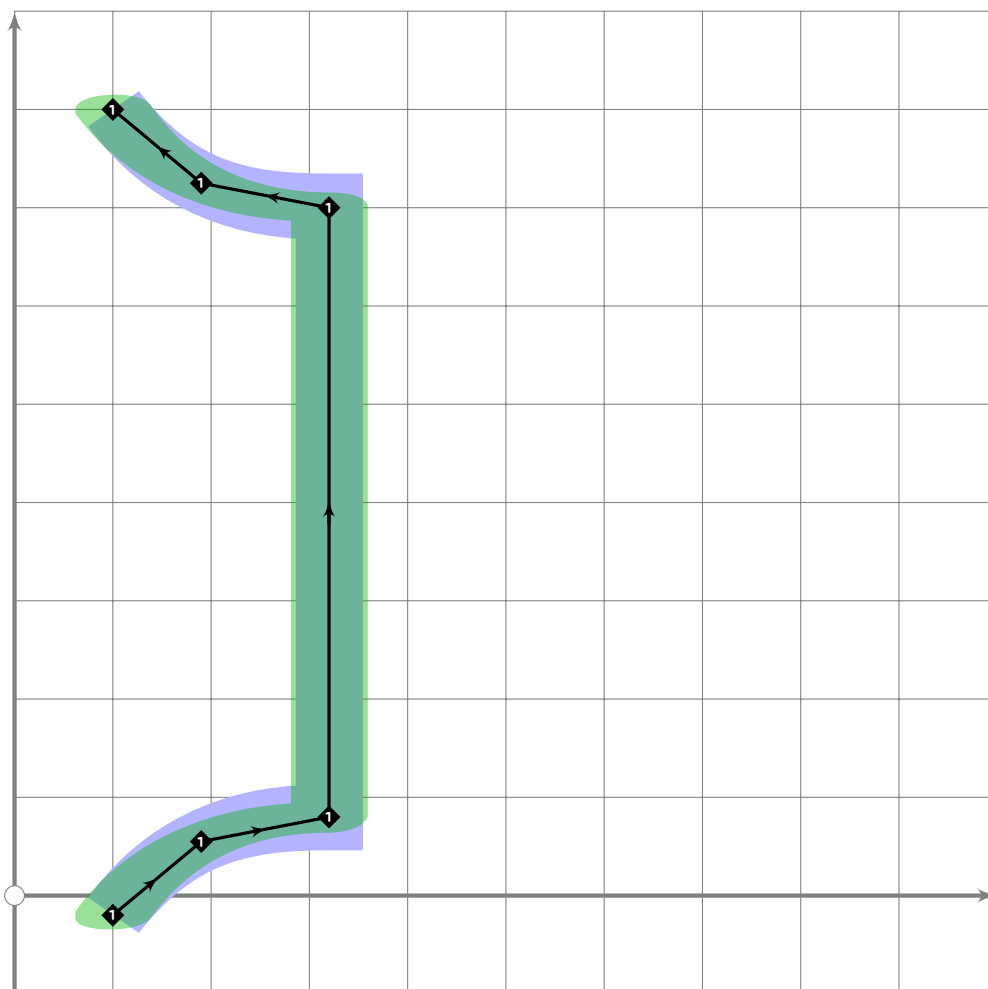
```



```

266 beginsuglyph("uni3014";20);
267   push_stroke(bracket1,
268     (1,7,1,7)-(1,7,1,7)-(1,7,1,7)-(1,7,1,7)-(1,7,1,7)-(1,7,1,7));
269   set_bosize(0,90);
270   set_botip(0,2,1);
271   set_botip(0,3,1);
272
273   tsu_render;
274 endtsuglyph;

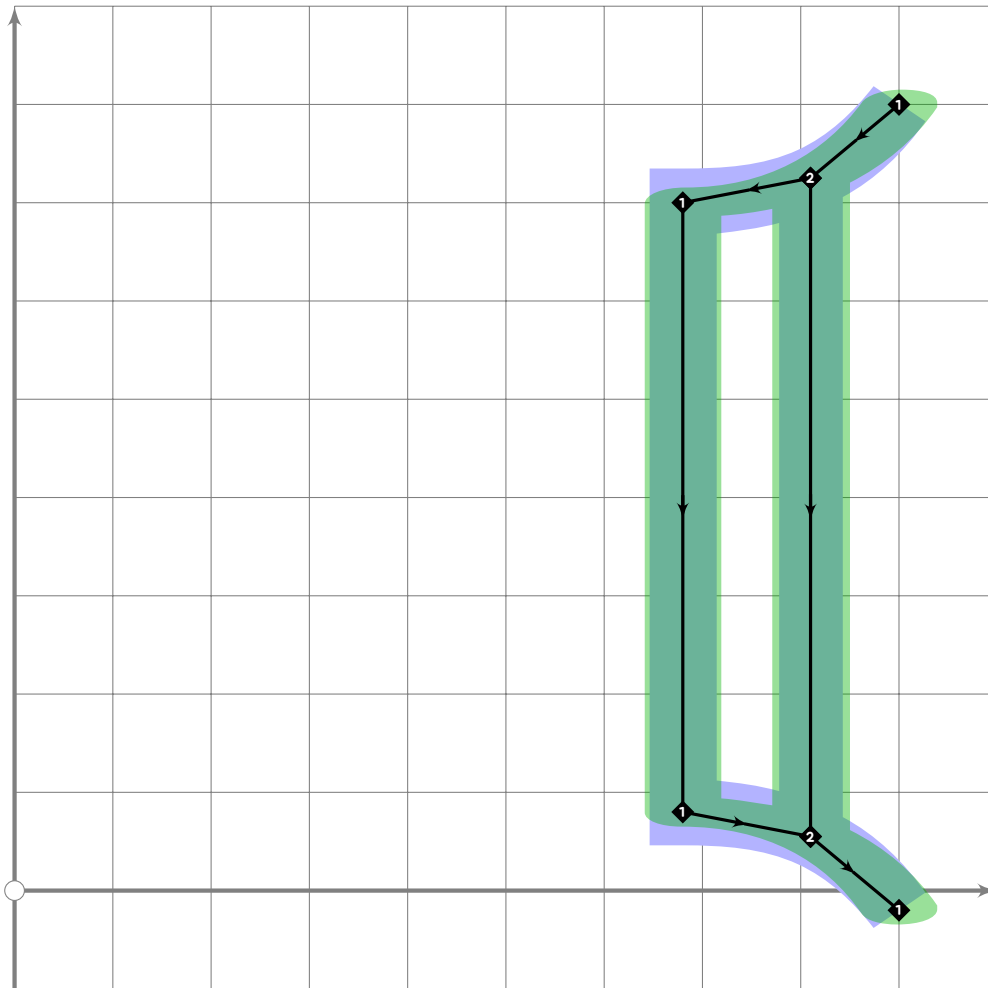
```



```

275 beginsuglyph("uni3015";21);
276   push_stroke(bracket1 rotatedaround (centre_pt,180),
277     (1.7,1.7)–(1.7,1.7)–(1.7,1.7)–(1.7,1.7)–(1.7,1.7)–(1.7,1.7));
278   set_bosize(0,90);
279   set_botip(0,2,1);
280   set_botip(0,3,1);
281
282   tsu_render;
283 endtsuglyph;

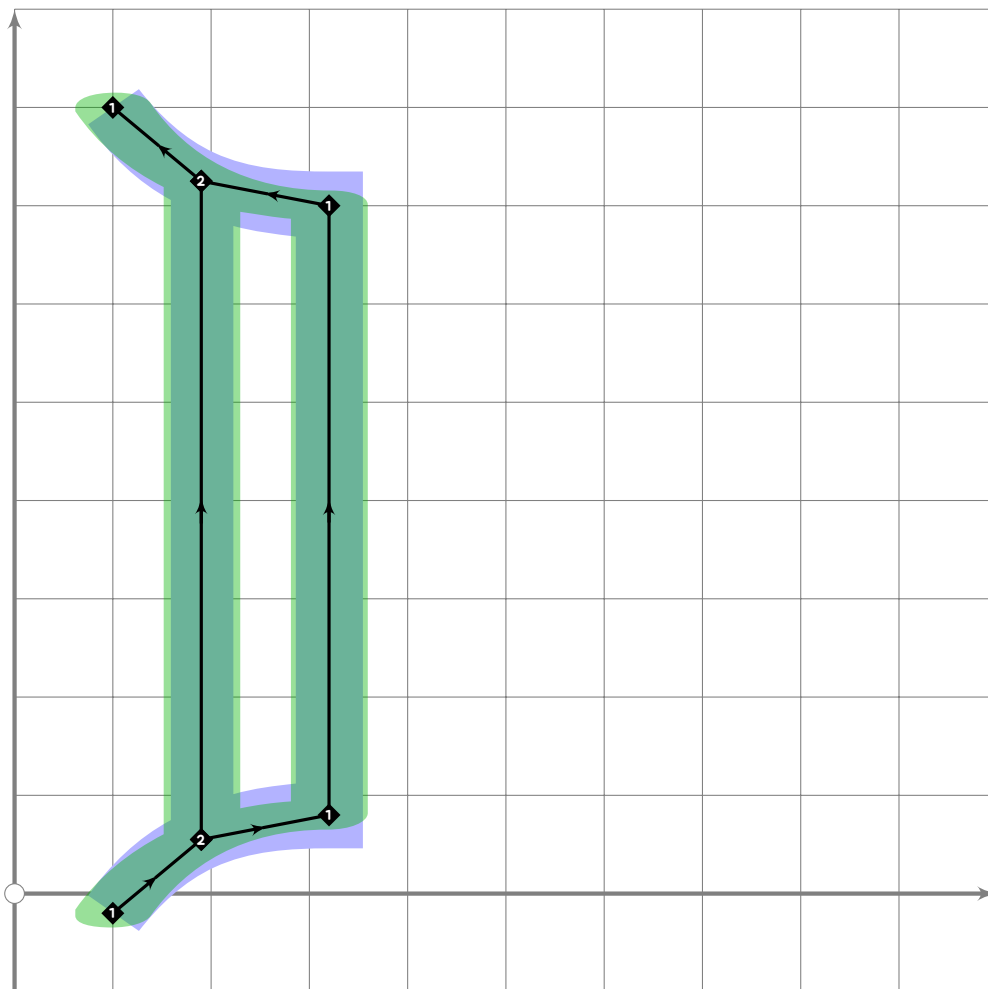
```



```

284 begintsuglyph("uni3018";24);
285   push_stroke(bracket1,
286     (1,7,1,7)-(1,7,1,7)-(1,7,1,7)-(1,7,1,7)-(1,7,1,7)-(1,7,1,7));
287   set_bosize(0,90);
288   set_botip(0,2,1);
289   set_botip(0,3,1);
290
291   push_stroke(bracket2,
292     (1,7,1,7)-(1,7,1,7));
293   set_bosize(0,90);
294
295   tsu_render;
296 endtsuglyph;

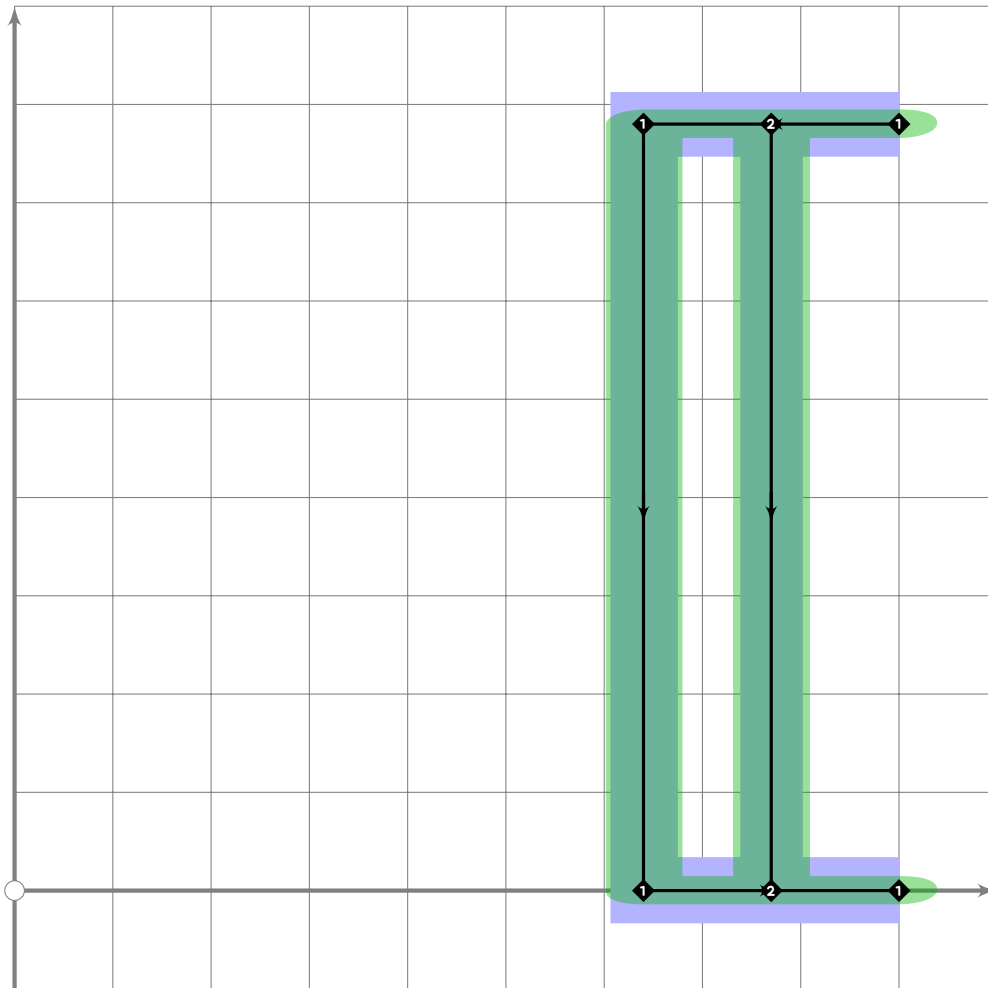
```



```

297 beginsuglyph("uni3019";25);
298   push_stroke(bracket1 rotatedaround (centre_pt,180),
299     (1,7,1,7)–(1,7,1,7)–(1,7,1,7)–(1,7,1,7)–(1,7,1,7)–(1,7,1,7));
300   set_bosize(0,90);
301   set_botip(0,2,1);
302   set_botip(0,3,1);
303
304   push_stroke(bracket2 rotatedaround (centre_pt,180),
305     (1,7,1,7)–(1,7,1,7));
306   set_bosize(0,90);
307
308   tsu_render;
309 endtsuglyph;
310
311 % left and right white square brackets
312 bracket1:=(900,780)–
313   (900–2.6*tsu_punct_size,780)–
314   (900–2.6*tsu_punct_size,0)–
315   (900,0);
316 bracket2:=(point 0.5 of bracket1)–(point 2.5 of bracket1);

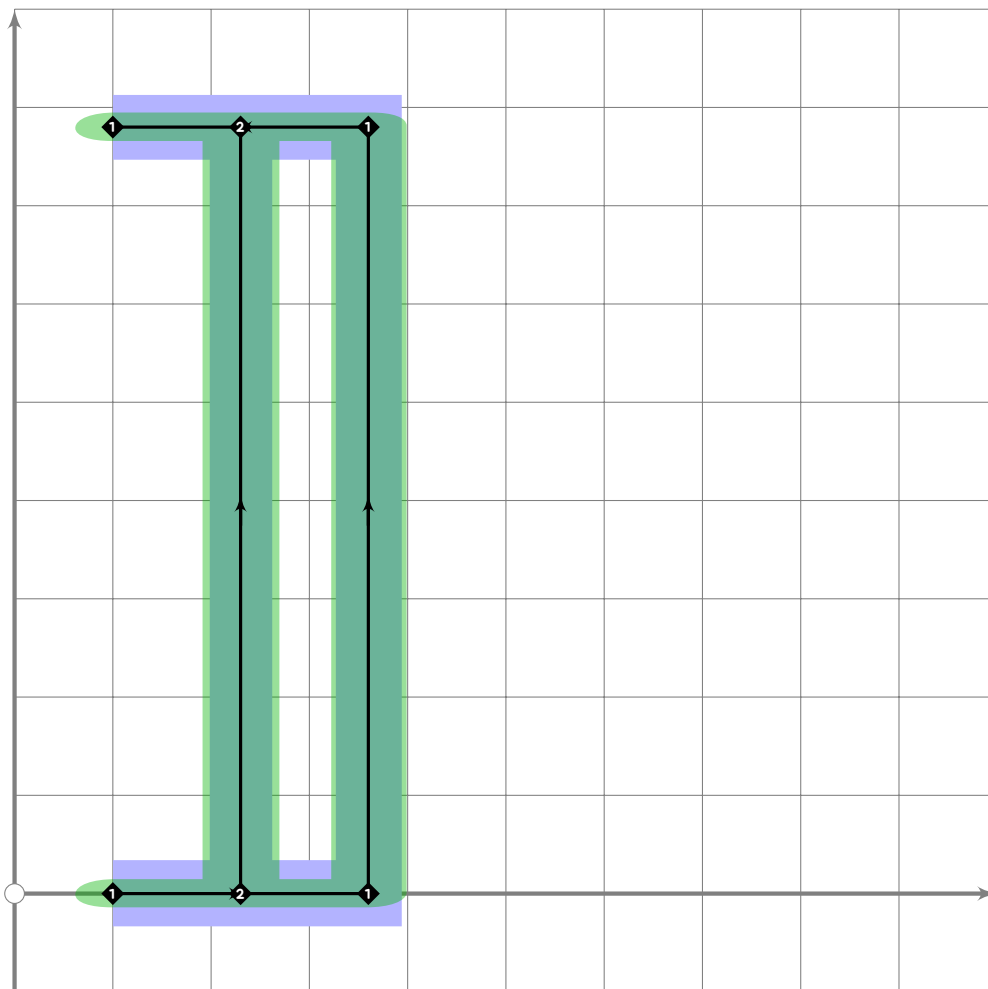
```

```

317 begintsuglyph("uni301A";26);
318   push_stroke(bracket1,
319     (1,7,1,7)–(1,7,1,7)–(1,7,1,7)–(1,7,1,7));
320   set_bosize(0,90);
321   set_botip(0,1,1);
322   set_botip(0,2,1);
323
324   push_stroke(bracket2,
325     (1,7,1,7)–(1,7,1,7));
326   set_bosize(0,90);
327
328   tsu_render;
329 endtsuglyph;

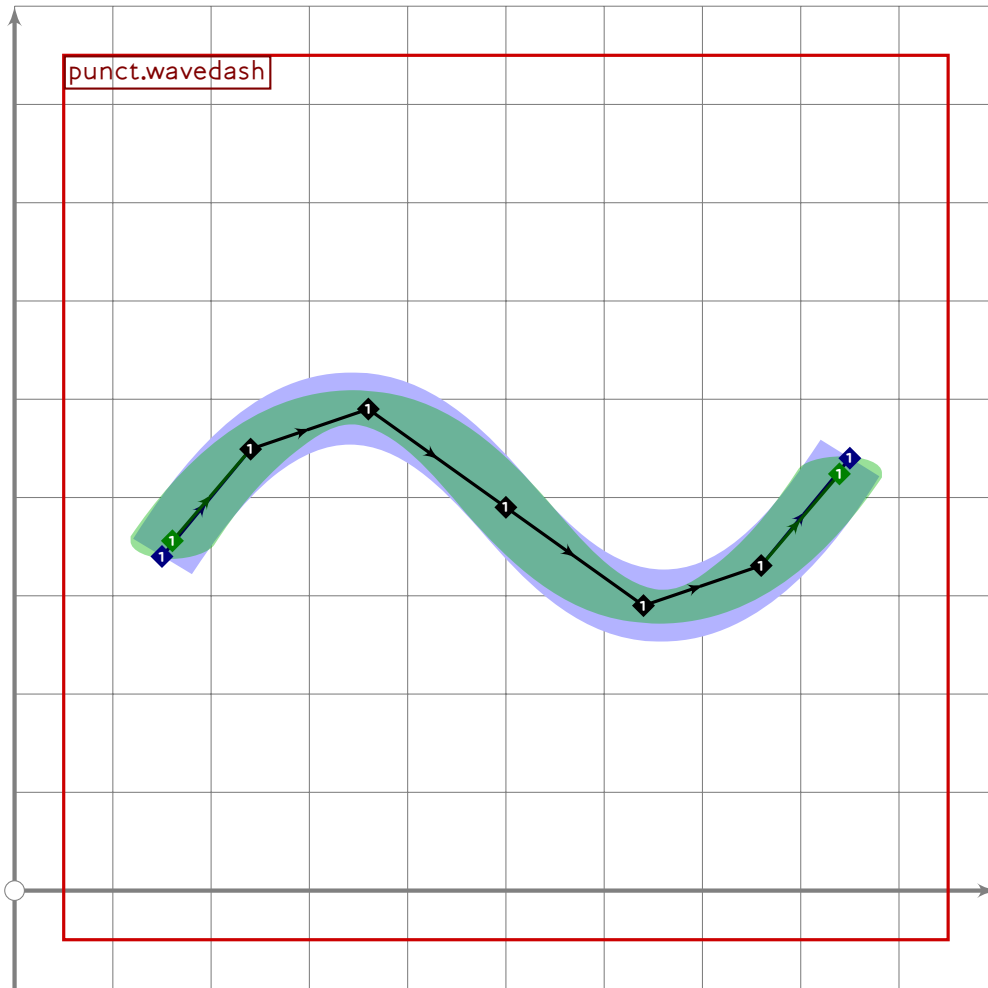
```



```

330 beginsuglyph("uni301B";27);
331   push_stroke(bracket1 rotatedaround (centre_pt,180),
332     (1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7));
333   set_bosize(0,90);
334   set_botip(0,1,1);
335   set_botip(0,2,1);
336
337   push_stroke(bracket2 rotatedaround (centre_pt,180),
338     (1.7,1.7)-(1.7,1.7));
339   set_bosize(0,90);
340
341   tsu_render;
342 endtsuglyph;
343

```



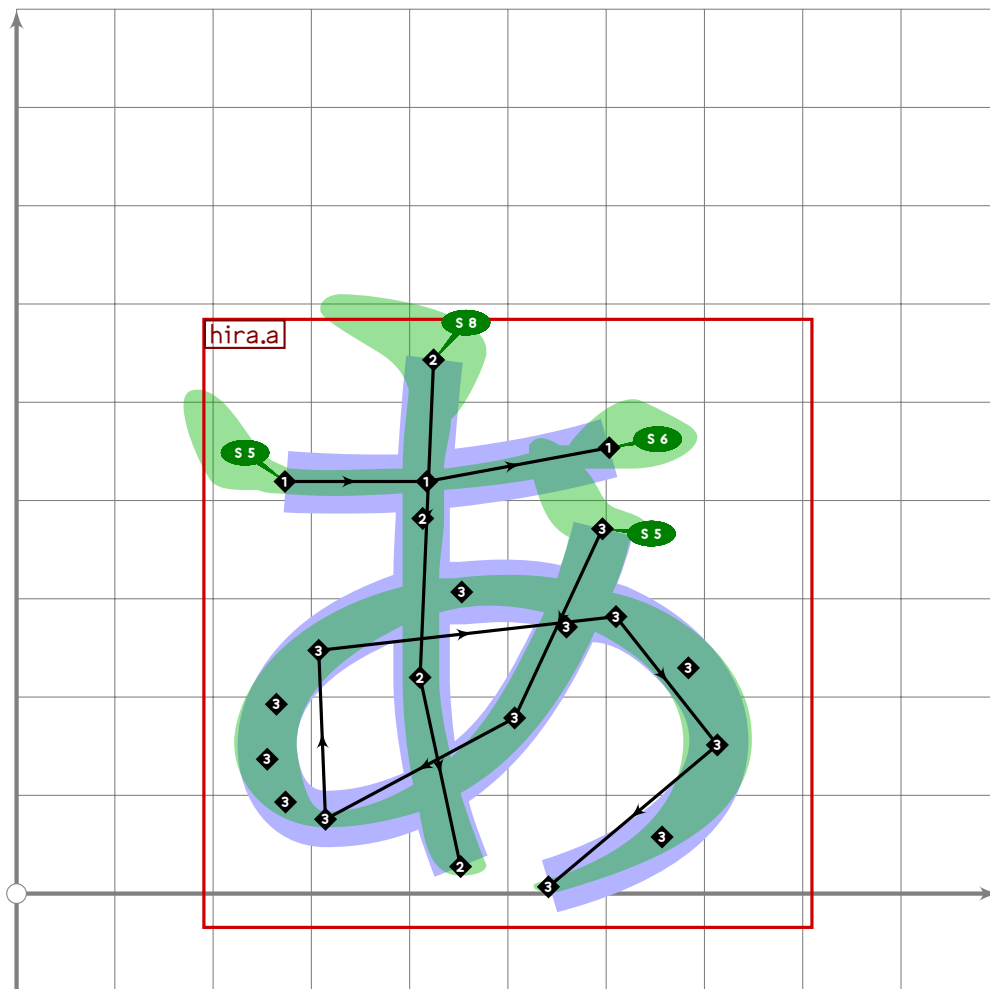
```

344 % "wave dash"
345 begintsuglyph("uni301C";28);
346   punct.wavedash;
347   bo_serif.a0:=5;
348   bo_serif.a6:=8;
349   tsu_render;
350 endtsuglyph;
351
352
353
```

Hiragana

```

354 % HIRAGANA
355
```

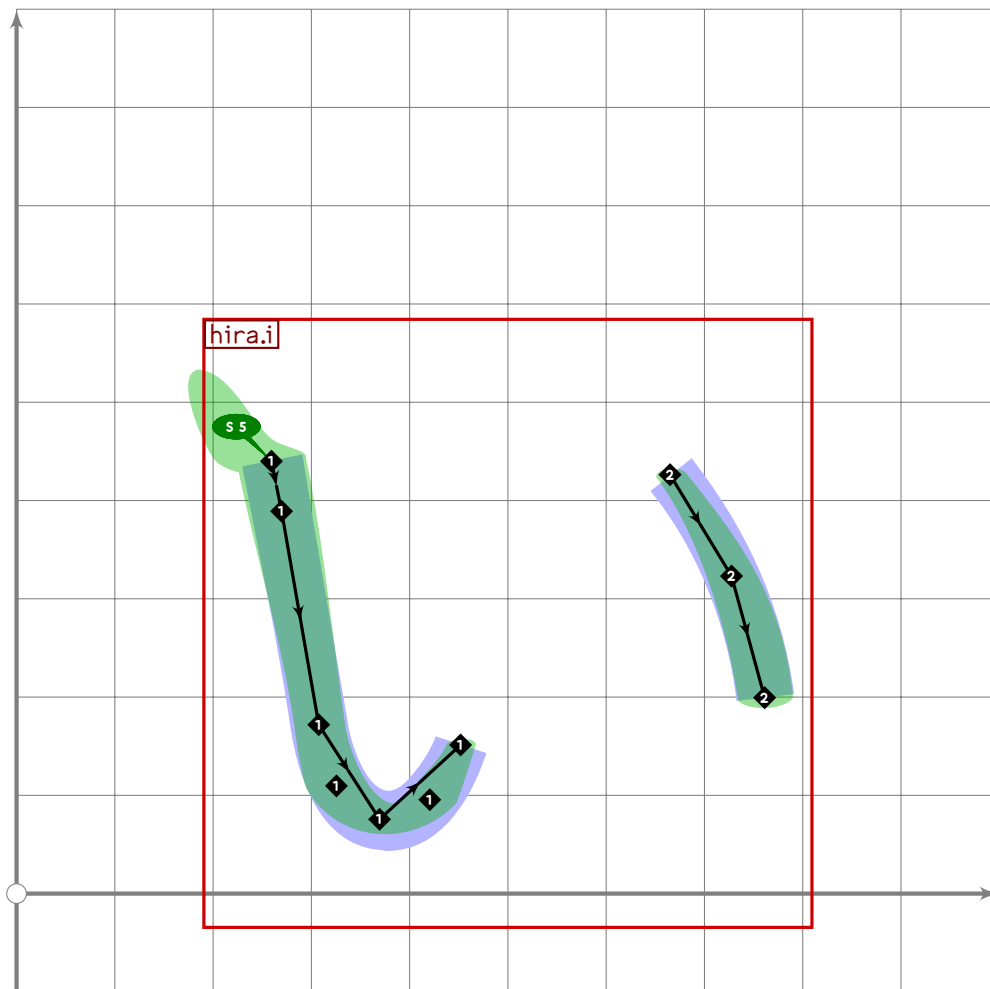


```

356 % hiragana "small a"
357 begintsuglyph("uni3041",65);
358   tsu_xform(tsu_xf.smallkana)(hira.a);
359   tsu_render;
360 endtsuglyph;
361
362 % hiragana "a"
363 begintsuglyph("uni3042",66);
364   hira.a;
365   tsu_render;
366 endtsuglyph;
367

```

[see page 146]

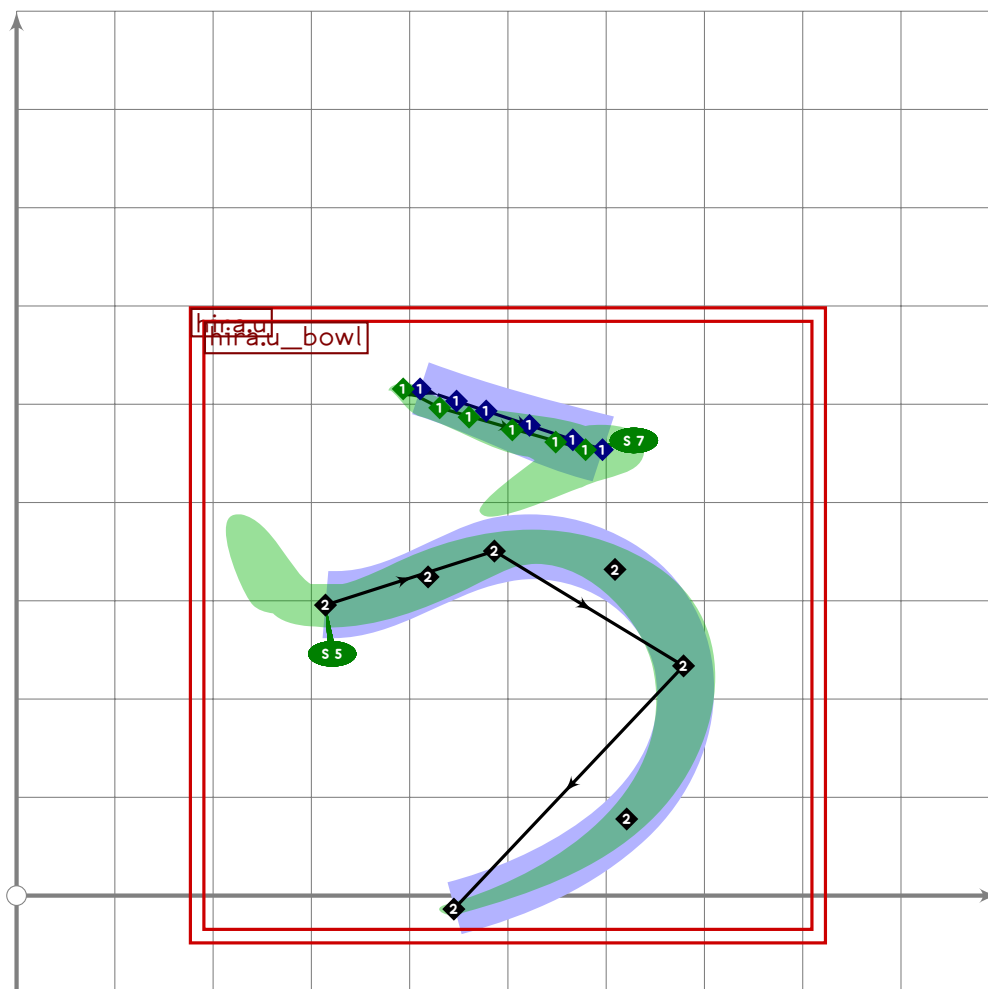


```

368 % hiragana "small i"
369 begintsuglyph("uni3043",67);
370 tsu_xform(tsu_xf.smallkana)(hira.i);
371 tsu_render;
372 endtsuglyph;
373
374 % hiragana "i"
375 begintsuglyph("uni3044",68);
376 hira.i;
377 tsu_render;
378 endtsuglyph;
379

```

[see page 147]

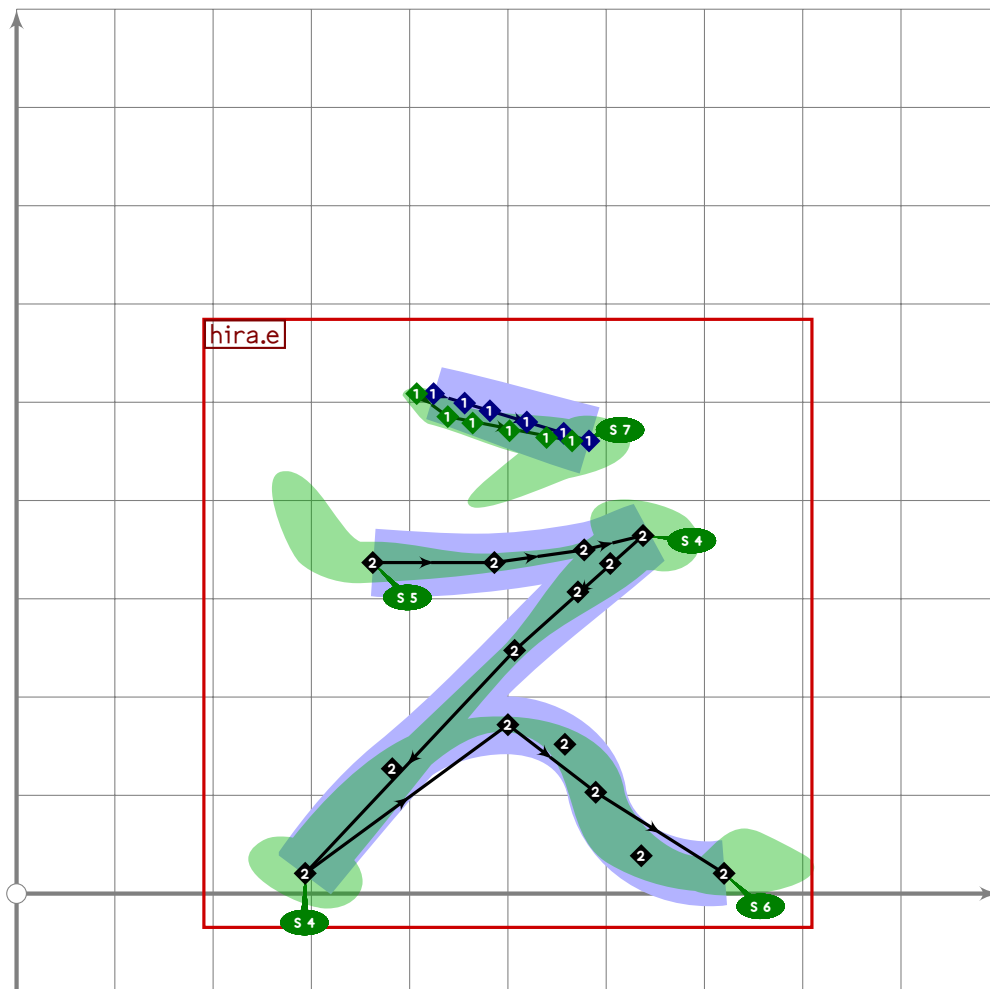


```

380 % hiragana "small u"
381 begintsuglyph("uni3045";69);
382   tsu_xform(tsu_xf.smallkana)(hira.u);
383   tsu_render;
384 endtsuglyph;
385
386 % hiragana "u"
387 begintsuglyph("uni3046";70);
388   hira.u;
389   tsu_render;
390 endtsuglyph;
391

```

[see page 148]

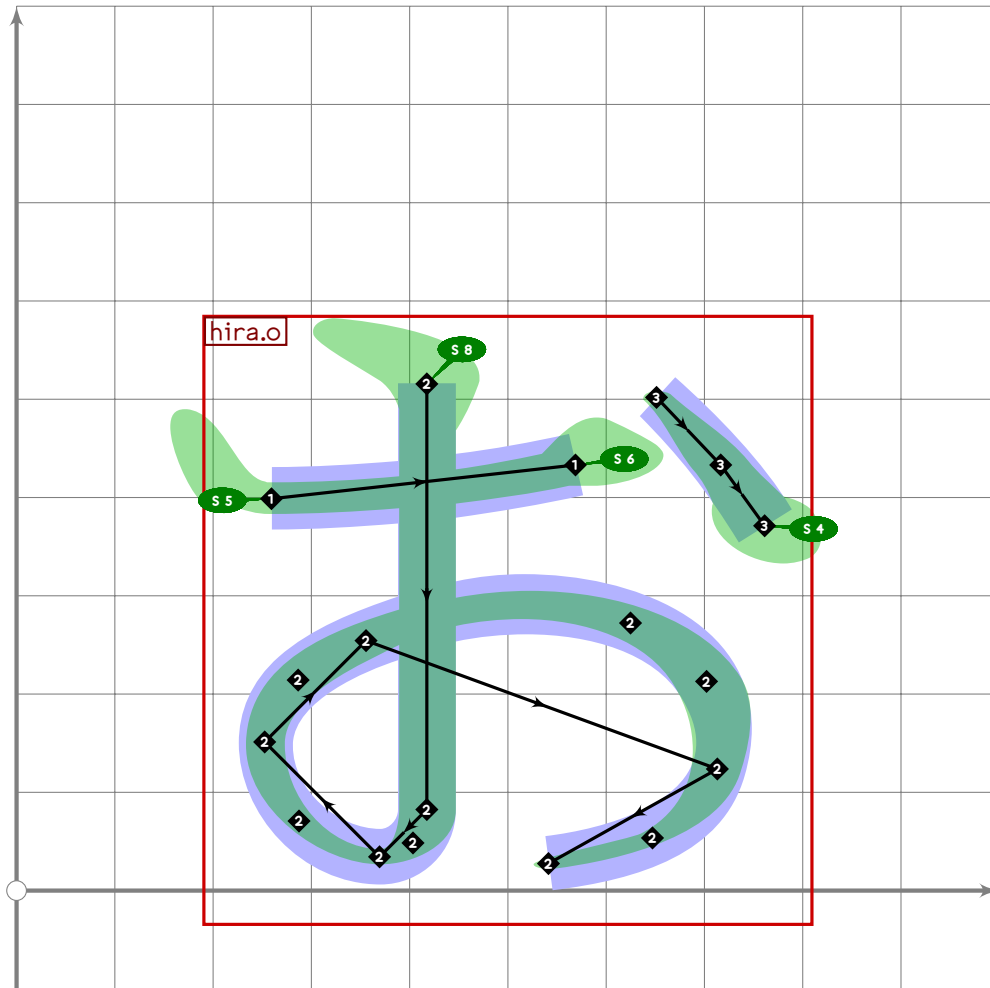


```

392 % hiragana "small e"
393 begintsuglyph("uni3047";71);
394 tsu_xform(tsu_xf.smallkana)(hira.e);
395 tsu_render;
396 endtsuglyph;
397
398 % hiragana "e"
399 begintsuglyph("uni3048";72);
400 hira.e;
401 tsu_render;
402 endtsuglyph;
403

```

[see page 149]



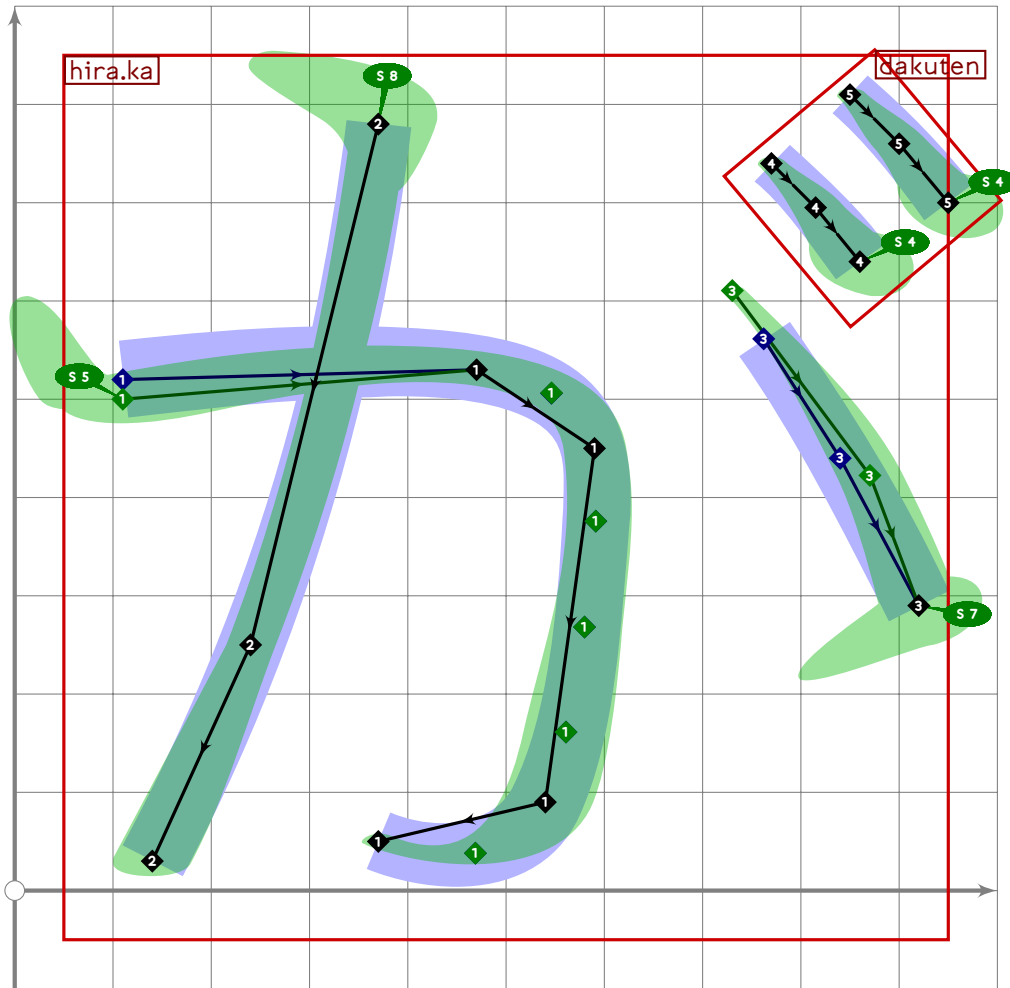
```

404 % hiragana "small o"
405 begintsuglyph("uni3049";73);
406 tsu_xform(tsu_xf.smallkana)(hira.o);
407 tsu_render;
408 endtsuglyph;
409
410 % hiragana "o"
411 begintsuglyph("uni304A";74);
412 hira.o;
413 tsu_render;
414 endtsuglyph;
415
416 % hiragana "ka"
417 begintsuglyph("uni304B";75);
418 hira.ka;
419 tsu_render;
420 endtsuglyph;
421

```

[see page 150]

[see page 151]

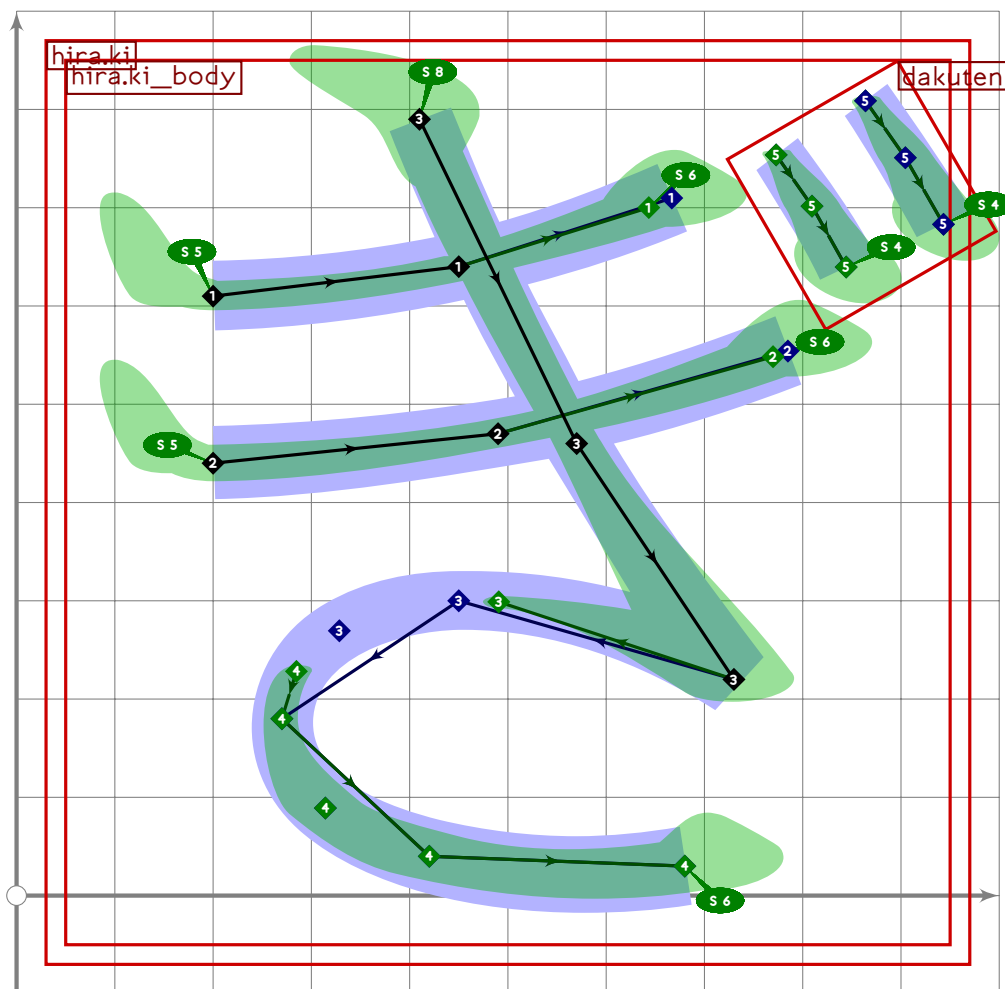


```

422 % hiragana "ga"
423 begintsuglyph("uni304C";76);
424   hira.ka;
425   dakuten(identity shifted (850,730));
426   tsu_render;
427 endtsuglyph;
428
429 % hiragana "ki"
430 begintsuglyph("uni304D";77);
431   hira.ki;
432   tsu_render;
433 endtsuglyph;
434

```

[see page 153]

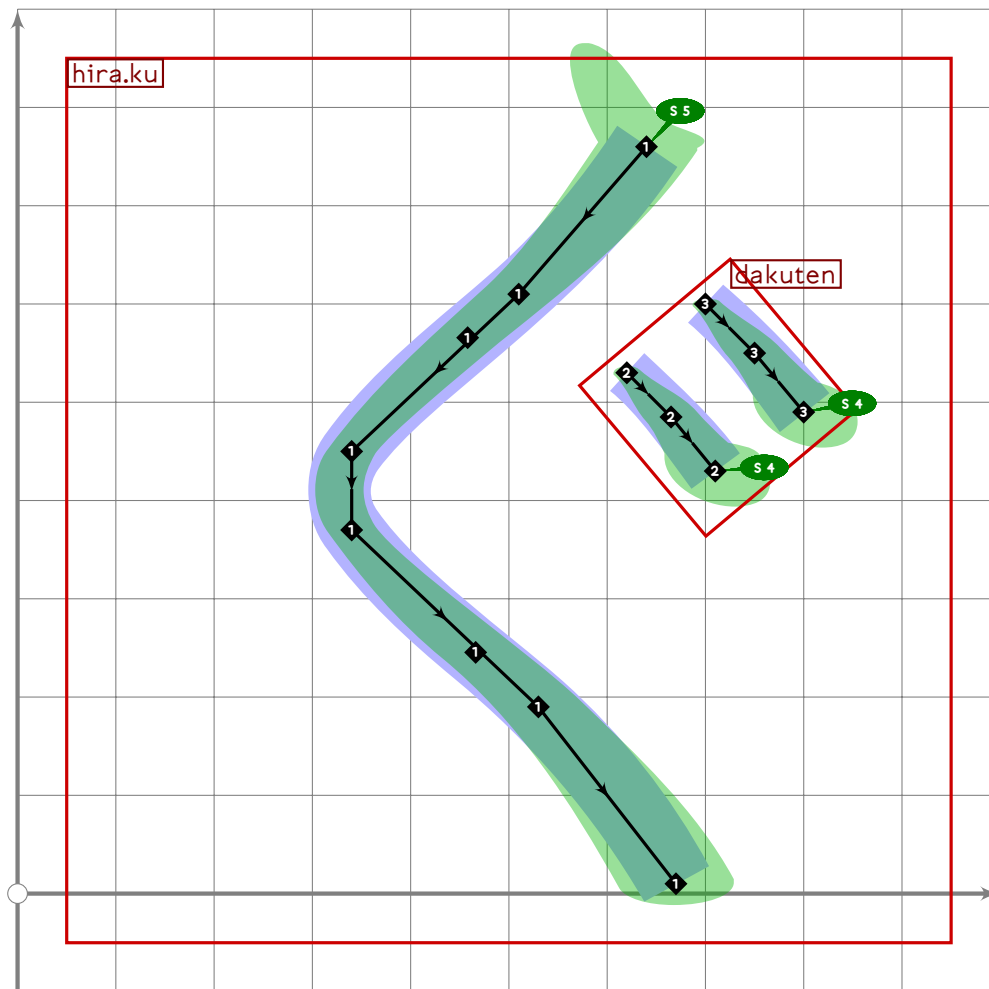


```

435 % hiragana "gi"
436 begintsuglyph("uni304E";78);
437 hira.ki;
438 replace_strokep(-2,subpath (0,1,9-0.1*mincho) of oldp);
439 replace_strokep(-1,subpath (0,1,95-0.05*mincho) of oldp);
440 dakuten(identity rotated -10 shifted (850,730));
441 tsu_render;
442 endtsuglyph;
443
444 % hiragana "ku"
445 begintsuglyph("uni304F";79);
446 hira.ku;
447 tsu_render;
448 endtsuglyph;
449

```

[see page 153]

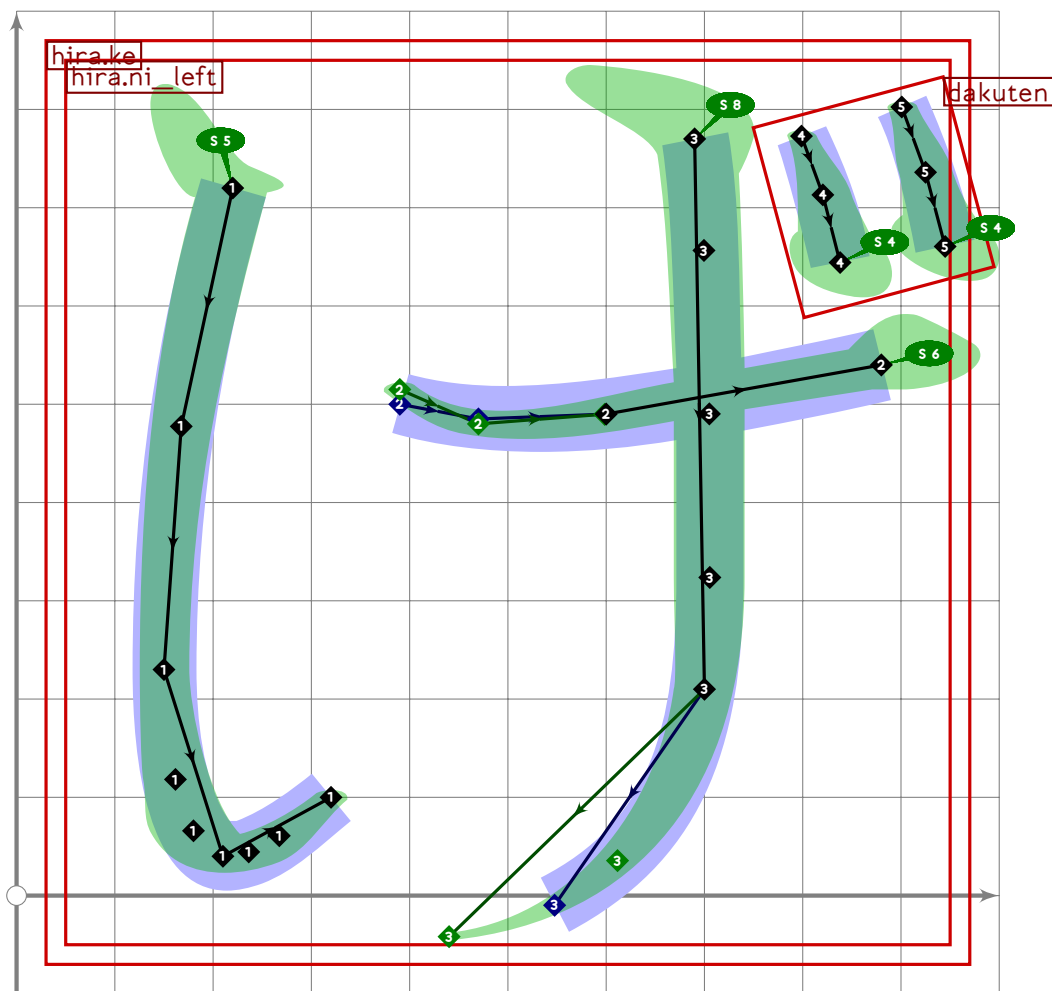


```

450 % hiragana "gu"
451 begintsuglyph("uni3050";80);
452 hira.ku;
453 dakuten(identity shifted (700,520));
454 tsu_render;
455 endtsuglyph;
456
457 % hiragana "ke"
458 begintsuglyph("uni3051";81);
459 hira.ke;
460 tsu_render;
461 endtsuglyph;
462

```

[see page 154]

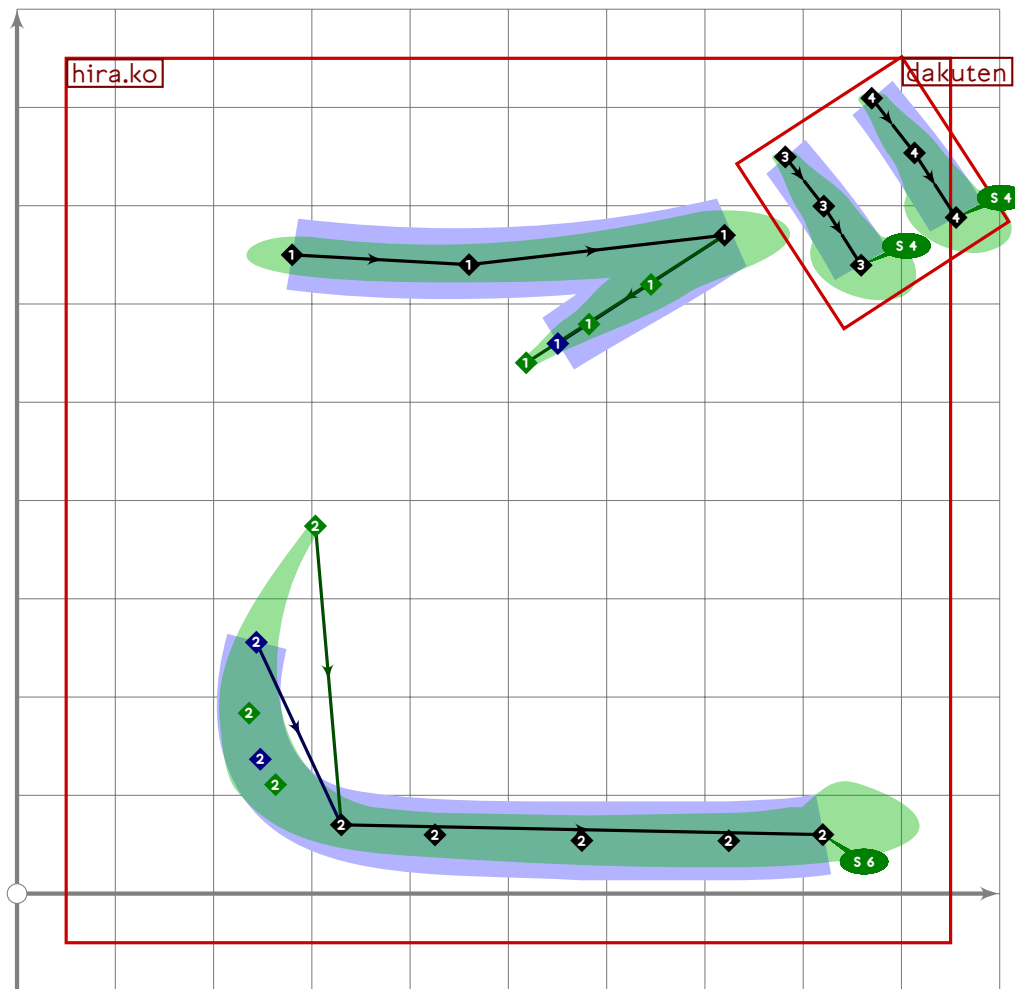


```

463 % hiragana "ge"
464 begintsuglyph("uni3052";82);
465   hira.ke;
466   dakuten(identity rotated -25 shifted (867,730));
467   tsu_render;
468 endtsuglyph;
469
470 % hiragana "ko"
471 begintsuglyph("uni3053";83);
472   hira.ko;
473   tsu_render;
474 endtsuglyph;
475

```

[see page 155]

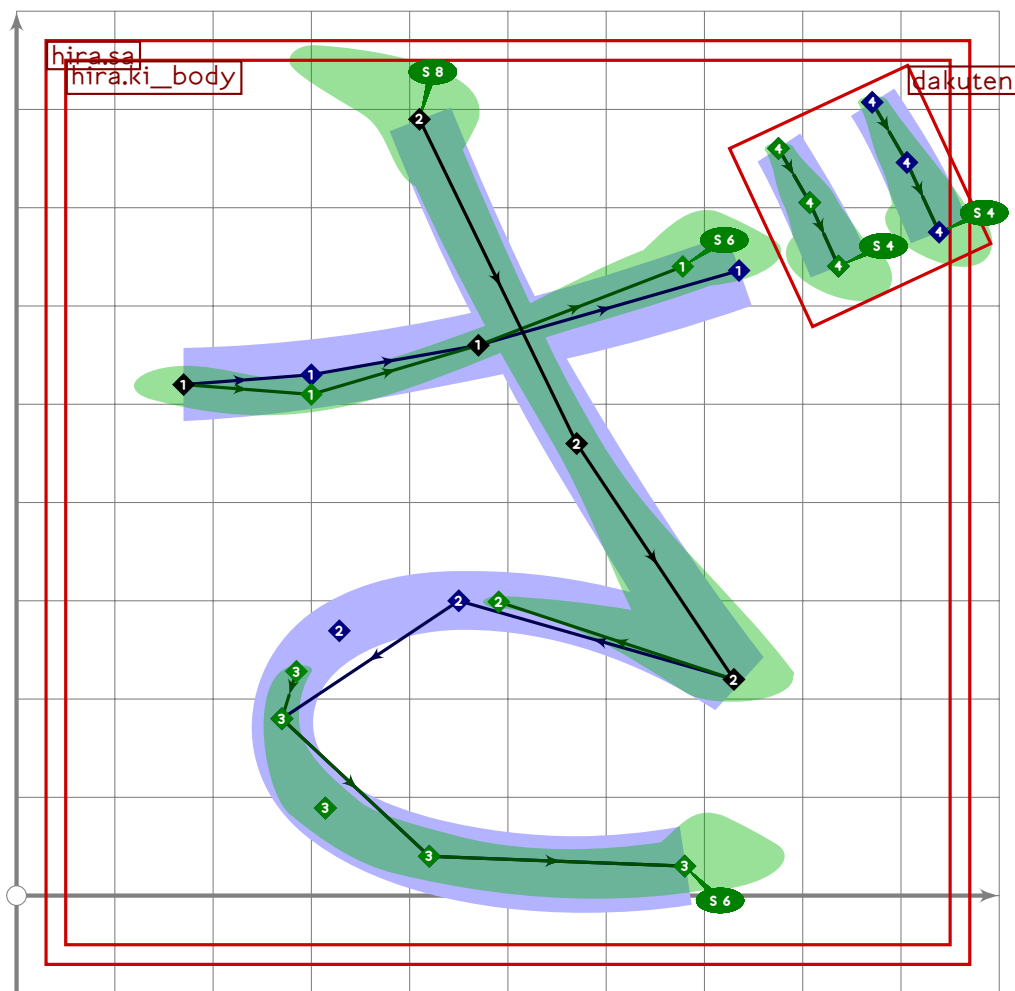


```

476 % hiragana "go"
477 begintsuglyph("uni3054";84);
478 hira.ko;
479 dakuten(identity rotated -7 shifted (860,730));
480 tsu_render;
481 endtsuglyph;
482
483 % hiragana "sa"
484 begintsuglyph("uni3055";85);
485 hira.sa;
486 tsu_render;
487 endtsuglyph;
488

```

[see page 156]

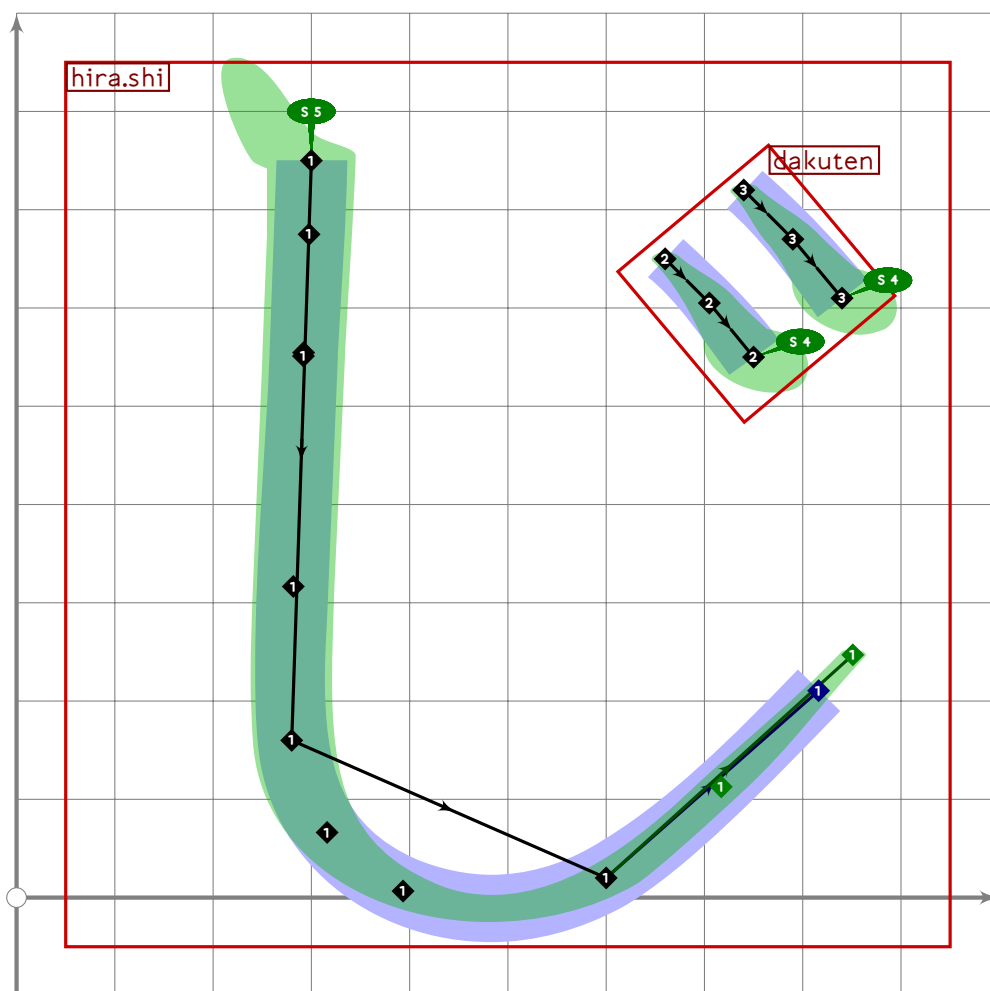


```

489 % hiragana "za"
490 begintsuglyph("uni3056";86);
491 hira.sa;
492 replace_stroke(-1,subpath (0,2.8) of oldp);
493 dakuten(identity rotated -15 shifted (850,730));
494 tsu_render;
495 endtsuglyph;
496
497 % hiragana "shi"
498 begintsuglyph("uni3057";87);
499 hira.shi;
500 tsu_render;
501 endtsuglyph;
502

```

[see page 157]

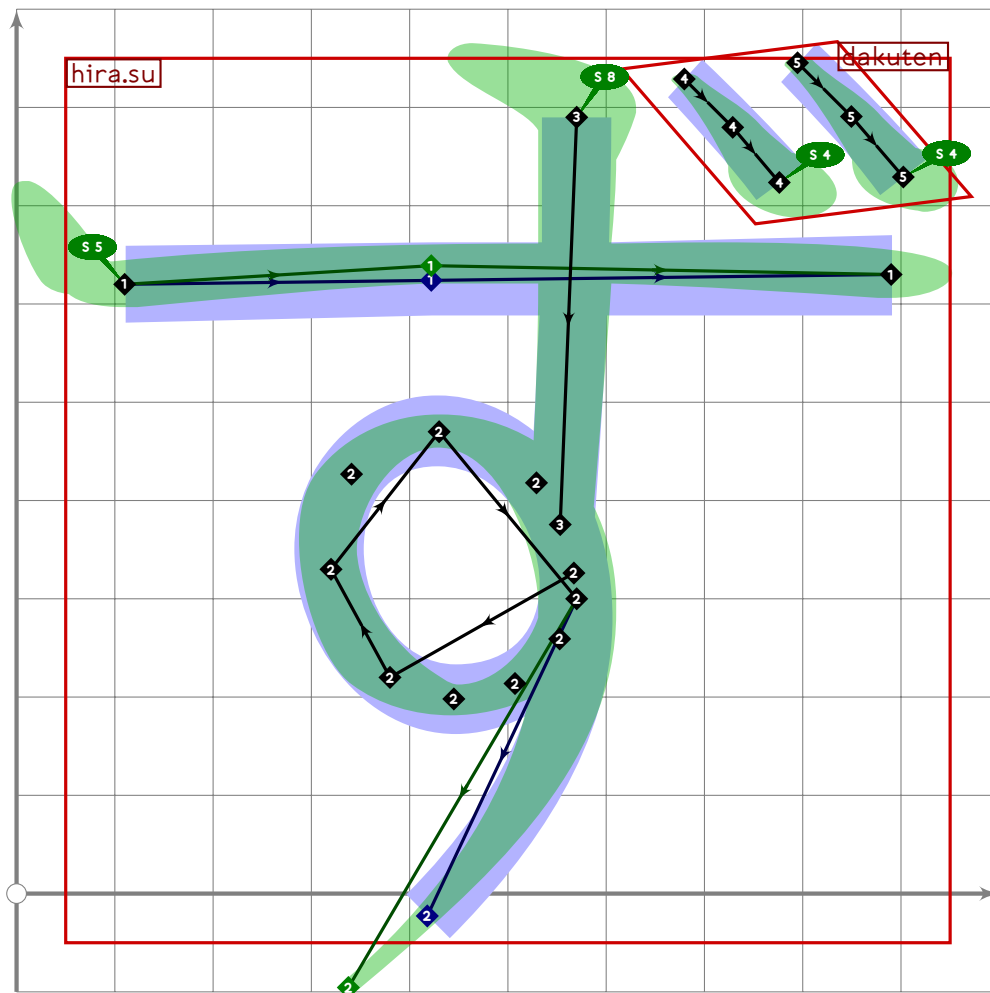


```

503 % hiragana "ji"
504 begintsuglyph("uni3058";88);
505   hira.shi;
506   dakuten(identity shifted (740,640));
507   tsu_render;
508 endtsuglyph;
509
510 % hiragana "su"
511 begintsuglyph("uni3059";89);
512   hira.su;
513   tsu_render;
514 endtsuglyph;
515

```

[see page 158]

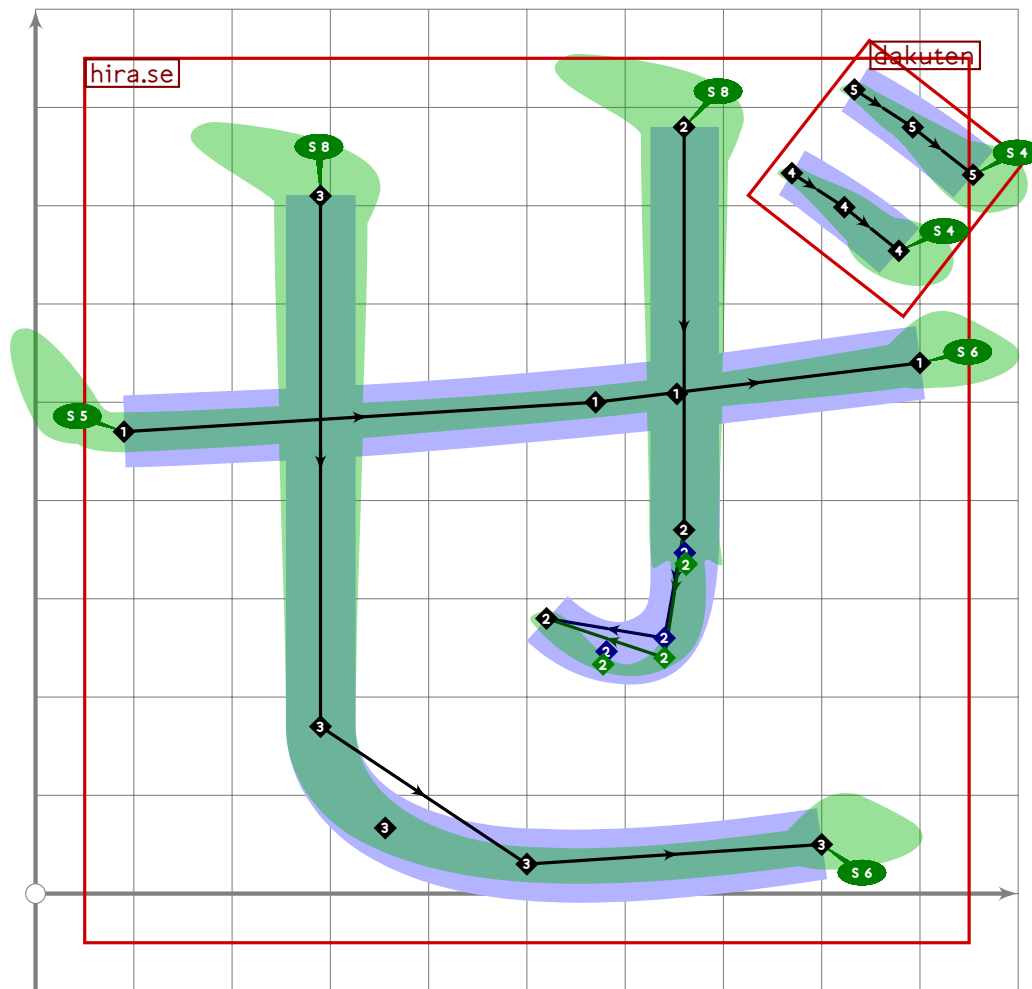


```

516 % hiragana "zu"
517 begintsuglyph("uni305A";90);
518   hira.su;
519   dakuten(identity rotated -30 slanted -0.4 xyscaled (1.2,0.8)
520     shifted (780,790));
521   tsu_render;
522 endtsuglyph;
523
524 % hiragana "se"
525 begintsuglyph("uni305B";91);
526   hira.se;
527   tsu_render;
528 endtsuglyph;
529

```

[see page 159]

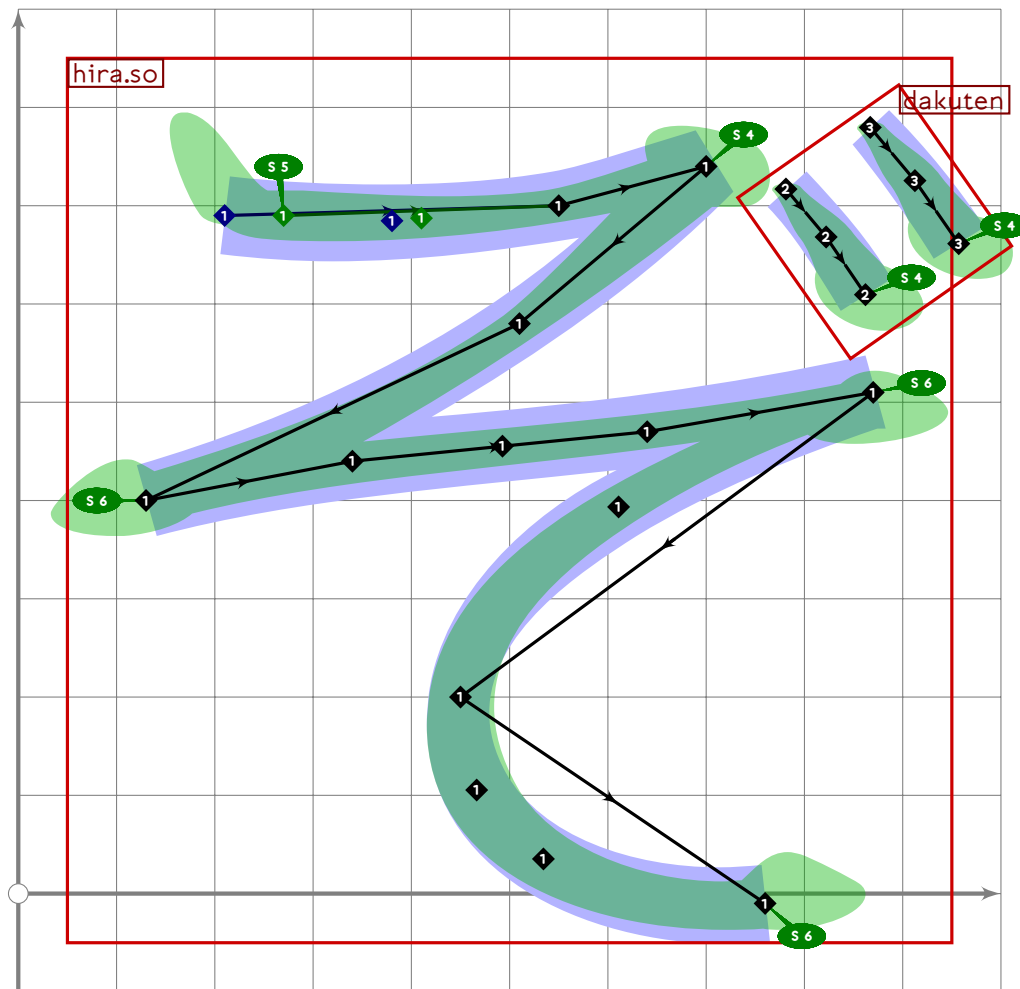


```

530 % hiragana "ze"
531 begintsuglyph("uni305C";92);
532   hira.se;
533   dakuten(identity rotated 12 shifted (850,740));
534   tsu_render;
535 endtsuglyph;
536
537 % hiragana "so"
538 begintsuglyph("uni305D";93);
539   hira.so;
540   tsu_render;
541 endtsuglyph;
542

```

[see page 160]

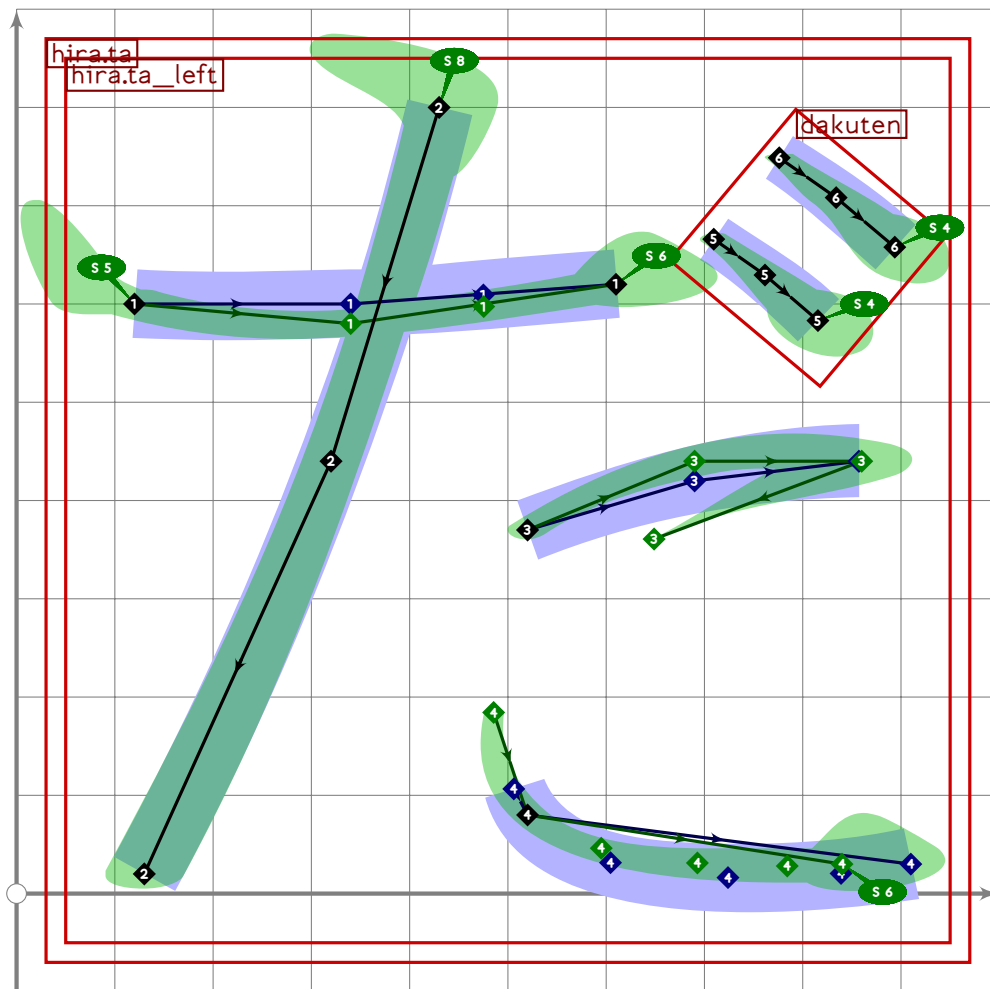


```

543 % hiragana "zo"
544 begintsuglyph("uni305E";94);
545   hira.so;
546   dakuten(identity rotated -5 shifted (860,700));
547   tsu_render;
548 endtsuglyph;
549
550 % hiragana "ta"
551 begintsuglyph("uni305F";95);
552   hira.ta;
553   tsu_render;
554 endtsuglyph;
555

```

[see page 162]

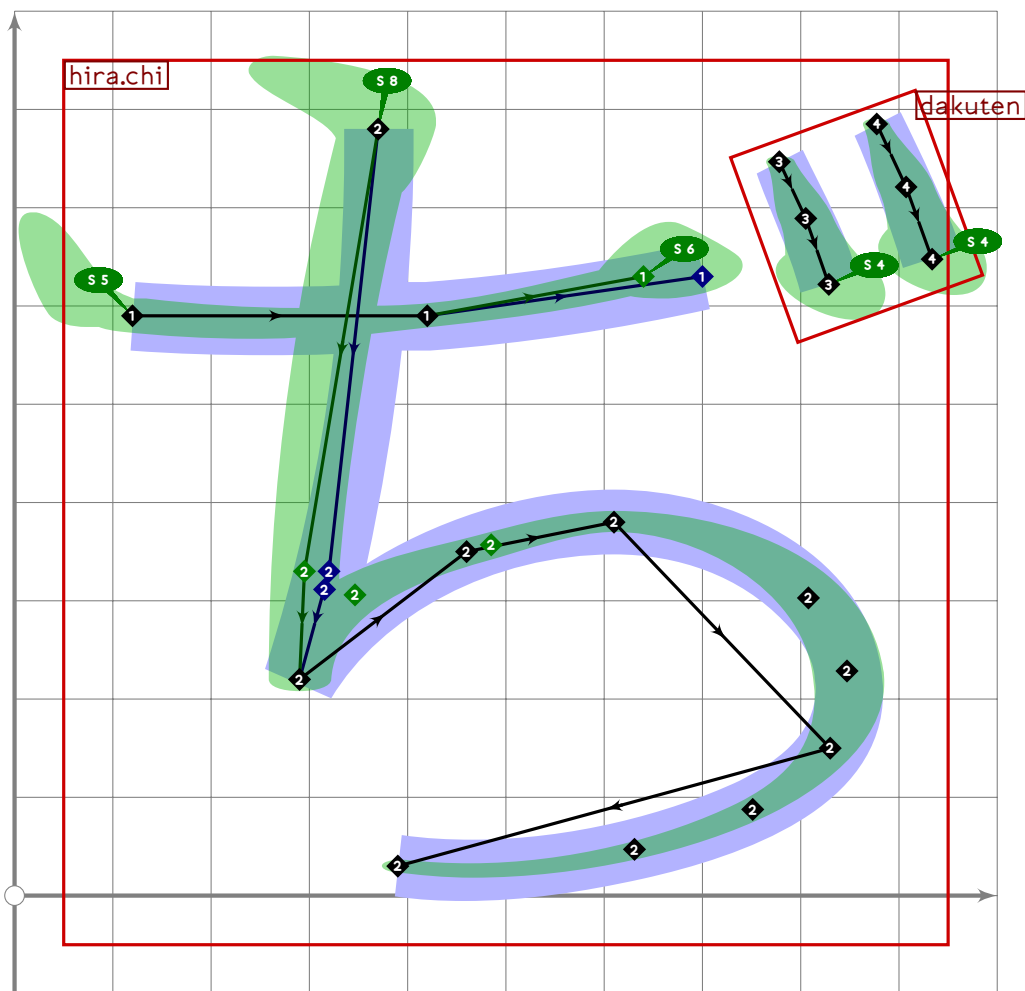


```

556 % hiragana "da"
557 begintsuglyph("uni3060";96);
558   hira.ta;
559   dakuten(identity rotated 10 shifted (790,670));
560   tsu_render;
561 endtsuglyph;
562
563 % hiragana "chi"
564 begintsuglyph("uni3061";97);
565   hira.chi;
566   tsu_render;
567 endtsuglyph;
568

```

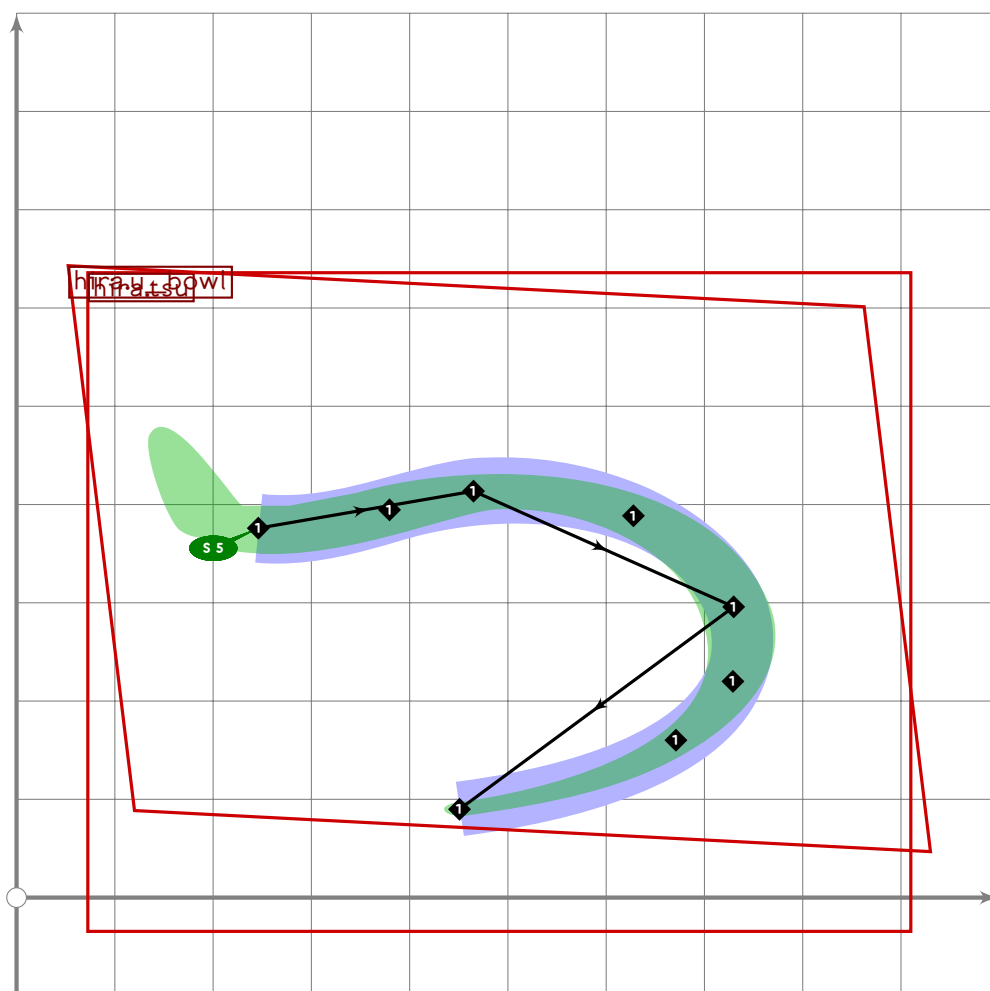
[see page 163]



```

569 % hiragana "dji"
570 begintsuglyph("uni3062";98);
571   hira.chi;
572   dakuten(identity rotated -20 shifted (850,710));
573   tsu_render;
574 endtsuglyph;
575

```

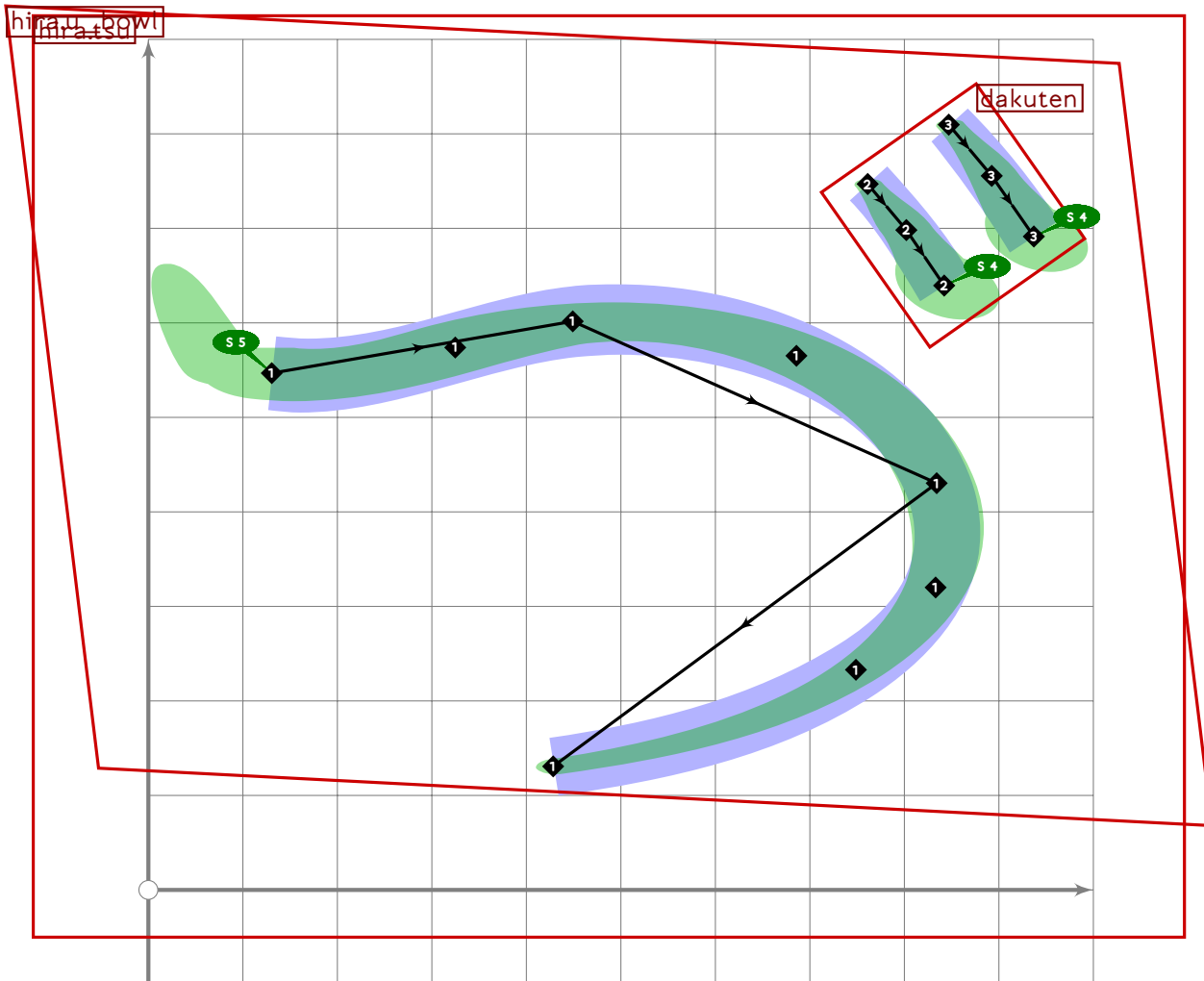


```

576 % hiragana "small tsu"
577 begintsuglyph("uni3063";99);
578   tsu_xform(tsu_xf.smallkana)(hira.tsu);
579   tsu_render;
580 endtsuglyph;
581
582 % hiragana "tsu"
583 begintsuglyph("uni3064";100);
584   hira.tsu;
585   tsu_render;
586 endtsuglyph;
587

```

[see page 163]

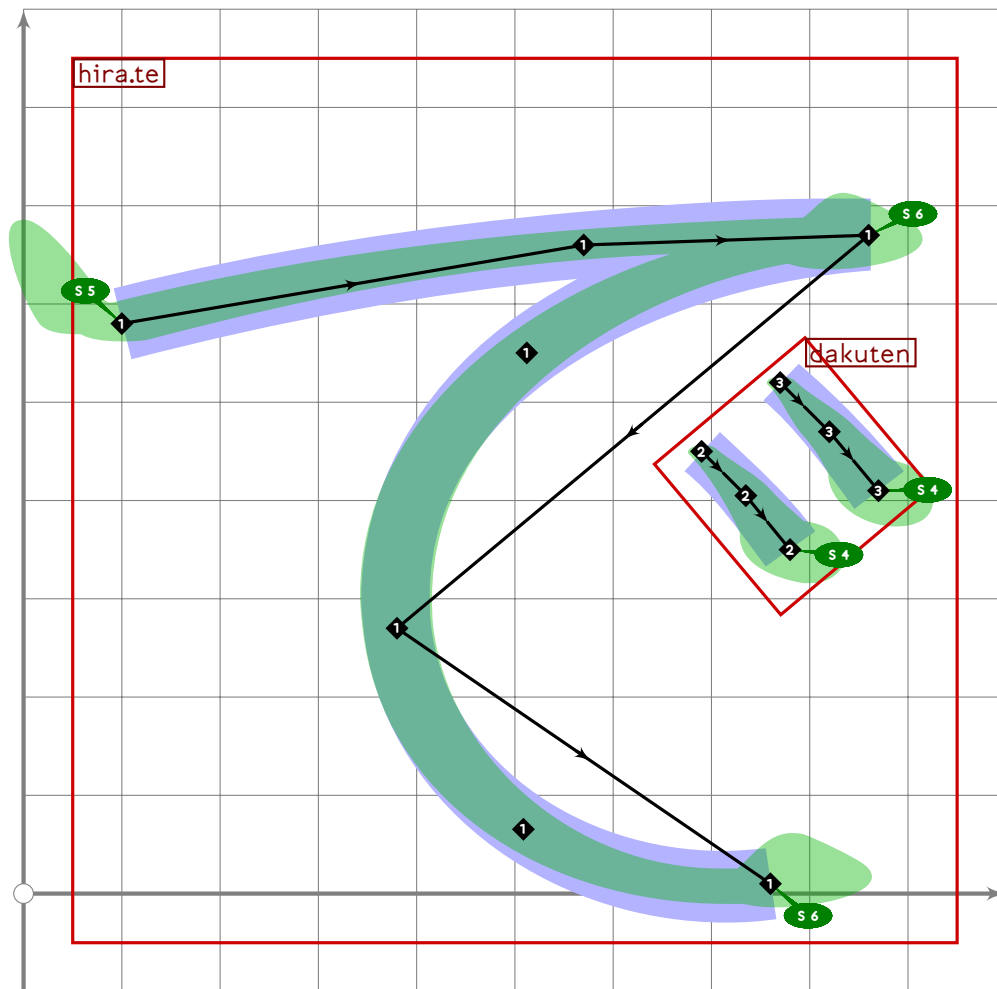


```

588 % hiragana "dzu"
589 begintsuglyph("uni3065";101);
590   hira.tsu;
591   dakuten(identity rotated -5 shifted (840,730));
592   tsu_render;
593 endtsuglyph;
594
595 % hiragana "te"
596 begintsuglyph("uni3066";102);
597   hira.te;
598   tsu_render;
599 endtsuglyph;
600

```

[see page 164]

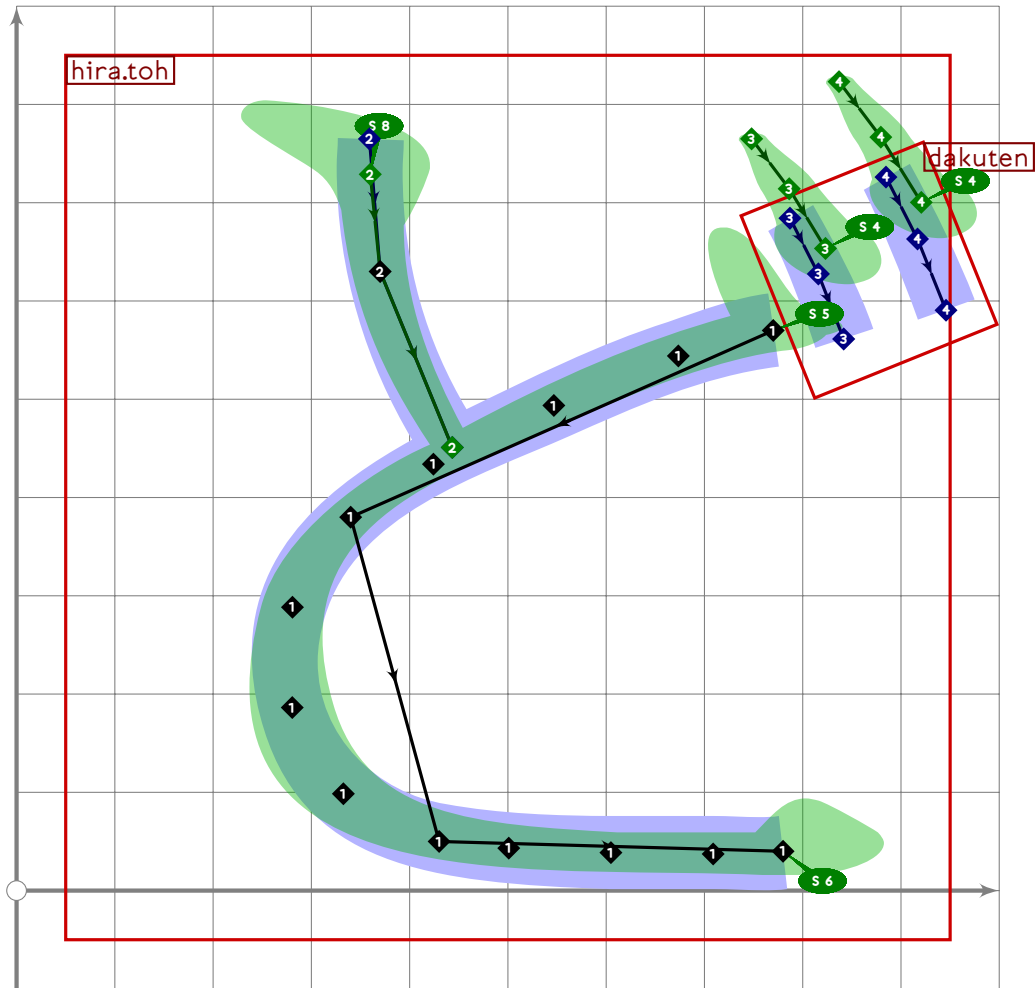


```

601 % hiragana "de"
602 begintsuglyph("uni3067";103);
603   hira.te;
604   dakuten(identity shifted (770,440));
605   tsu_render;
606 endtsuglyph;
607
608 % hiragana "to"
609 begintsuglyph("uni3068";104);
610   hira.toh;
611   tsu_render;
612 endtsuglyph;
613

```

[see page 165]



```

614 % hiragana "do"
615 begintsuglyph("uni3069";105);
616   hira.toh;
617   replace_stroke(0,subpath (0.1,infinity) of oldp);
618   dakuten(identity rotated (-18+10*mincho)
619     shifted ((860,650) shifted (100*mincho*(dir 110))));
620   tsu_render;
621 endtsuglyph;
622
623 % hiragana "na"
624 begintsuglyph("uni306A";106);
625   hira.na;
626   tsu_render;
627 endtsuglyph;
628
629 % hiragana "ni"
630 begintsuglyph("uni306B";107);
631   hira.ni;
632   tsu_render;
633 endtsuglyph;
634

```

[see page 166]

[see page 167]

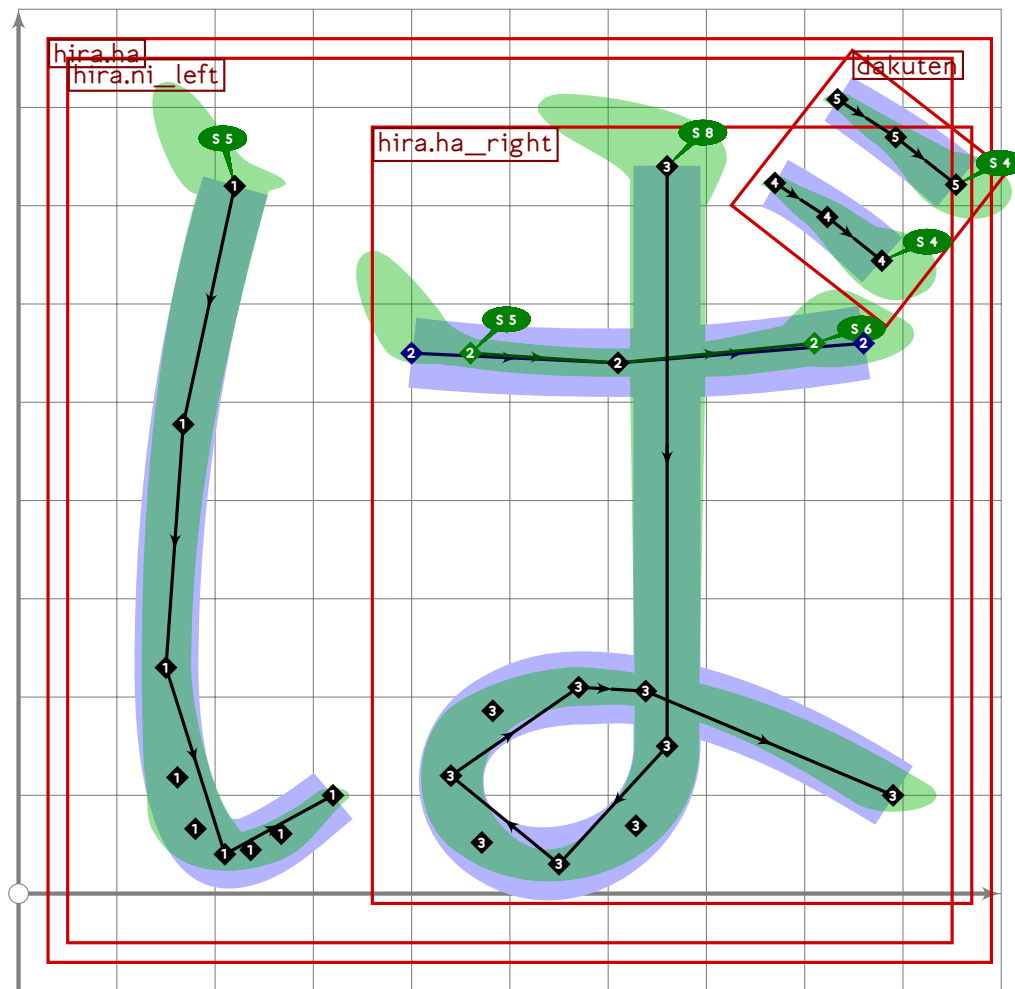

```
635 % hiragana "nu"  
636 begintsuglyph("uni306C";108);  
637 hira.nu;  
638 tsu_render;  
639 endtsuglyph;  
640  
641 % hiragana "ne"  
642 begintsuglyph("uni306D";109);  
643 hira.ne;  
644 tsu_render;  
645 endtsuglyph;  
646  
647 % hiragana "no"  
648 begintsuglyph("uni306E";110);  
649 hira.no;  
650 tsu_render;  
651 endtsuglyph;  
652  
653 % hiragana "ha"  
654 begintsuglyph("uni306F";111);  
655 hira.ha;  
656 tsu_render;  
657 endtsuglyph;  
658
```

[see page 168]

[see page 169]

[see page 170]

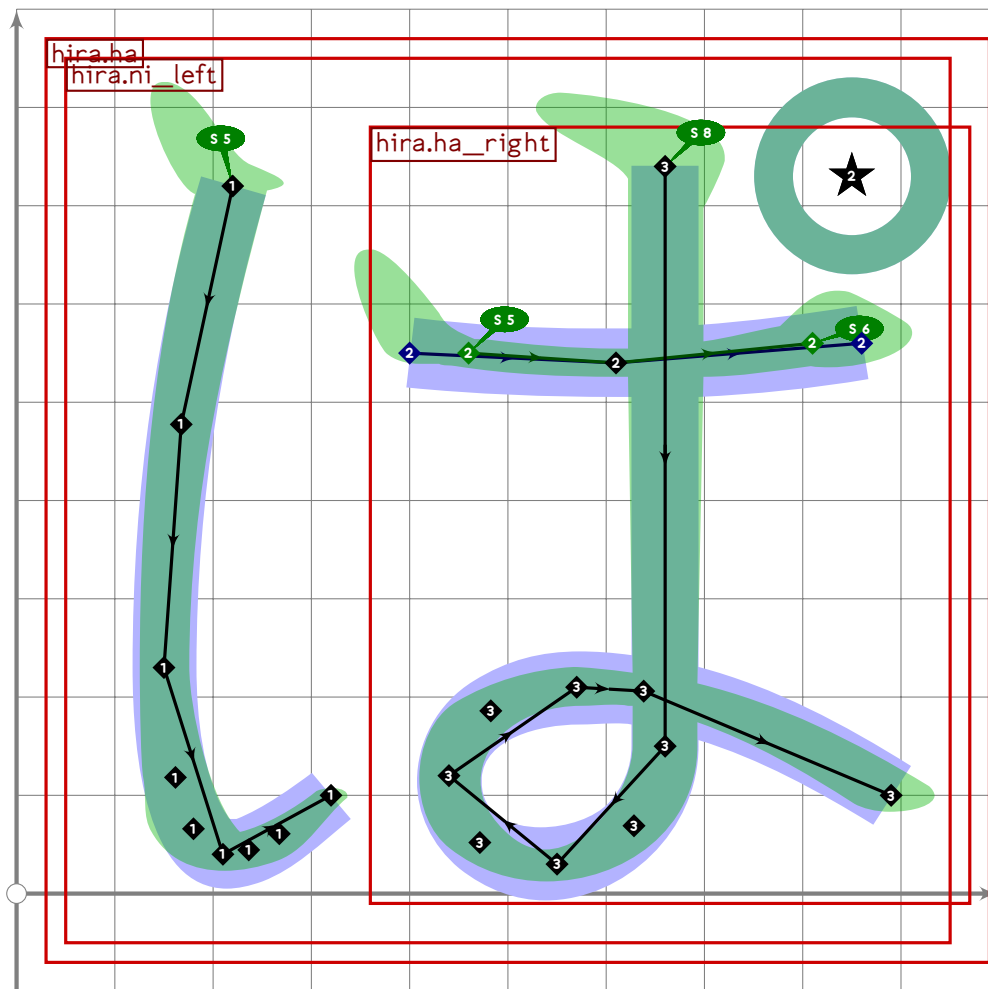
[see page 171]



```

659 % hiragana "ba"
660 begintsuglyph("uni3070";112);
661   hira.ha;
662   dakuten(identity rotated 12 shifted (850,730));
663   tsu_render;
664 endtsuglyph;
665

```

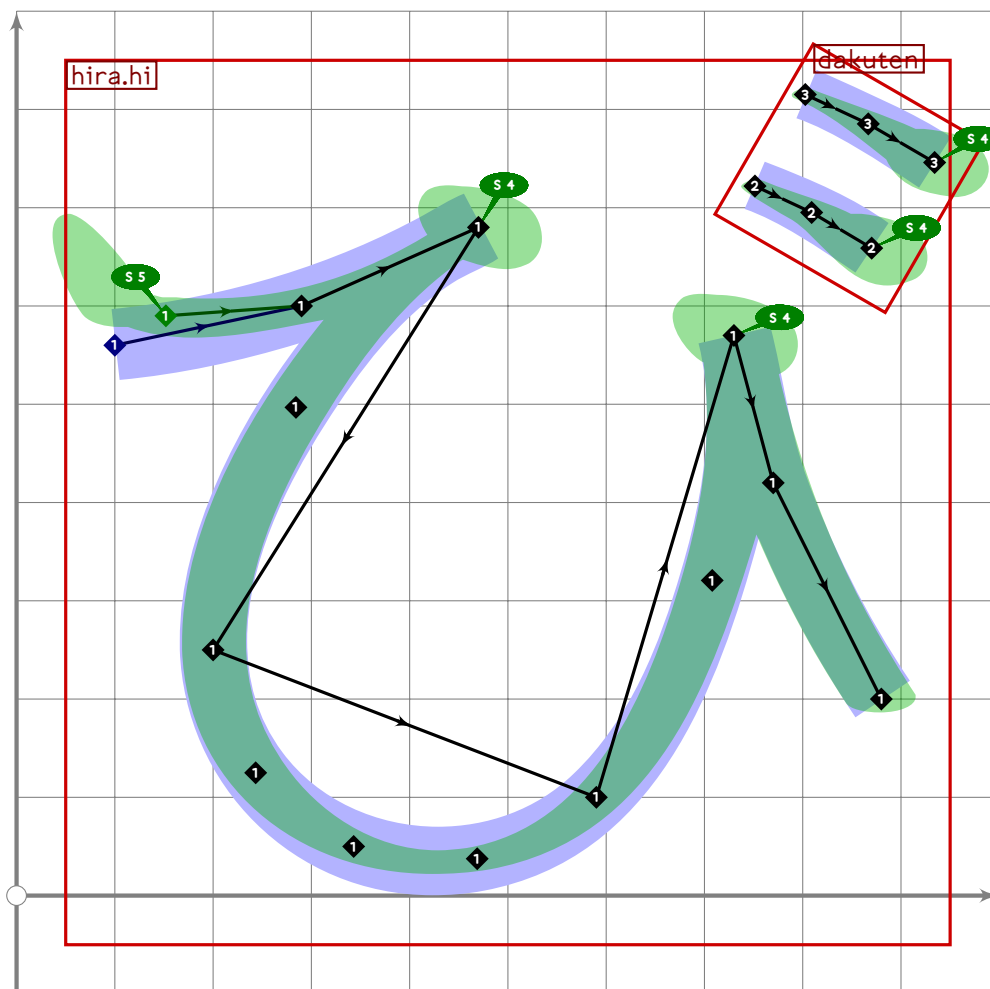


```

666 % hiragana "pa"
667 begintsuglyph("uni3071";113);
668   hira.ha;
669   handakuten((850,730));
670   tsu_render;
671 endtsuglyph;
672
673 % hiragana "hi"
674 begintsuglyph("uni3072";114);
675   hira.hi;
676   tsu_render;
677 endtsuglyph;
678

```

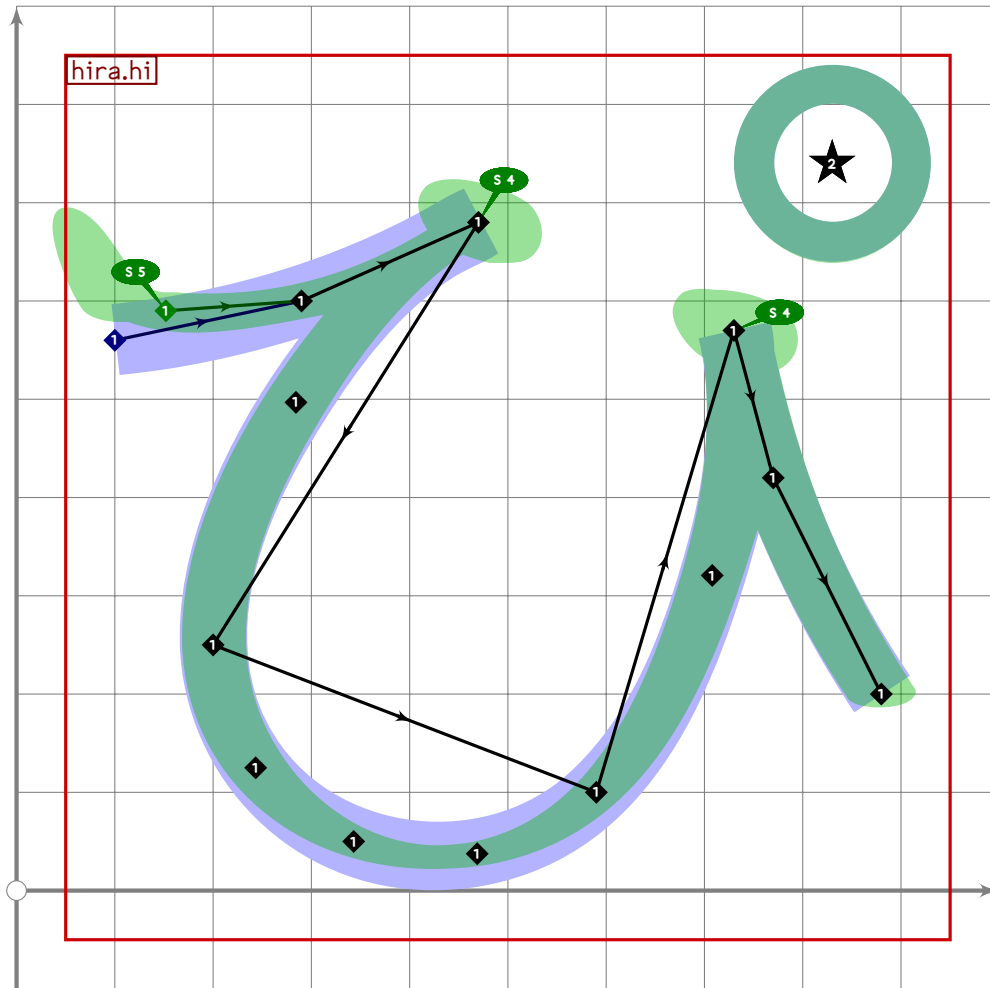
[see page 172]



```

679 % hiragana "bi"
680 begint Suglyph("uni3073",115);
681   hira.hi;
682   dakuten(identity rotated 20 shifted (830,740));
683   tsu_render;
684 endtsuglyph;
685

```

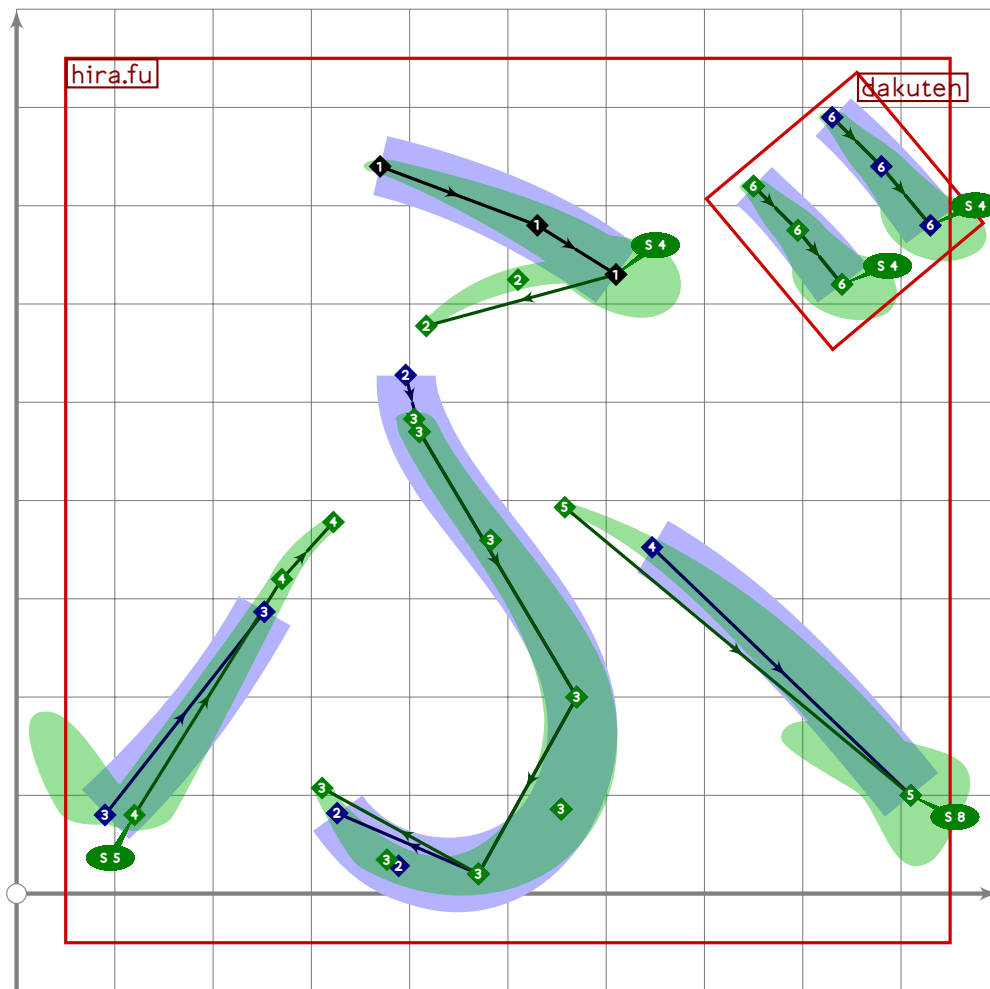


```

686 % hiragana "pi"
687 begintsuglyph("uni3074";116);
688   hira.hi;
689   handakuten((830,740));
690   tsu_render;
691 endtsuglyph;
692
693 % hiragana "fu"
694 begintsuglyph("uni3075";117);
695   hira.fu;
696   tsu_render;
697 endtsuglyph;
698

```

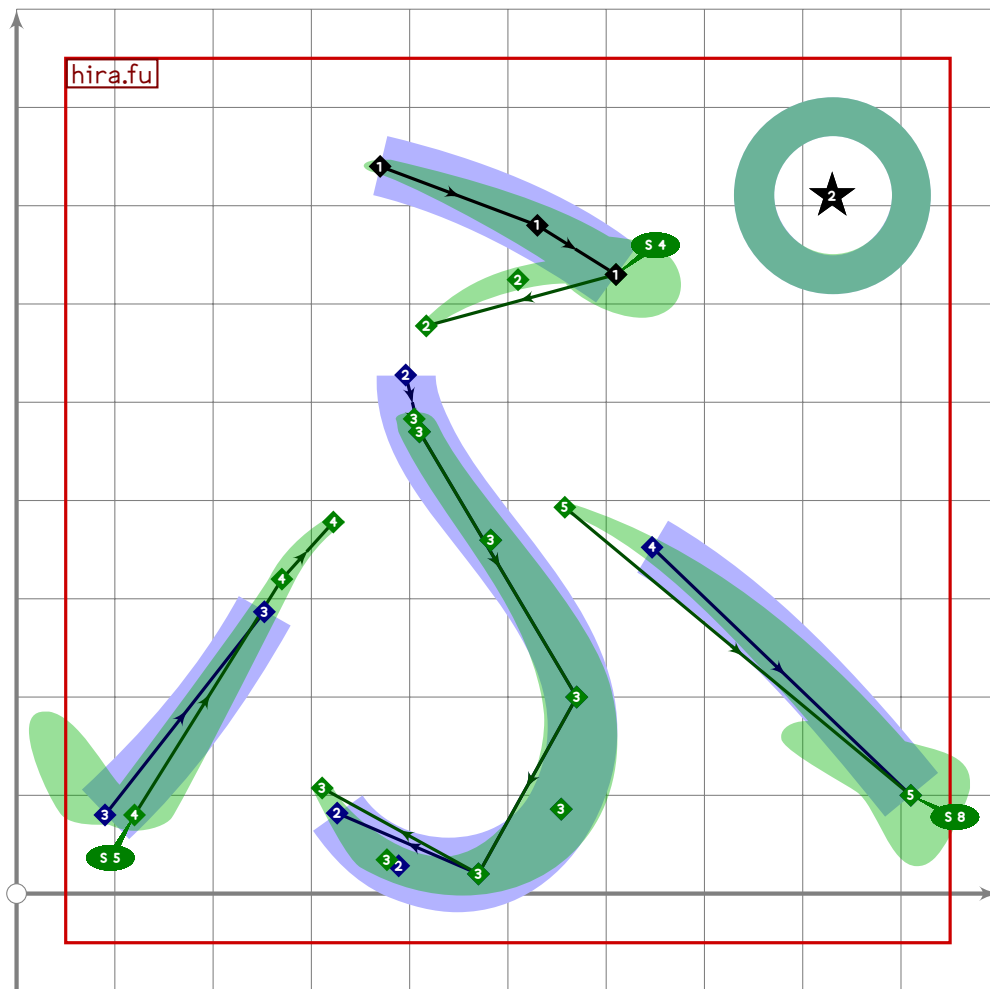
[see page 173]



```

699 % hiragana "bu"
700 begint Suglyph("uni3076",118);
701   hira.fu;
702   dakuten(identity shifted (830,710));
703   tsu_render;
704 endtsuglyph;
705

```

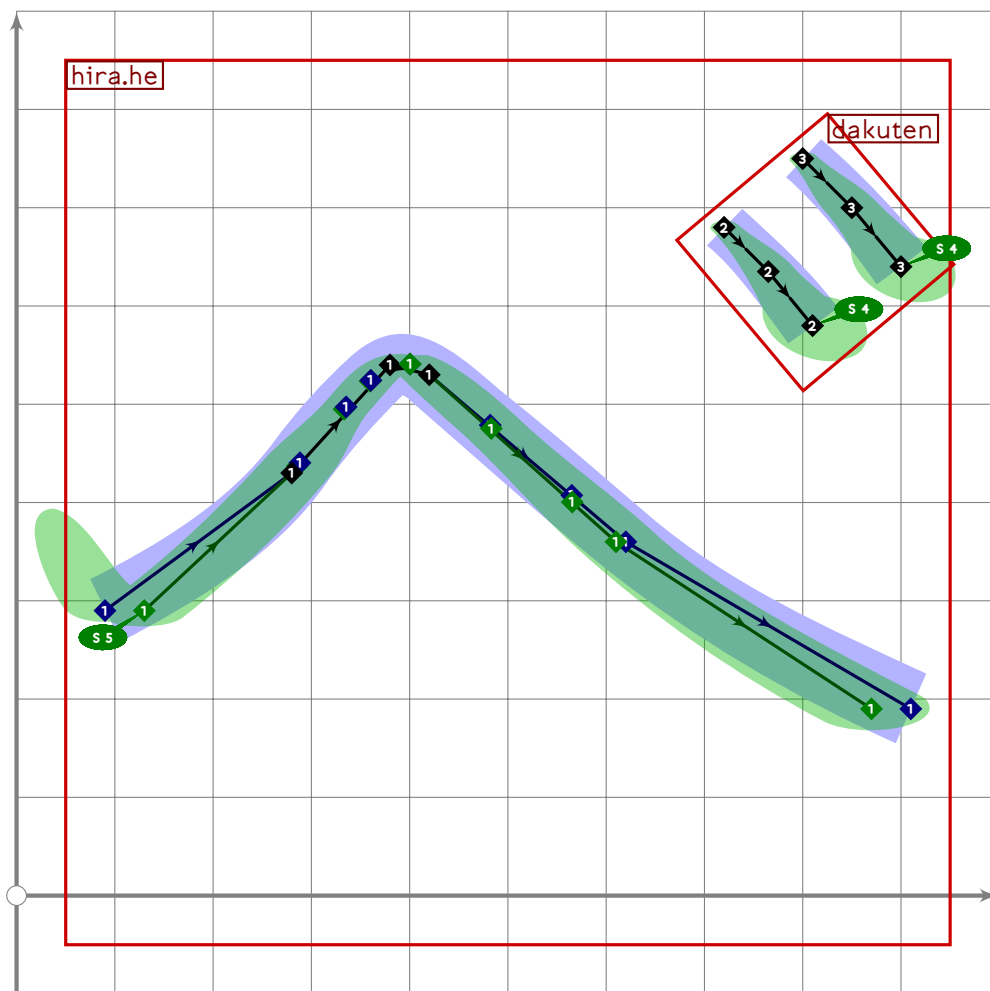


```

706 % hiragana "pu"
707 begintsuglyph("uni3077";119);
708   hira.fu;
709   handakuten((830,710));
710   tsu_render;
711 endtsuglyph;
712
713 % hiragana "he"
714 begintsuglyph("uni3078";120);
715   hira.he;
716   tsu_render;
717 endtsuglyph;
718

```

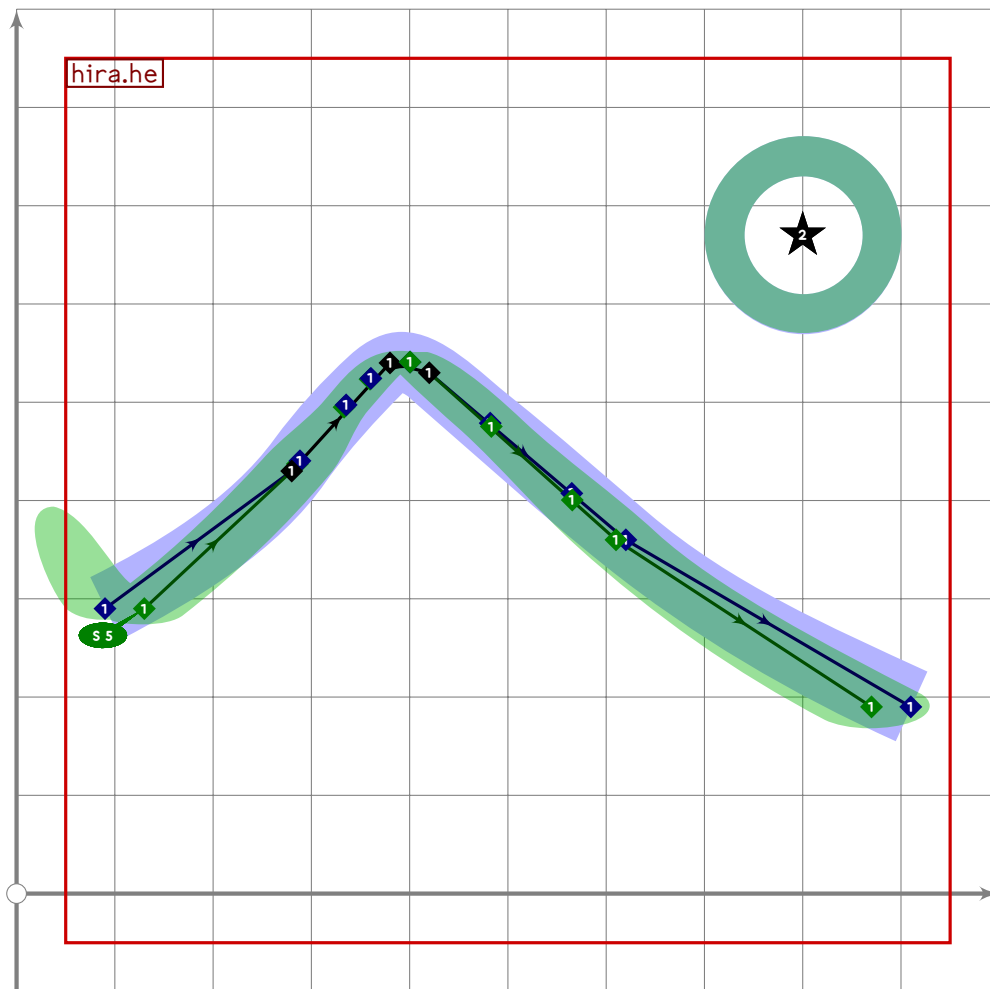
[see page 174]



```

719 % hiragana "be"
720 begintsuglyph("uni3079";121);
721   hira.he;
722   dakuten(identity shifted (800,670));
723   tsu_render;
724 endtsuglyph;
725

```

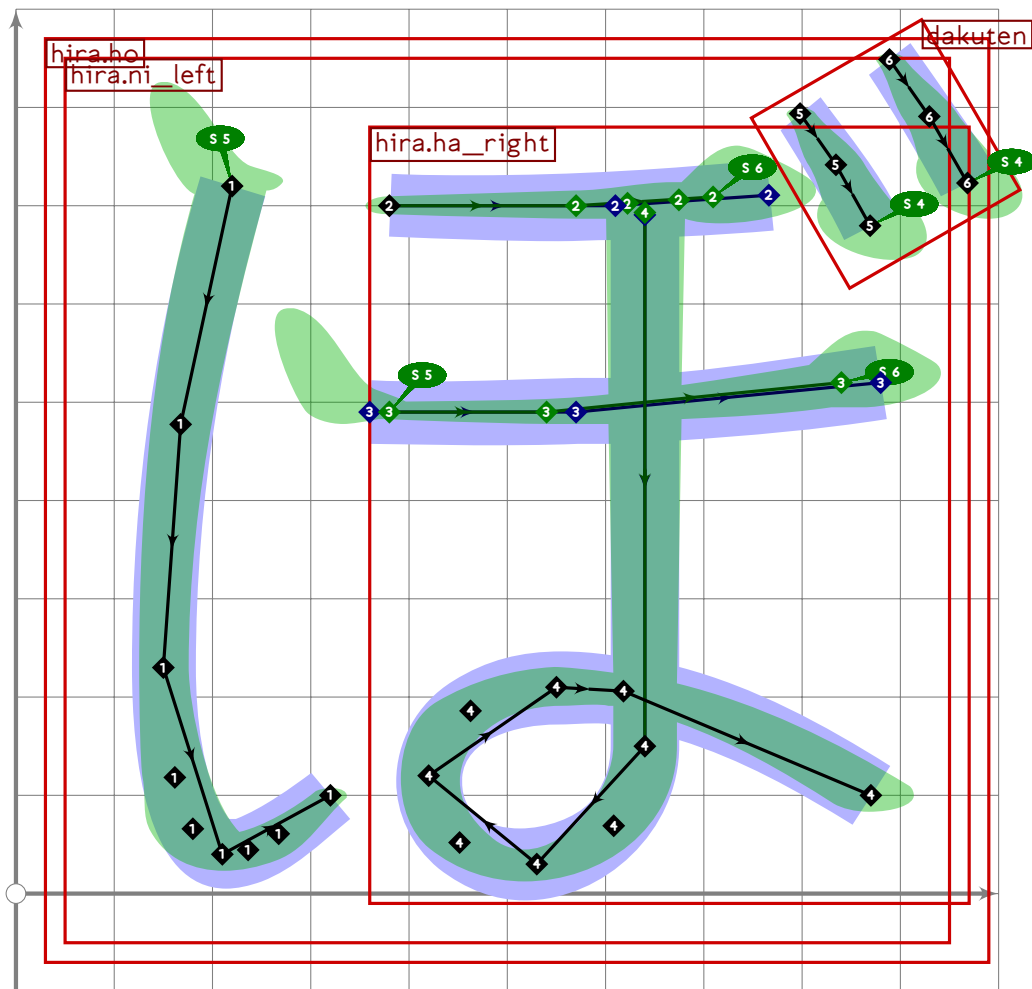



```

726 % hiragana "pe"
727 begintsuglyph("uni307A";122);
728   hira.he;
729   handakuten((800,670));
730   tsu_render;
731 endtsuglyph;
732
733 % hiragana "ho"
734 begintsuglyph("uni307B";123);
735   hira.ho;
736   tsu_render;
737 endtsuglyph;
738

```

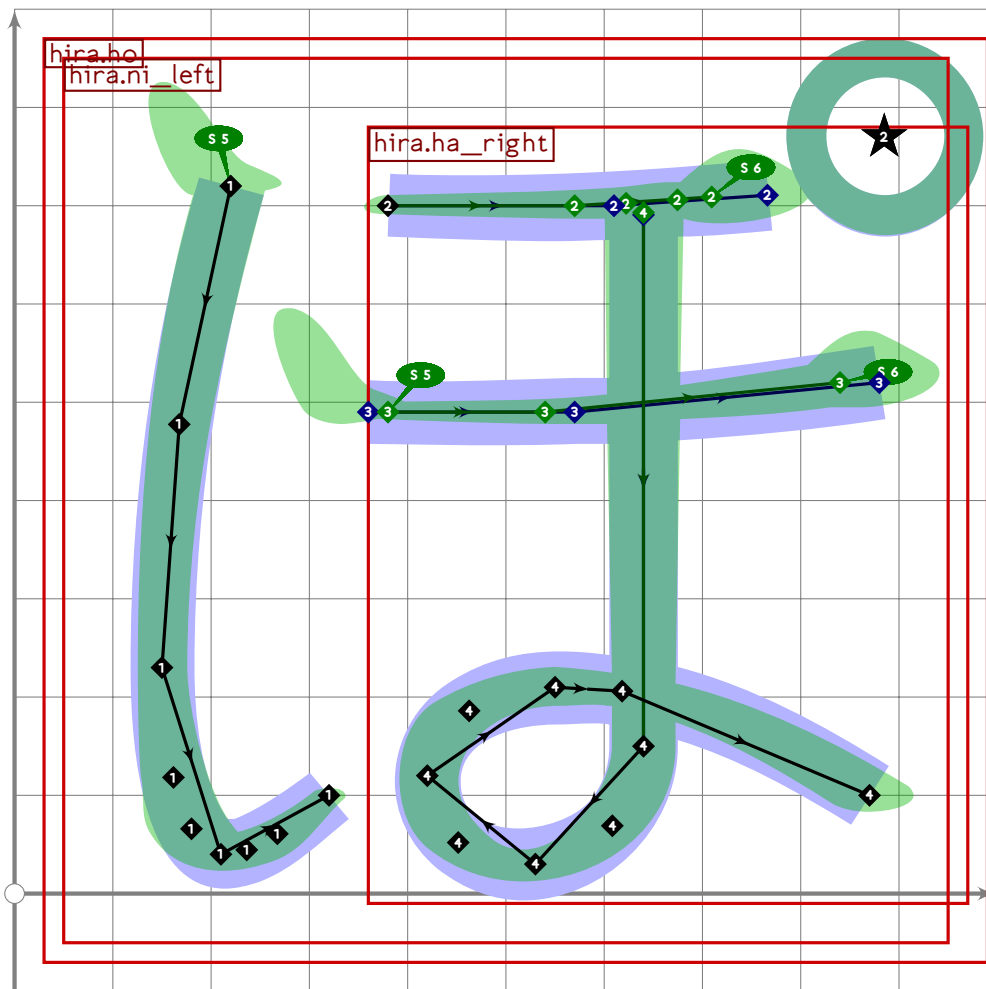
[see page 175]



```

739 % hiragana "bo"
740 begintsuglyph("uni307C";124);
741   hira.ho;
742   replace_strokep(-2,subpath (0,1.65-0.07*mincho) of oldp);
743   replace_strokep(0,oldp shifted (-20,0));
744   dakuten(identity rotated -10 shifted (875,770));
745   tsu_render;
746 endtsuglyph;
747

```



```

748 % hiragana "po"
749 begintsuglyph("uni307D";125);
750 hira.ho;
751 replace_stroke(-2,subpath (0,1.65-0.07*mincho) of oldp);
752 replace_stroke(0,oldp shifted (-20,0));
753 handakuten((885,770));
754 tsu_render;
755 endtsuglyph;
756
757 % hiragana "ma"
758 begintsuglyph("uni307E";126);
759 hira.ma;
760 tsu_render;
761 endtsuglyph;
762
763 % hiragana "mi"
764 begintsuglyph("uni307F";127);
765 hira.mi;
766 tsu_render;
767 endtsuglyph;
768

```

[see page 176]

[see page 178]

```

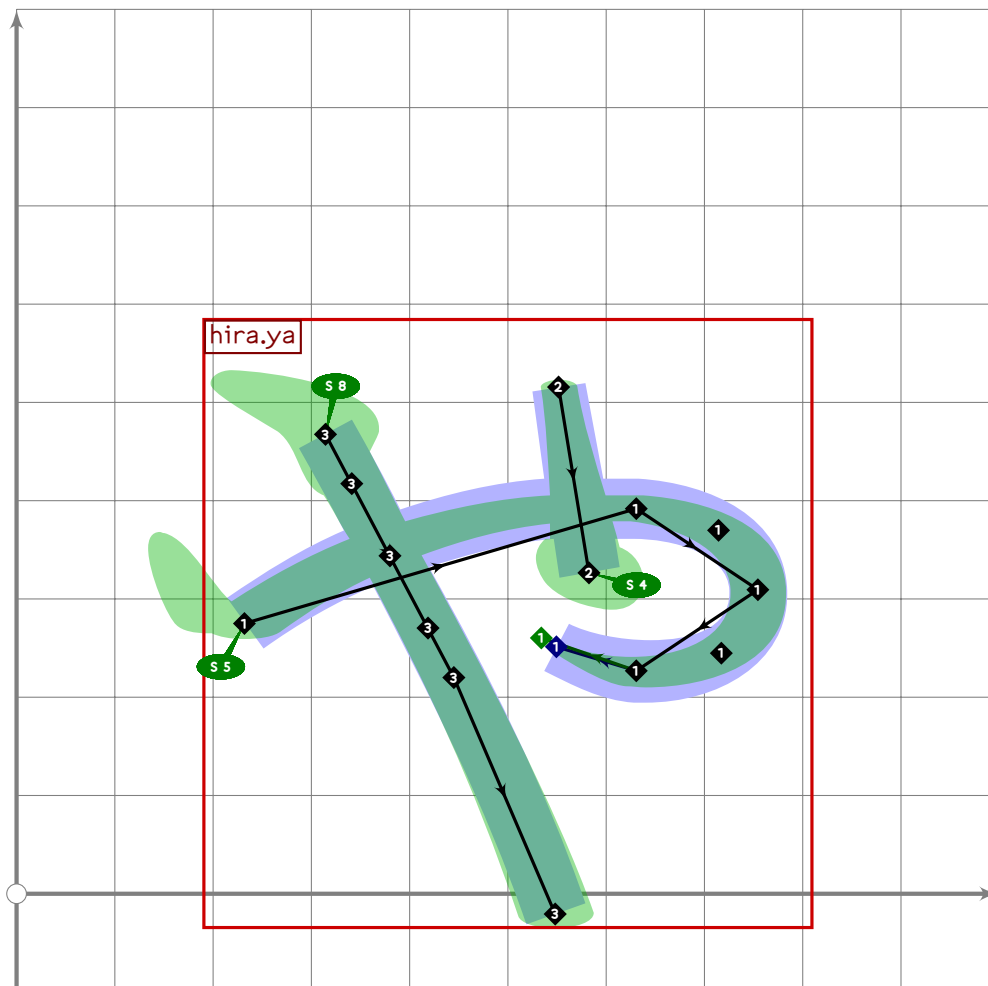
769 % hiragana "mu"
770 begintsuglyph("uni3080";128);
771 hira.mu;
772 tsu_render;
773 endtsuglyph;
774
775 % hiragana "me"
776 begintsuglyph("uni3081";129);
777 hira.me;
778 tsu_render;
779 endtsuglyph;
780
781 % hiragana "mo"
782 begintsuglyph("uni3082";130);
783 hira.mo;
784 tsu_render;
785 endtsuglyph;
786

```

[see page 179]

[see page 180]

[see page 181]



```

787 % hiragana "small ya"
788 begintsuglyph("uni3083";131);
789 tsu_xform(tsu_xf.smallkana)(hira.ya);

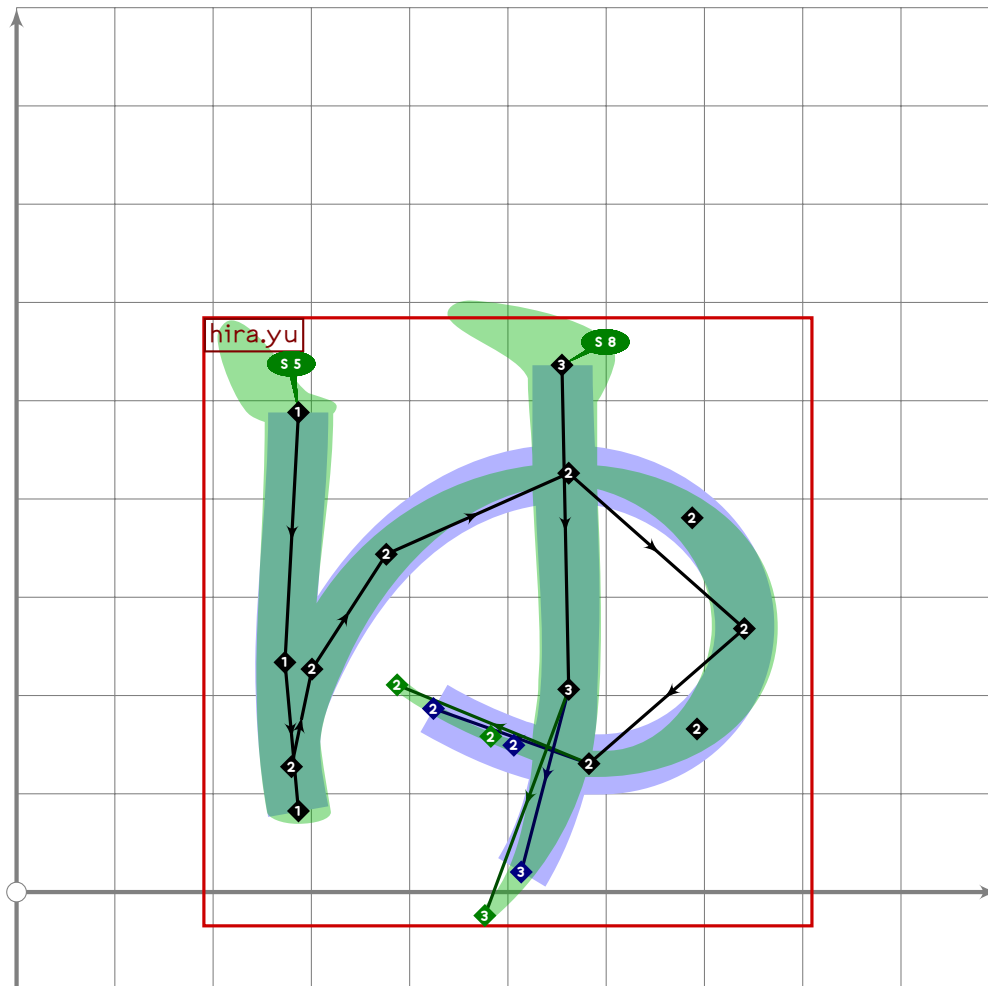
```

```

790 tsu_render;
791 endtsuglyph;
792
793 % hiragana "ya"
794 begintsuglyph("uni3084";132);
795 hira.ya;
796 tsu_render;
797 endtsuglyph;
798

```

[see page 182]

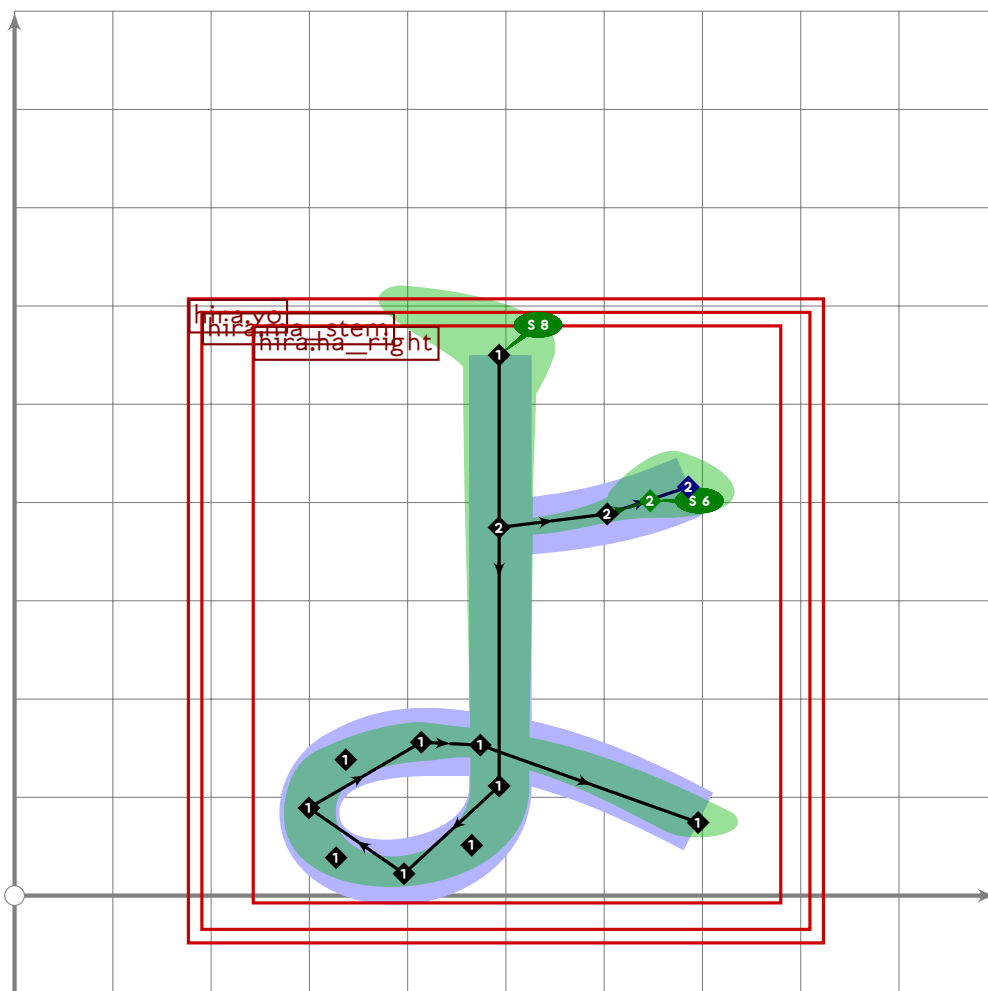


```

799 % hiragana "small yu"
800 begintsuglyph("uni3085";133);
801 tsu_xform(tsu_xf.smallkana)(hira.yu);
802 tsu_render;
803 endtsuglyph;
804
805 % hiragana "yu"
806 begintsuglyph("uni3086";134);
807 hira.yu;
808 tsu_render;
809 endtsuglyph;
810

```

[see page 183]



```

811 % hiragana "small yo"
812 begintsuglyph("uni3087";135);
813   tsu_xform(tsu_xf.smallkana)(hira.yo);
814   tsu_render;
815 endtsuglyph;
816
817 begintsuglyph("uni3088";136);
818   hira.yo;
819   tsu_render;
820 endtsuglyph;
821
822 % hiragana "ra"
823 begintsuglyph("uni3089";137);
824   hira.ra;
825   tsu_render;
826 endtsuglyph;
827
828 % hiragana "ri"
829 begintsuglyph("uni308A";138);
830   hira.ri;
831   tsu_render;

```

[see page 184]

[see page 185]

[see page 186]

```

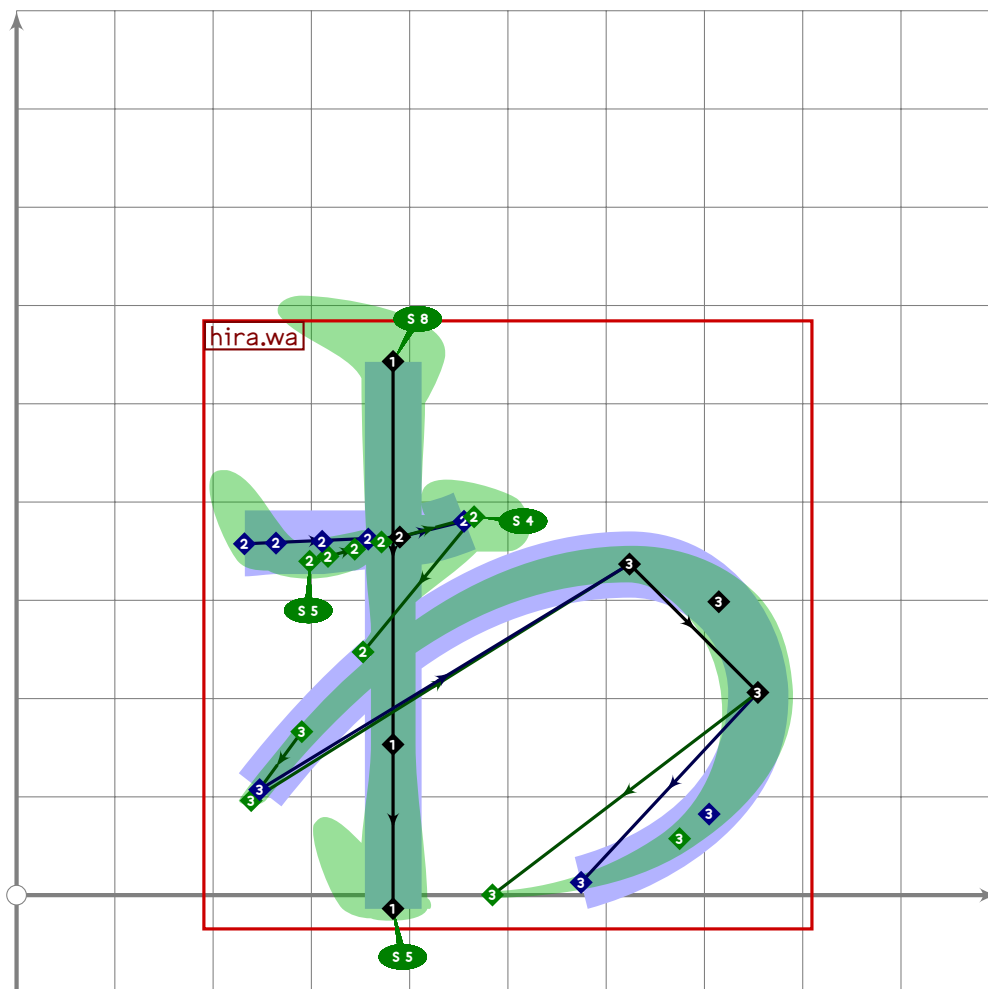
832 endtsuglyph;
833
834 % hiragana "ru"
835 begintsuglyph("uni308B";139);
836 hira.ru;
837 tsu_render;
838 endtsuglyph;
839
840 % hiragana "re"
841 begintsuglyph("uni308C";140);
842 hira.re;
843 tsu_render;
844 endtsuglyph;
845
846 % hiragana "ro"
847 begintsuglyph("uni308D";141);
848 hira.ro;
849 tsu_render;
850 endtsuglyph;
851

```

[see page 187]

[see page 188]

[see page 189]



```

852 % hiragana "small wa"

```

```

853 begintsuglyph("uni308E";142);
854   tsu_xform(tsu_xf.smallkana)(hira.wa);
855   tsu_render;
856 endtsuglyph;
857
858 % hiragana "wa"
859 begintsuglyph("uni308F";143);
860   hira.wa;
861   tsu_render;
862 endtsuglyph;
863
864 % obsolete hiragana "wi"
865 begintsuglyph("uni3090";144);
866   hira.wi;
867   tsu_render;
868 endtsuglyph;
869
870 % obsolete hiragana "we"
871 begintsuglyph("uni3091";145);
872   hira.we;
873   tsu_render;
874 endtsuglyph;
875
876 % hiragana "wo"
877 begintsuglyph("uni3092";146);
878   hira.wo;
879   tsu_render;
880 endtsuglyph;
881
882 % hiragana "n"
883 begintsuglyph("uni3093";147);
884   hira.n;
885   tsu_render;
886 endtsuglyph;
887

```

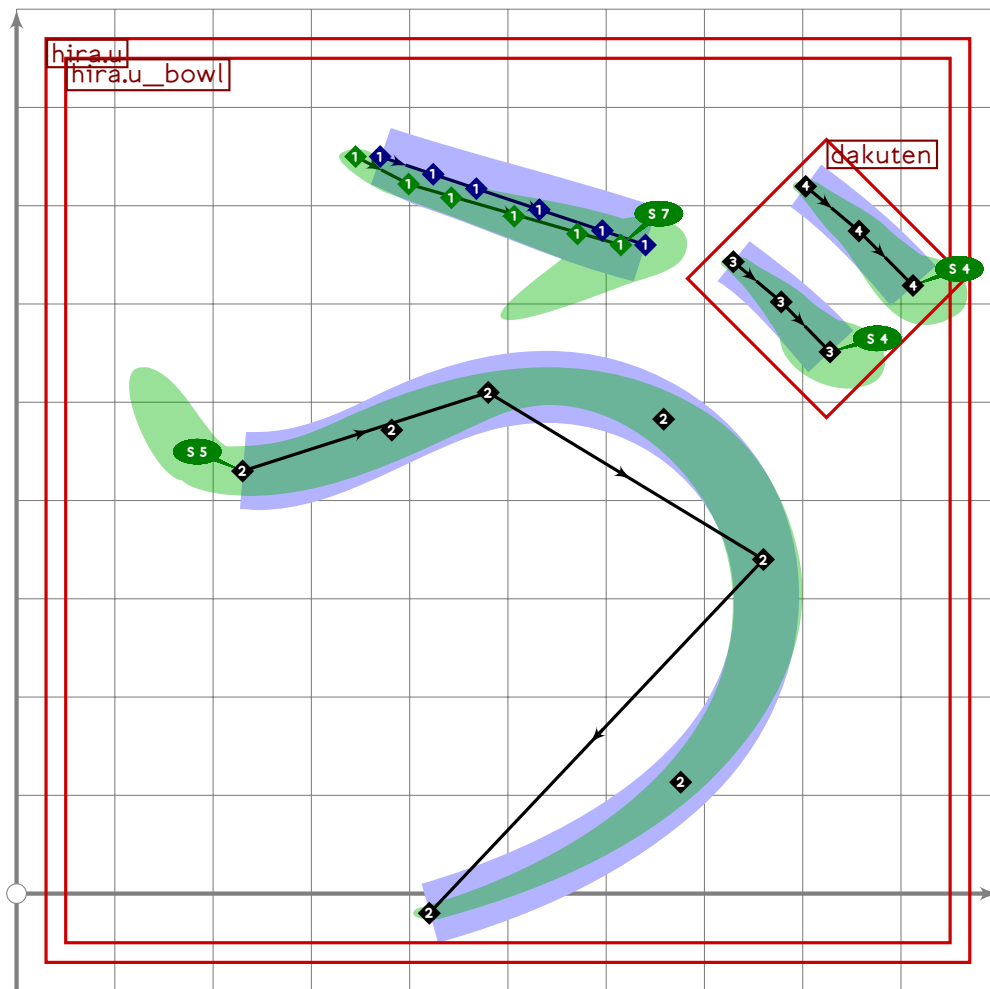
[see page 190]

[see page 191]

[see page 192]

[see page 193]

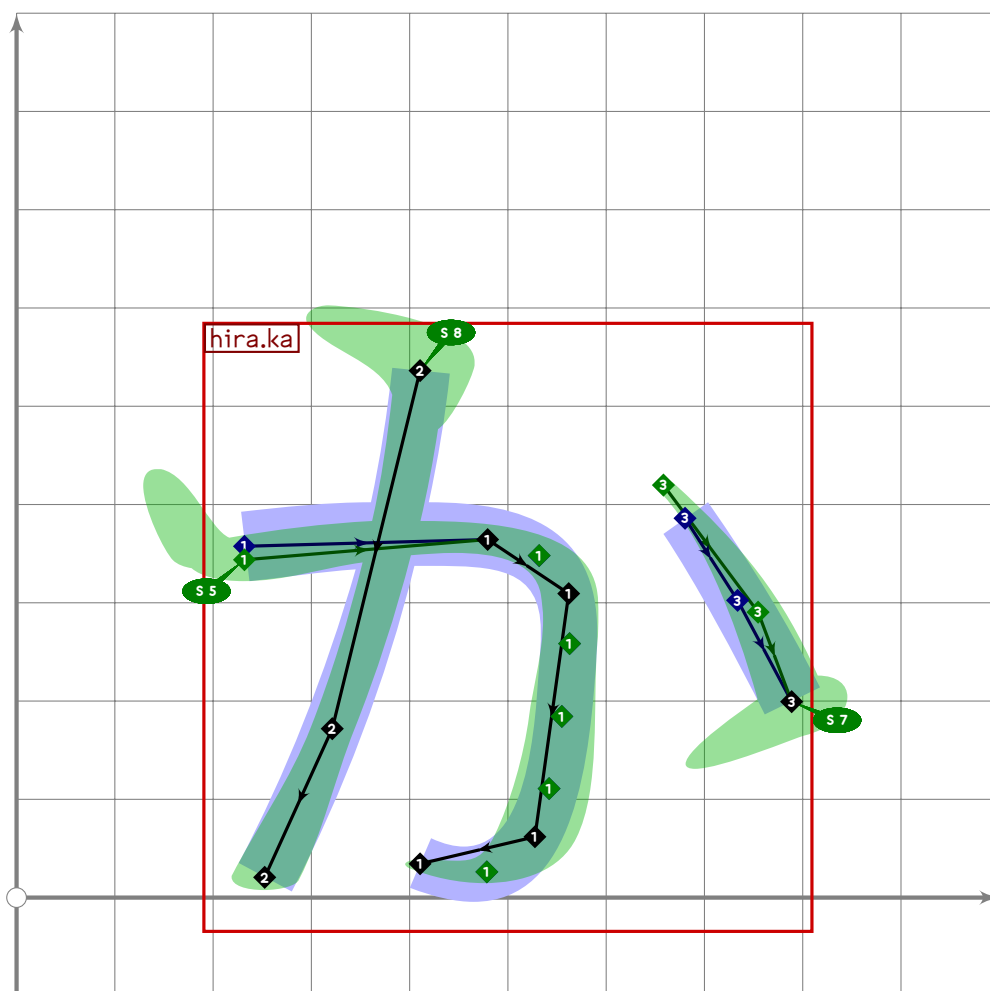
[see page 194]



```

888 % hiragana "vu"
889 begintsuglyph("uni3094";148);
890   hira.u;
891   dakuten(identity rotated 5 shifted (810,640));
892   tsu_render;
893 endtsuglyph;
894

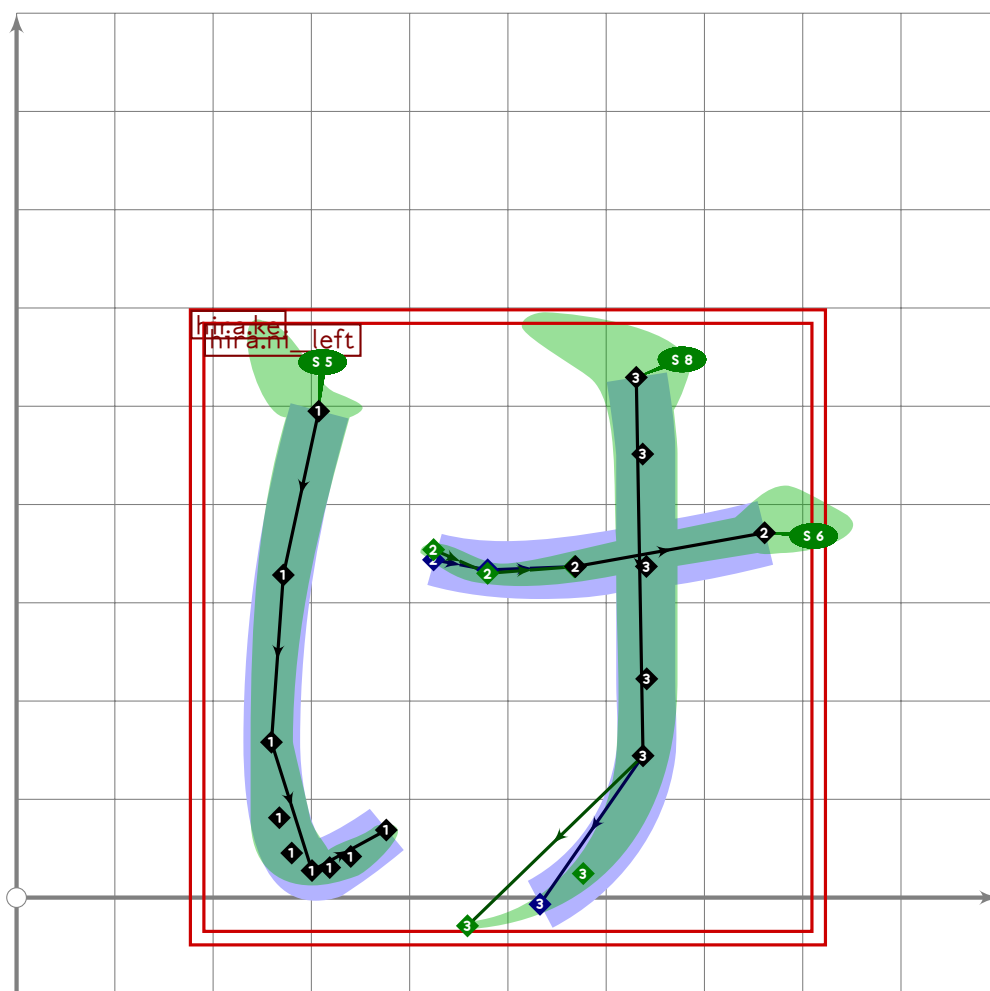
```



```

895 % hiragana "small ka"
896 begint Suglyph("uni3095",149);
897   tsu_xform(tsu_xf.smallkana)(hira.ka);
898   tsu_render;
899 endtsuglyph;
900

```



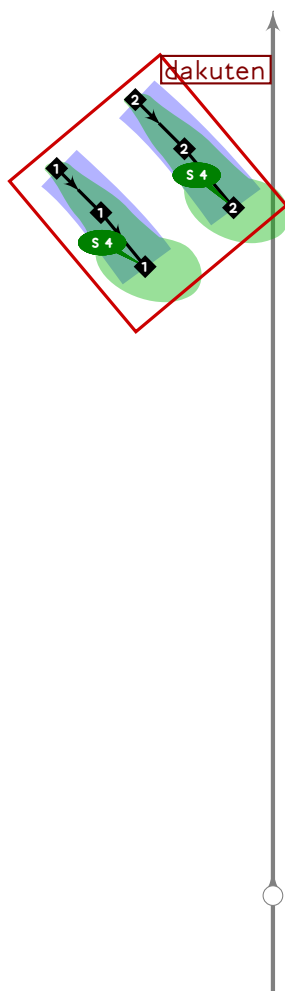
```

901 % hiragana "small ke"
902 begintsuglyph("uni3096",150);
903   tsu_xform(tsu_xf.smallkana)(hira.ke);
904   tsu_render;
905 endtsuglyph;
906
907 % WARNING changing rescale setting
908 tsu_rescale_native_zero;
909

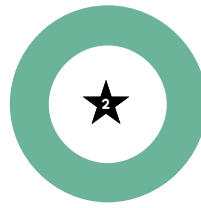
```

U+3099
tsuku.uni3099

30



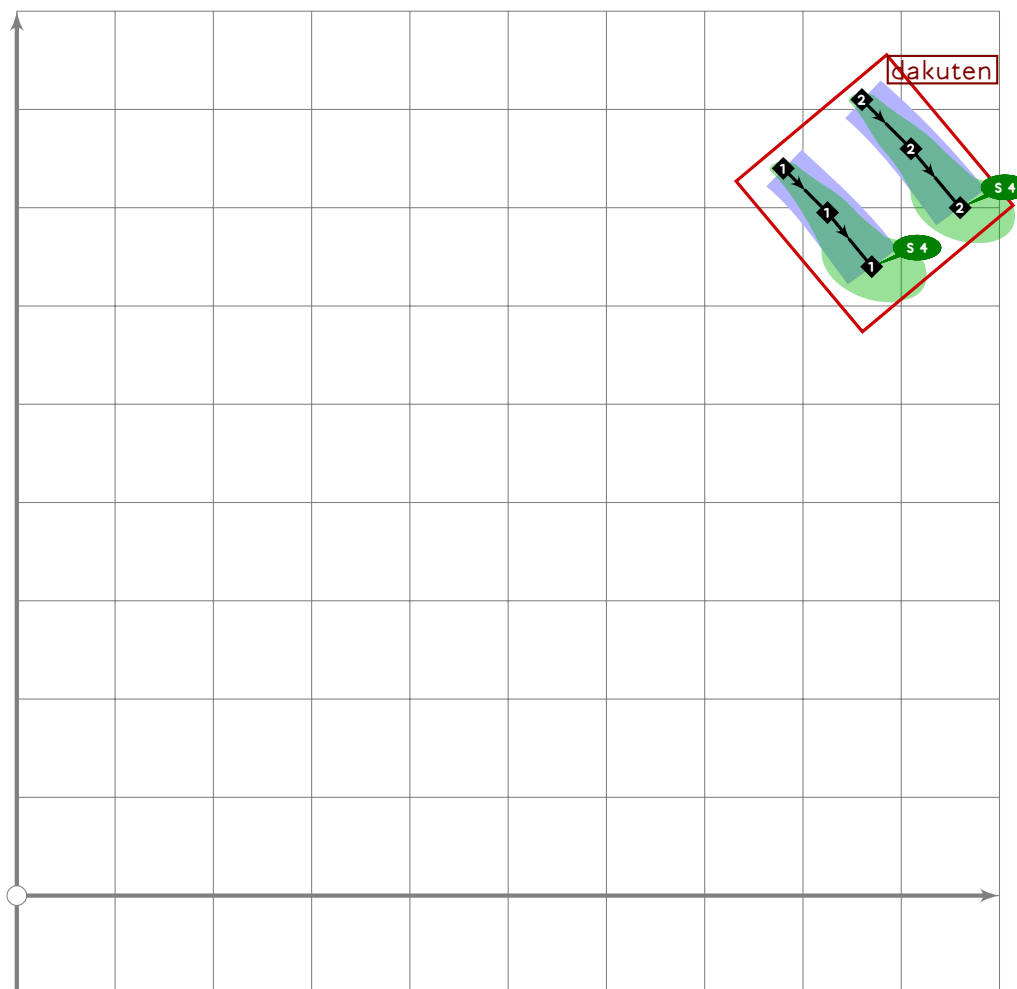
```
910 % combining dakuten
911 begint Suglyph("uni3099";153);
912   dakuten(identity shifted (-140,730));
913   tsu_render;
914 endtsuglyph;
915
```



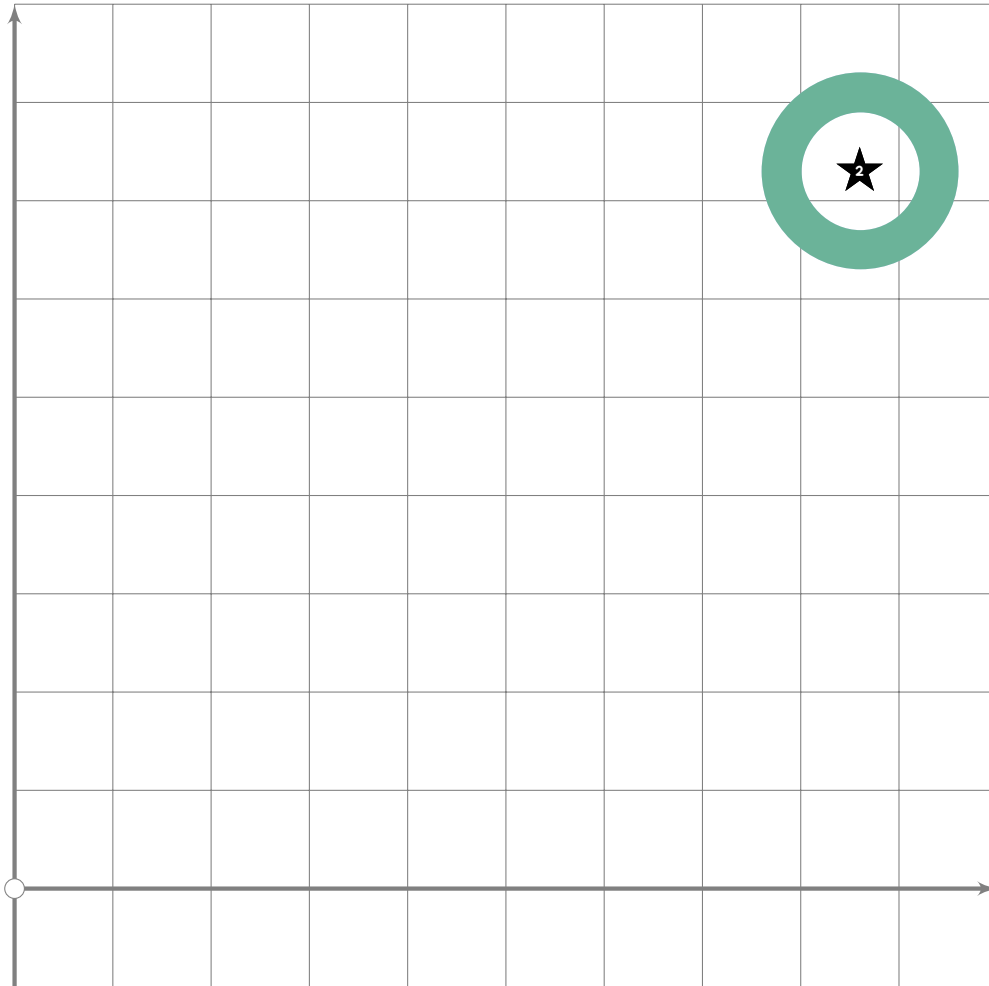
```
916 % combining handakuten
917 begintsuglyph("uni309A",154);
918     handakuten((-140,730));
919     tsu_render;
920 endtsuglyph;
921
922 % WARNING changing rescale setting
923 tsu_rescale_full;
924
```

U+309B
tsuku.uni309B

30

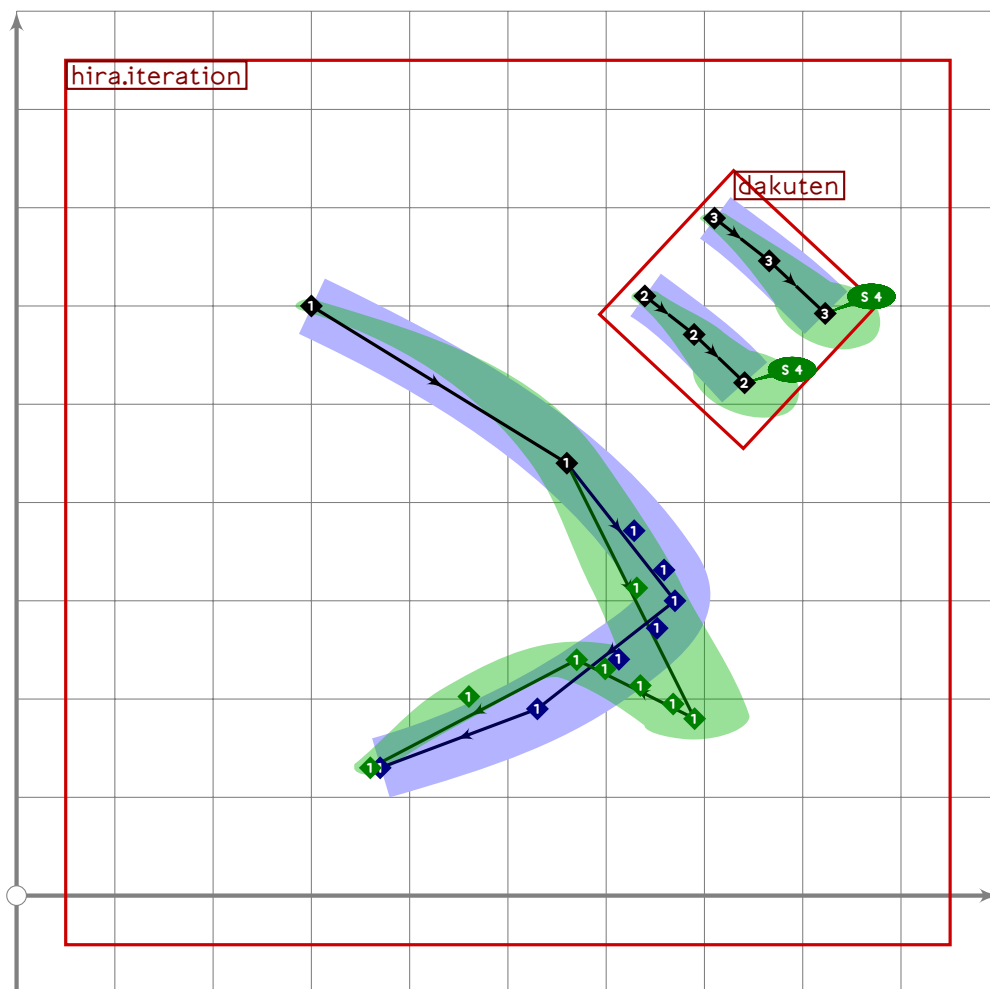


```
925 % dakuten alone
926 begintsuglyph("uni309B",155);
927   dakuten(identity shifted (860,730));
928   tsu_render;
929 endtsuglyph;
930
```



```
931 % handakuten alone
932 begintsuglyph("uni309C";156);
933   handakuten((860,730));
934   tsu_render;
935 endtsuglyph;
936
937 % hiragana "iteration mark"
938 begintsuglyph("uni309D";157);
939   hira.iteration;
940   tsu_render;
941 endtsuglyph;
942
```

[see page 195]



```

943 % hiragana "voiced iteration mark"
944 begintsuglyph("uni309E";158);
945   hira.iteration;
946   dakuten(identity rotated 7 shifted (720,610));
947   tsu_render;
948 endtsuglyph;

```

```

949
950 % hiragana "yori ligature"
951 begintsuglyph("uni309F";159);
952   hira.yori;
953   tsu_render;
954 endtsuglyph;

```

[see page 196]

```

955
956
957

```

Katakana

```

958 % KATAKANA
959
960 % katakana double hyphen
961 begintsuglyph("uni30A0";160);

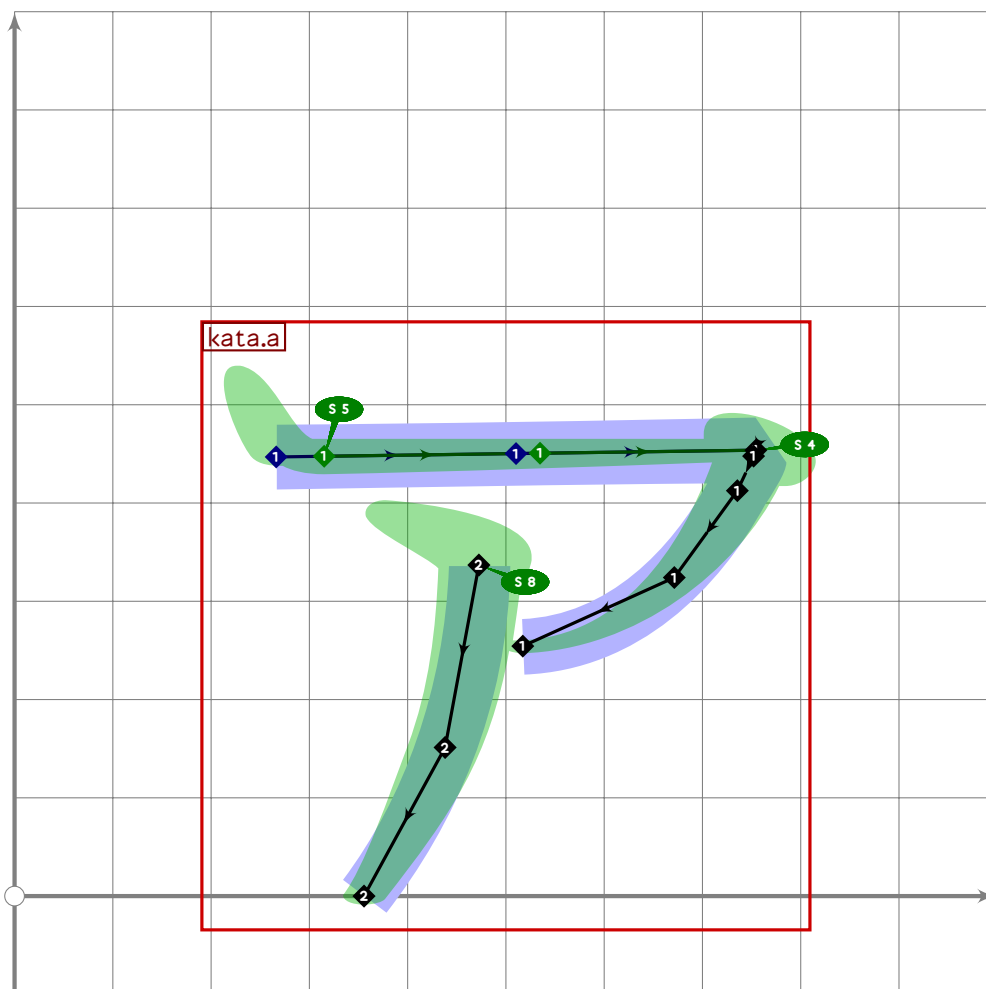
```

[see page 373]


```

962 punct.dash.double_hyphen;
963 tsu_render;
964 endtsuglyph;
965

```

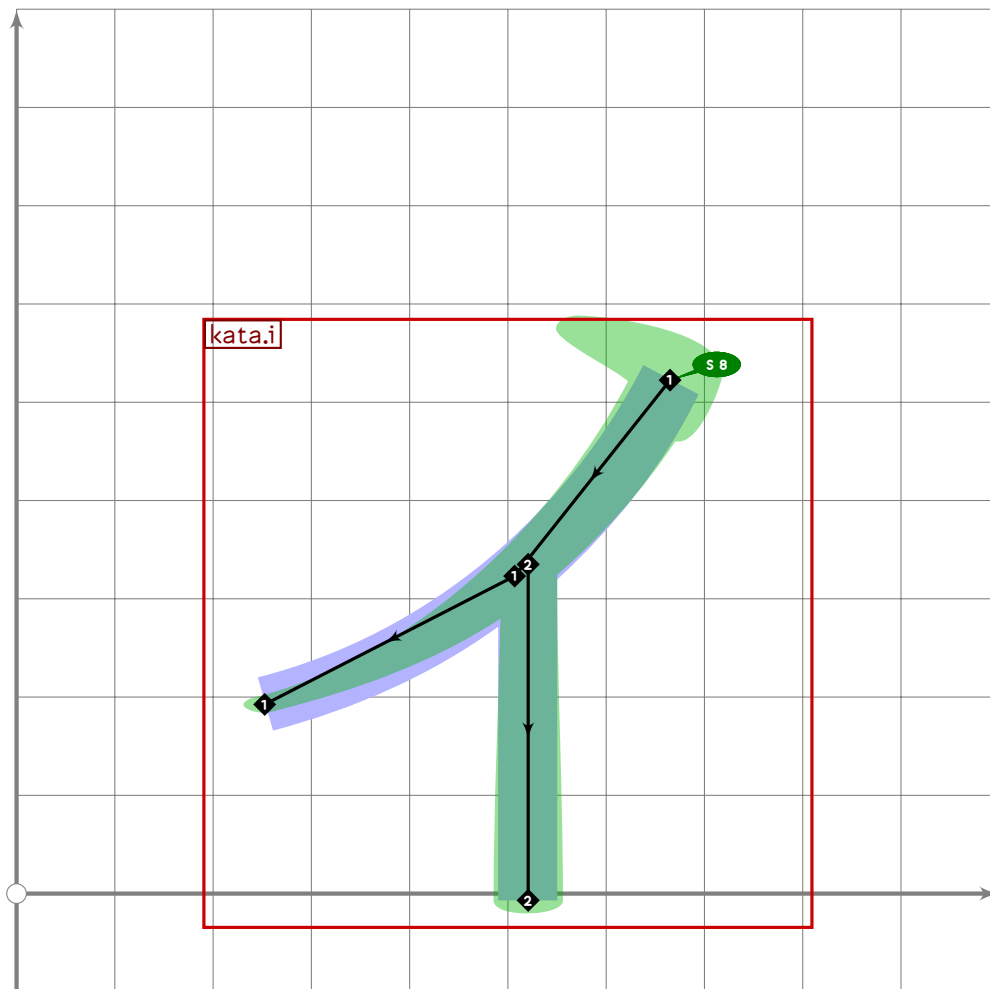


```

966 % katakana "small a"
967 begintsuglyph("uni30A1";161);
968 tsu_xform(tsu_xf.smallkana)(kata.a);
969 tsu_render;
970 endtsuglyph;
971
972 % katakana "a"
973 begintsuglyph("uni30A2";162);
974 kata.a;
975 tsu_render;
976 endtsuglyph;
977

```

[see page 200]

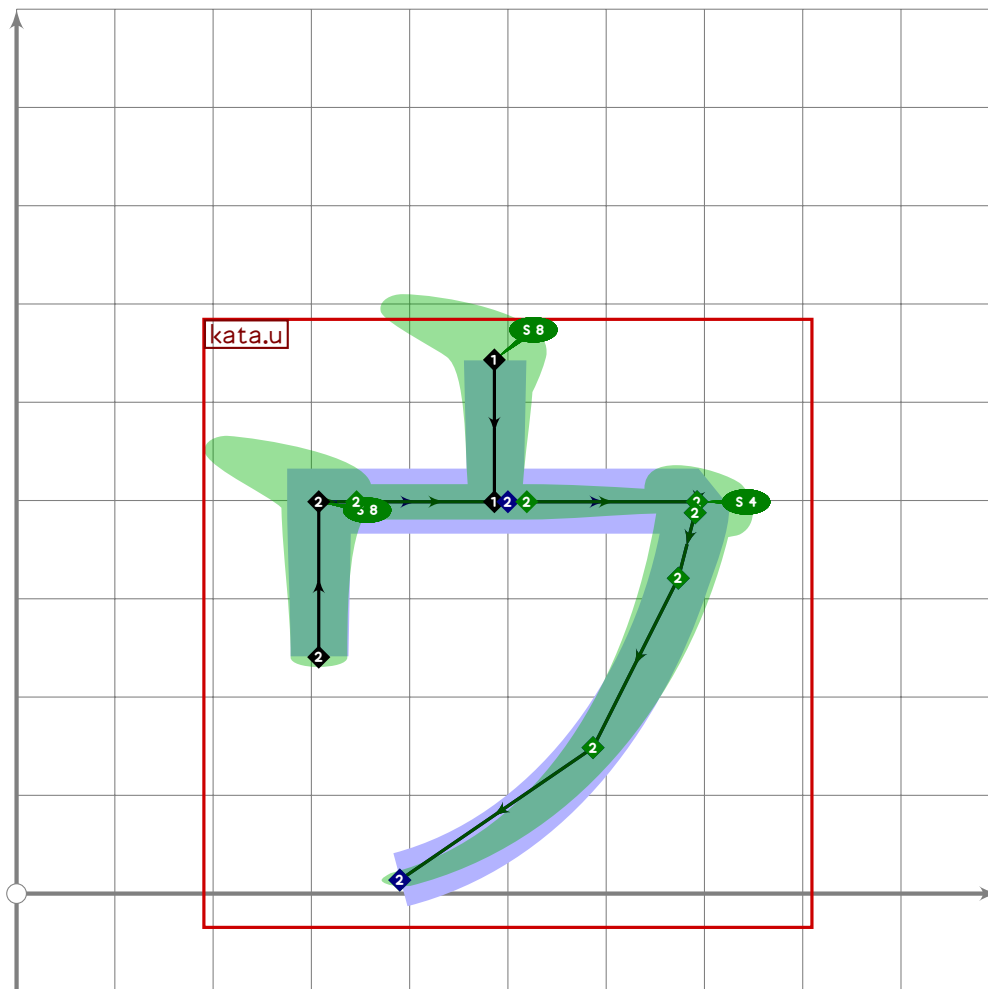


```

978 % katakana "small i"
979 begintsuglyph("uni30A3";163);
980 tsu_xform(tsu_xf.smallkana)(kata.i);
981 tsu_render;
982 endtsuglyph;
983
984 % katakana "i"
985 begintsuglyph("uni30A4";164);
986 kata.i;
987 tsu_render;
988 endtsuglyph;
989

```

[see page 201]

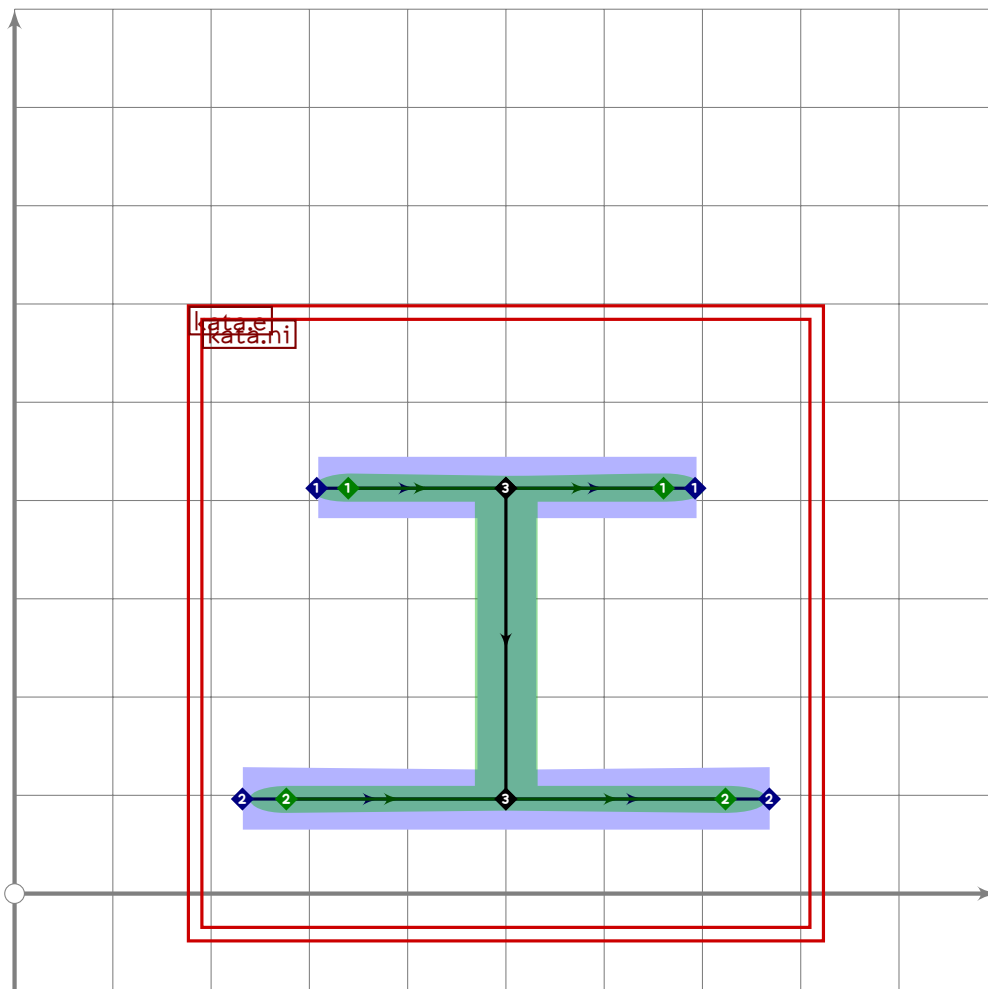


```

990 % katakana "small u"
991 begintsuglyph("uni30A5";165);
992   tsu_xform(tsu_xf.smallkana)(kata.u);
993   tsu_render;
994 endtsuglyph;
995
996 % katakana "u"
997 begintsuglyph("uni30A6";166);
998   kata.u;
999   tsu_render;
1000 endtsuglyph;
1001

```

[see page 202]

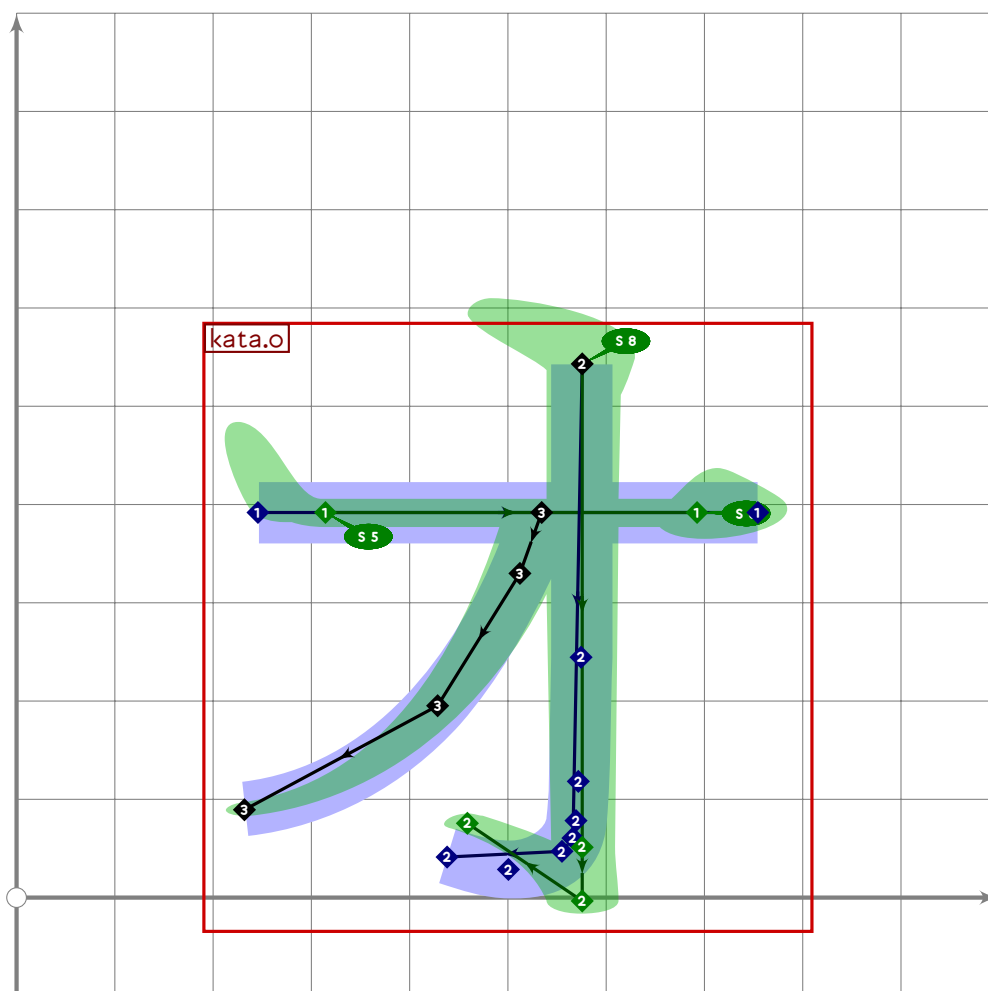


```

1002 % katakana "small e"
1003 begintsuglyph("uni30A7";167);
1004   tsu_xform(tsu_xf.smallkana)(kata.e);
1005   tsu_render;
1006 endtsuglyph;
1007
1008 % katakana "e"
1009 begintsuglyph("uni30A8";168);
1010   kata.e;
1011   tsu_render;
1012 endtsuglyph;
1013

```

[see page 203]



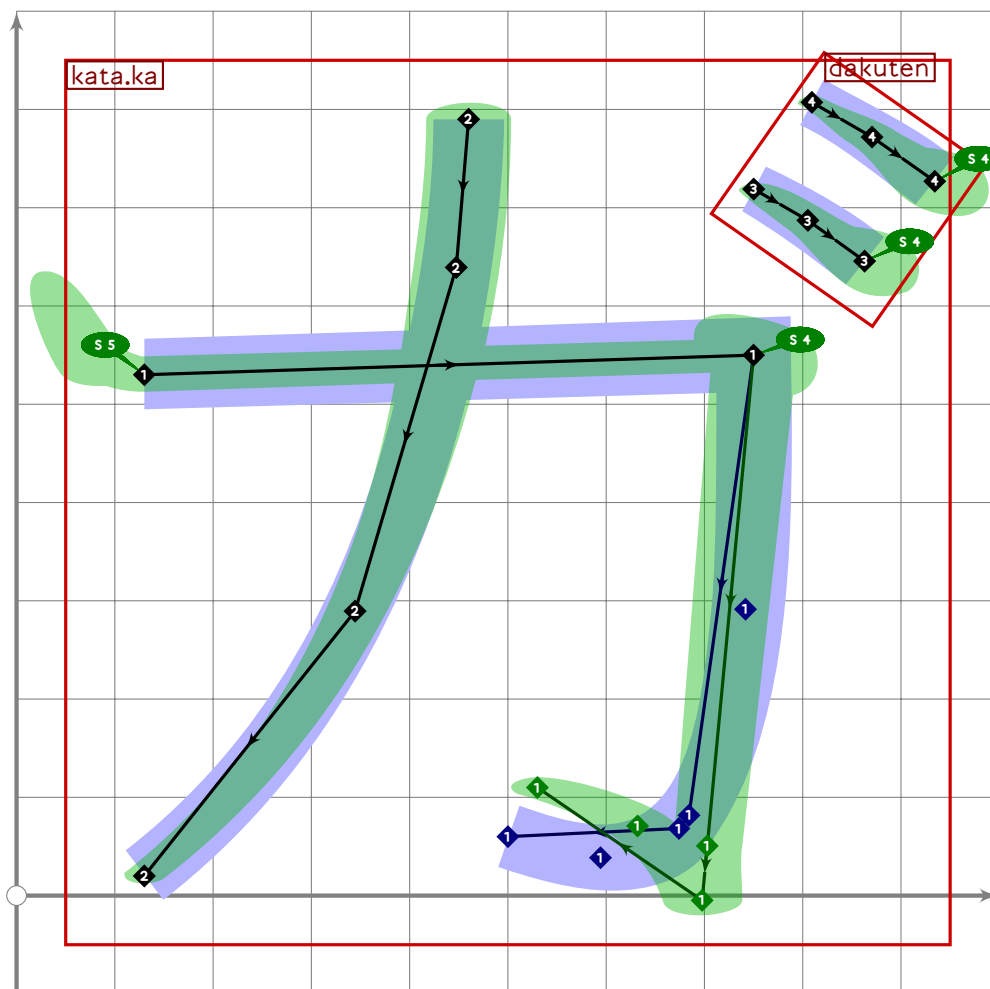
```

1014 % katakana "small o"
1015 begintsuglyph("uni30A9";169);
1016 tsu_xform(tsu_xf.smallkana)(kata.o);
1017 tsu_render;
1018 endtsuglyph;
1019
1020 % katakana "o"
1021 begintsuglyph("uni30AA";170);
1022 kata.o;
1023 tsu_render;
1024 endtsuglyph;
1025
1026 % katakana "ka"
1027 begintsuglyph("uni30AB";171);
1028 kata.ka;
1029 tsu_render;
1030 endtsuglyph;
1031

```

[see page 204]

[see page 205]

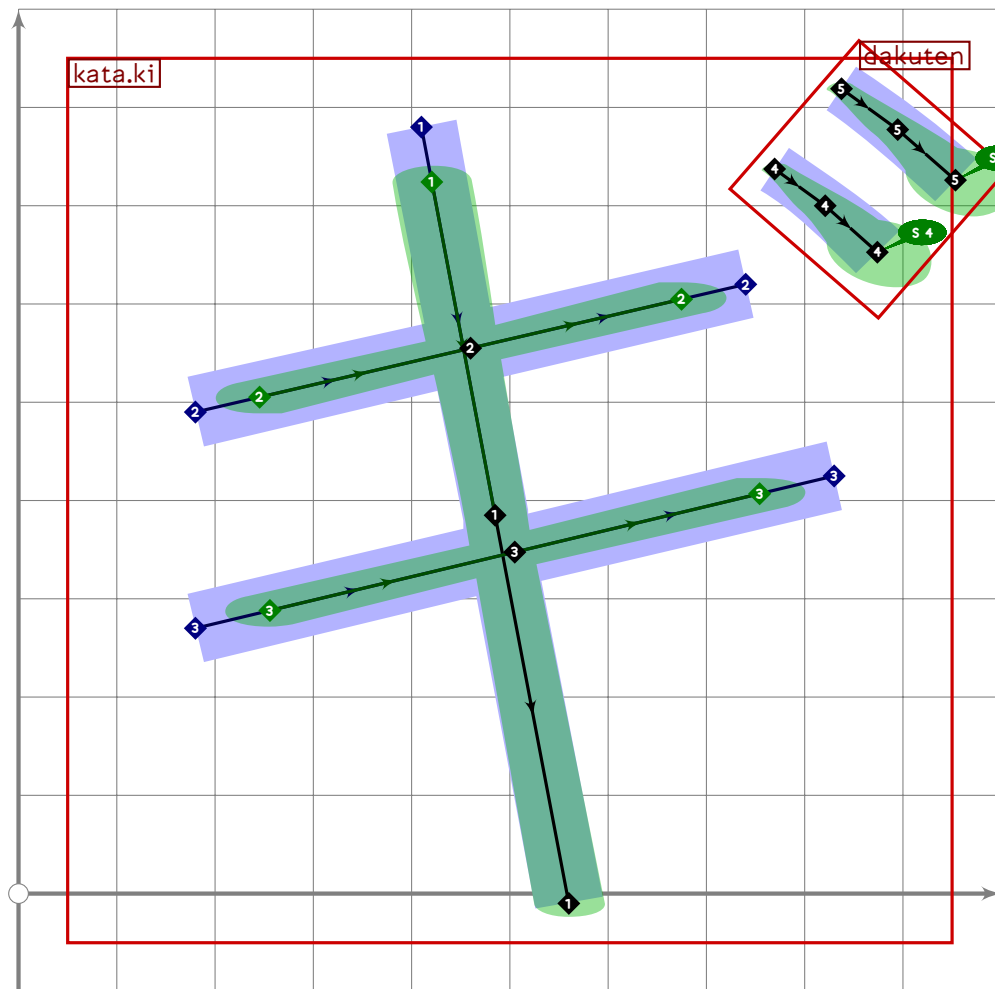


```

1032 % katakana "ga"
1033 begintsuglyph("uni30AC",172);
1034 kata.ka;
1035 dakuten(identity rotated 15 shifted (830,730));
1036 tsu_render;
1037 endtsuglyph;
1038
1039 % katakana "ki"
1040 begintsuglyph("uni30AD",173);
1041 kata.ki;
1042 tsu_render;
1043 endtsuglyph;
1044

```

[see page 206]



```

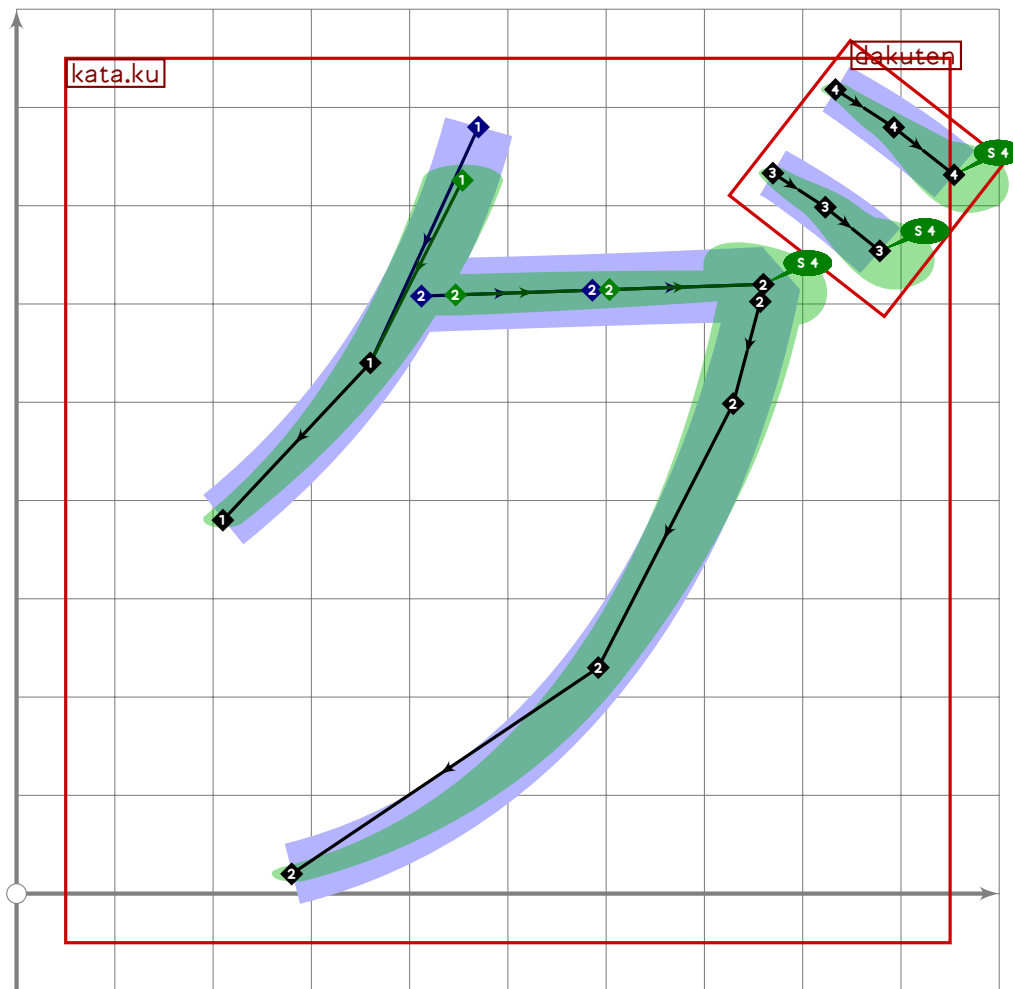
1045 % katakana "gi"
1046 begintsuglyph("uni30AE";174);
1047   kata.ki;
1048   dakuten(identity rotated 9 shifted (850,740));
1049   tsu_render;
1050 endtsuglyph;
1051
1052 % katakana "ku"
1053 begintsuglyph("uni30AF";175);
1054   kata.ku;
1055   tsu_render;
1056 endtsuglyph;
1057

```

[see page 207]

U+30B0
tsuku.uni30B0

30

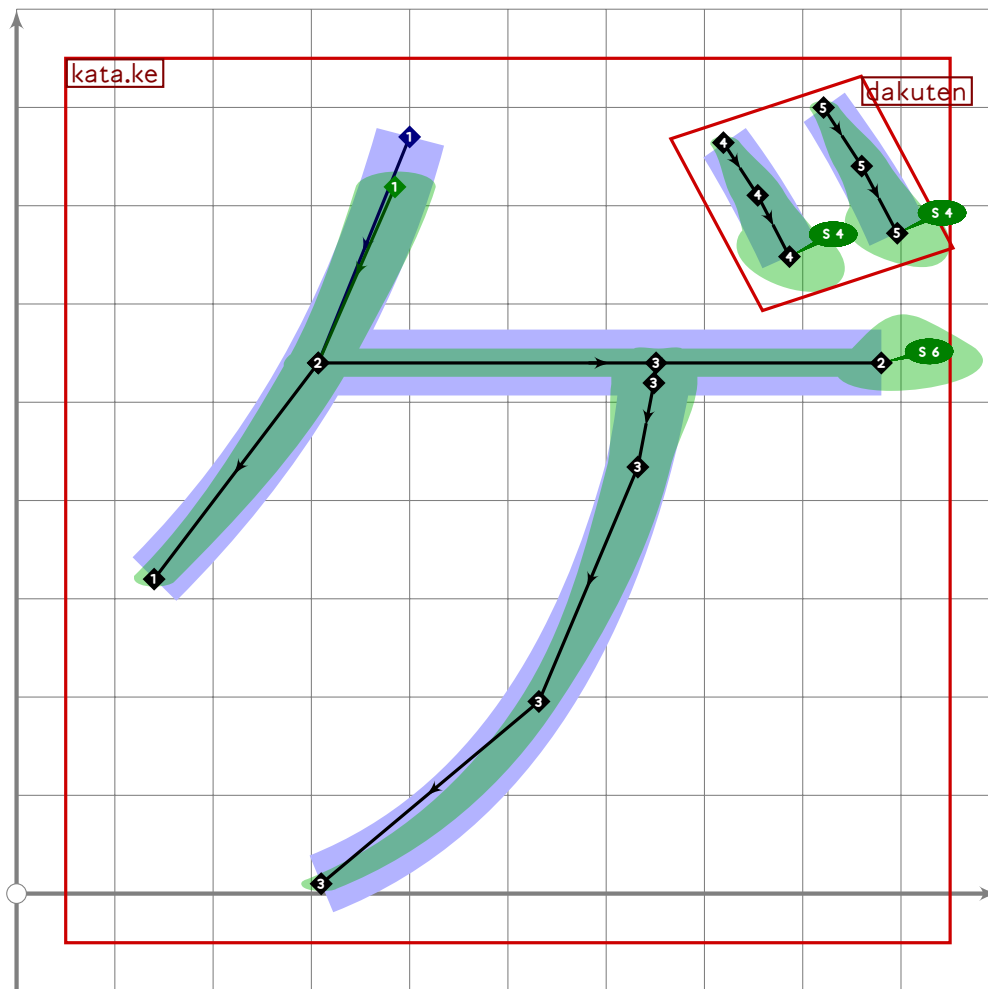


```

1058 % katakana "gu"
1059 begintsuglyph("uni30B0";176);
1060 kata.ku;
1061 dakuten(identity rotated 12 shifted (850,740));
1062 tsu_render;
1063 endtsuglyph;
1064
1065 % katakana "ke"
1066 begintsuglyph("uni30B1";177);
1067 kata.ke;
1068 tsu_render;
1069 endtsuglyph;
1070

```

[see page 208]



```

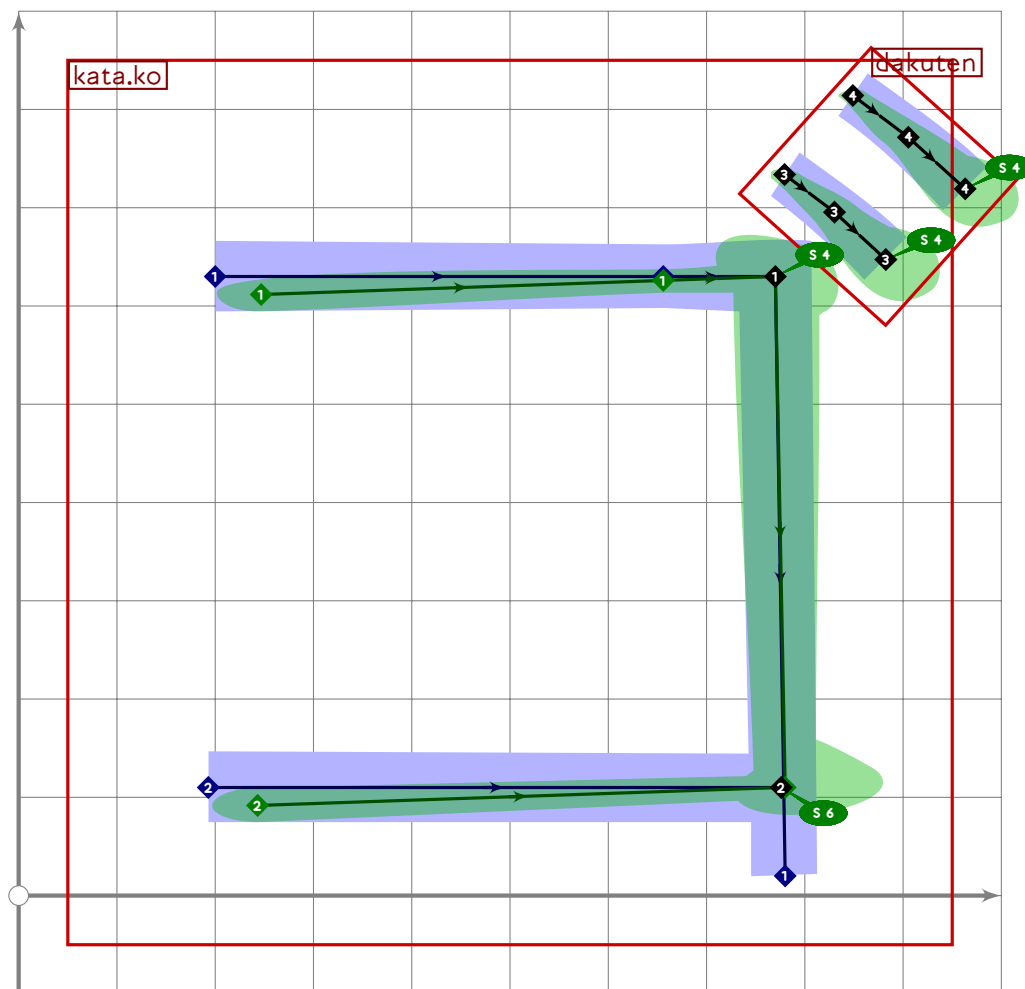
1071 % katakana "ge"
1072 begintsuglyph("uni30B2";178);
1073   kata.ke;
1074   dakuten(identity
1075     rotated -20 slanted -0.1 xyscaled (1.07,0.93) shifted (800,730));
1076   tsu_render;
1077 endtsuglyph;
1078
1079 % katakana "ko"
1080 begintsuglyph("uni30B3";179);
1081   kata.ko;
1082   tsu_render;
1083 endtsuglyph;
1084

```

[see page 209]

U+30B4
tsuku.uni30B4

30

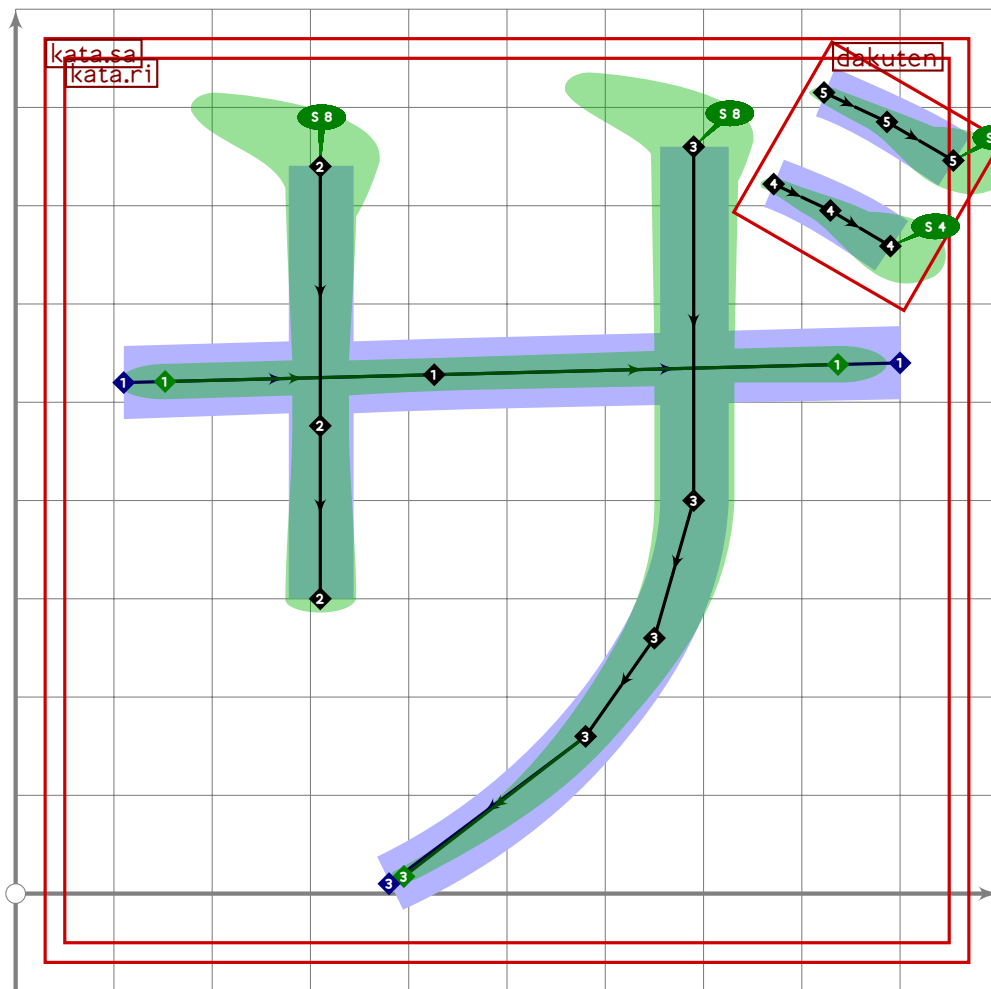


```

1085 % katakana "go"
1086 begintsuglyph("uni30B4";180);
1087 kata.ko;
1088 bo_tip1[1]:=0;
1089 dakuten(identity rotated 8 shifted (860,735));
1090 tsu_render;
1091 endtsuglyph;
1092
1093 % katakana "sa"
1094 begintsuglyph("uni30B5";181);
1095 kata.sa;
1096 tsu_render;
1097 endtsuglyph;
1098

```

[see page 210]

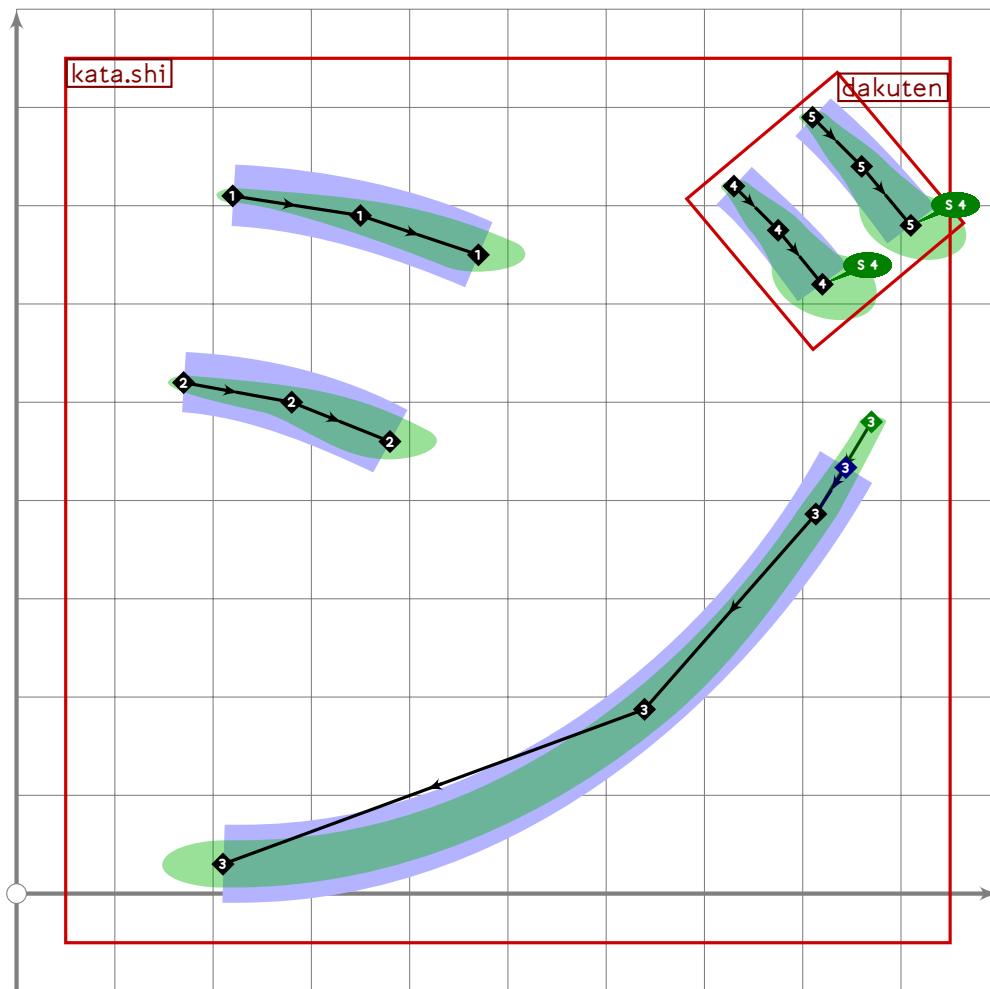


```

1099 % katakana "za"
1100 begintsuglyph("uni30B6";182);
1101   kata.sa;
1102   dakuten(identity rotated 20 shifted (850,740));
1103   tsu_render;
1104 endtsuglyph;
1105
1106 % katakana "shi"
1107 begintsuglyph("uni30B7";183);
1108   kata.shi;
1109   tsu_render;
1110 endtsuglyph;
1111

```

[see page 211]

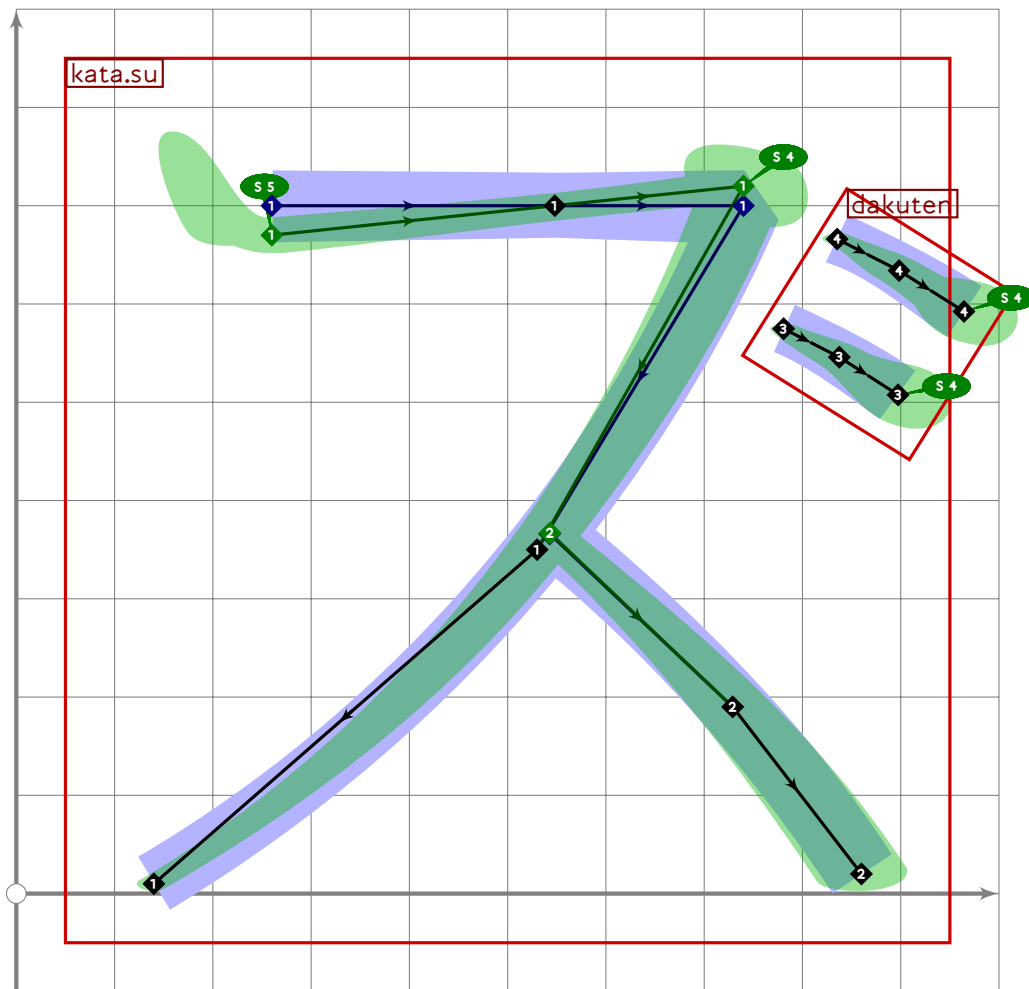


```

1112 % katakana "ji"
1113 begintsuglyph("uni30B8";184);
1114 kata.shi;
1115 dakuten(identity shifted (810,710));
1116 tsu_render;
1117 endtsuglyph;
1118
1119 % katakana "su"
1120 begintsuglyph("uni30B9";185);
1121 kata.su;
1122 tsu_render;
1123 endtsuglyph;
1124

```

[see page 212]

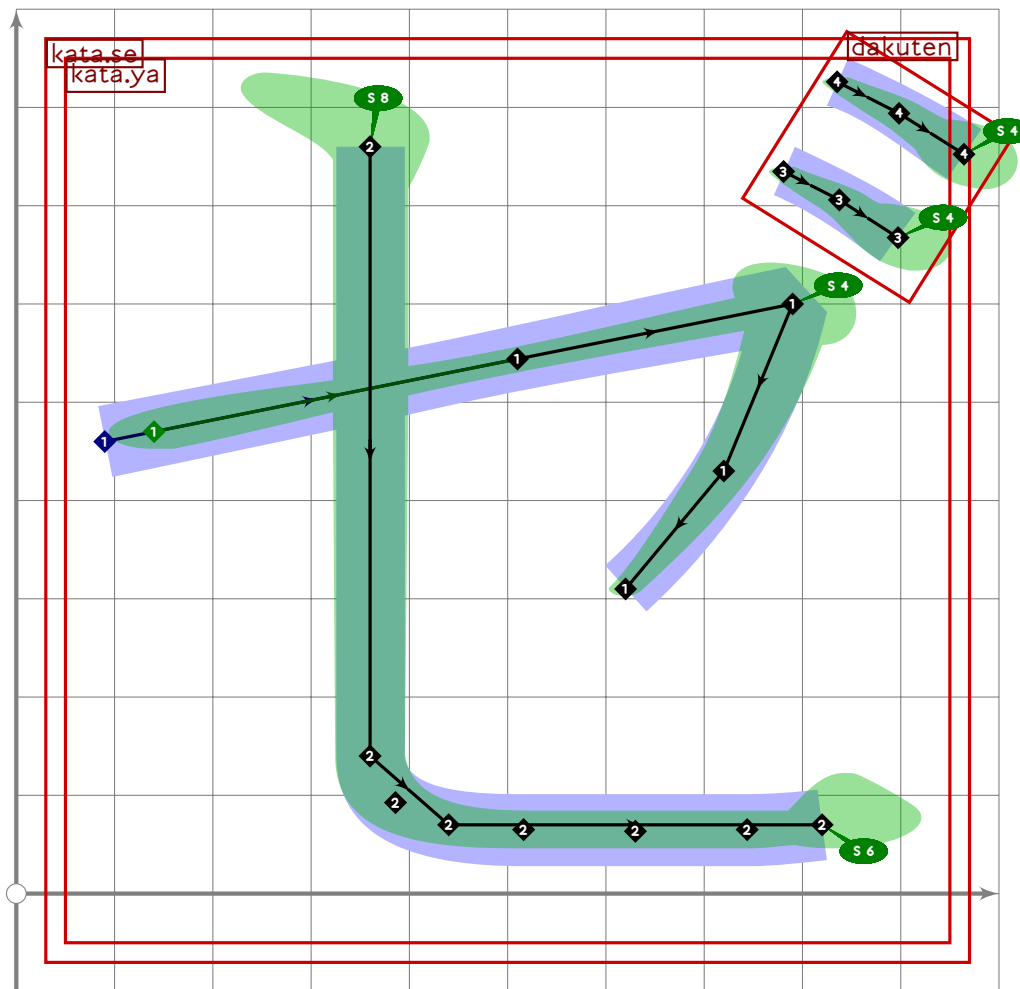


```

1125 % katakana "zu"
1126 begintsuglyph("uni30BA",186);
1127   kata.su;
1128   dakuten(identity rotated 18 shifted (860,590));
1129   tsu_render;
1130 endtsuglyph;
1131
1132 % katakana "se"
1133 begintsuglyph("uni30BB",187);
1134   kata.se;
1135   tsu_render;
1136 endtsuglyph;
1137

```

[see page 213]

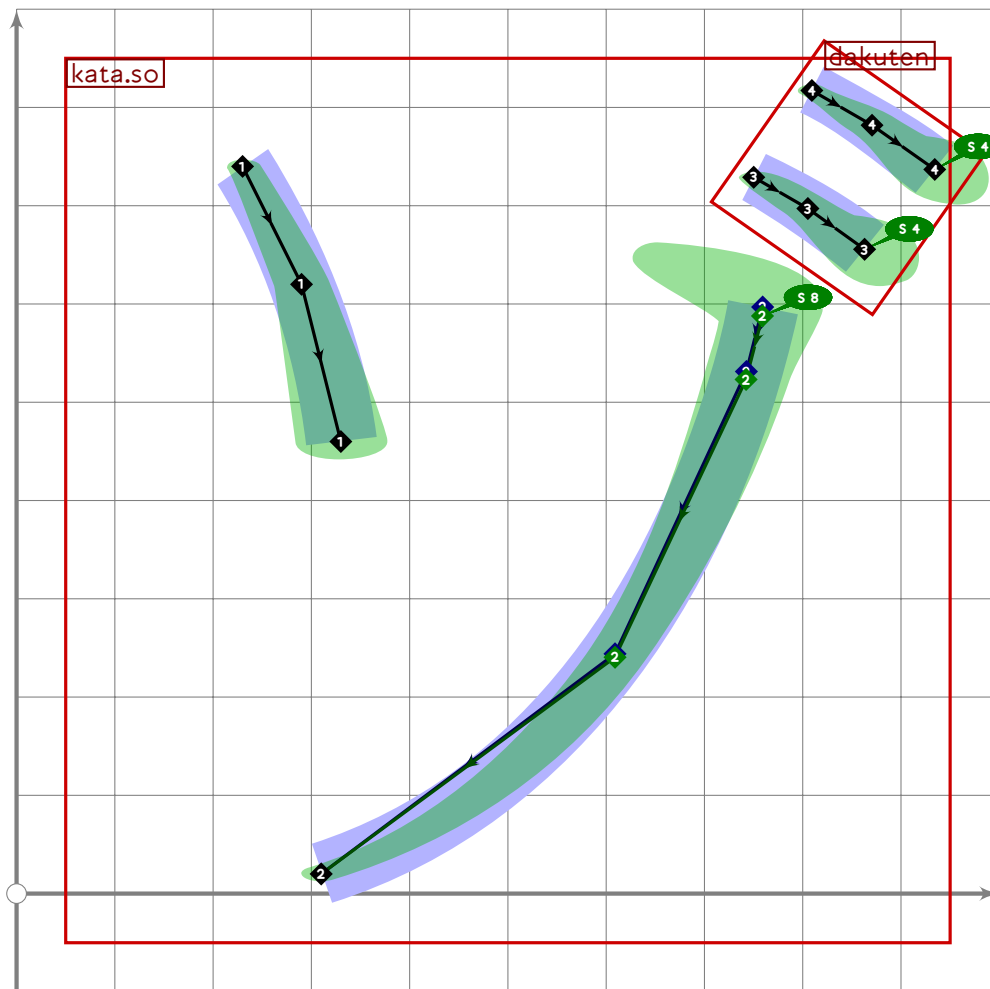


```

1138 % katakana "ze"
1139 begintsuglyph("uni30BC",188);
1140   kata.se;
1141   dakuten(identity rotated 18 shifted (860,750));
1142   tsu_render;
1143 endtsuglyph;
1144
1145 % katakana "so"
1146 begintsuglyph("uni30BD",189);
1147   kata.so;
1148   tsu_render;
1149 endtsuglyph;
1150

```

[see page 214]



```

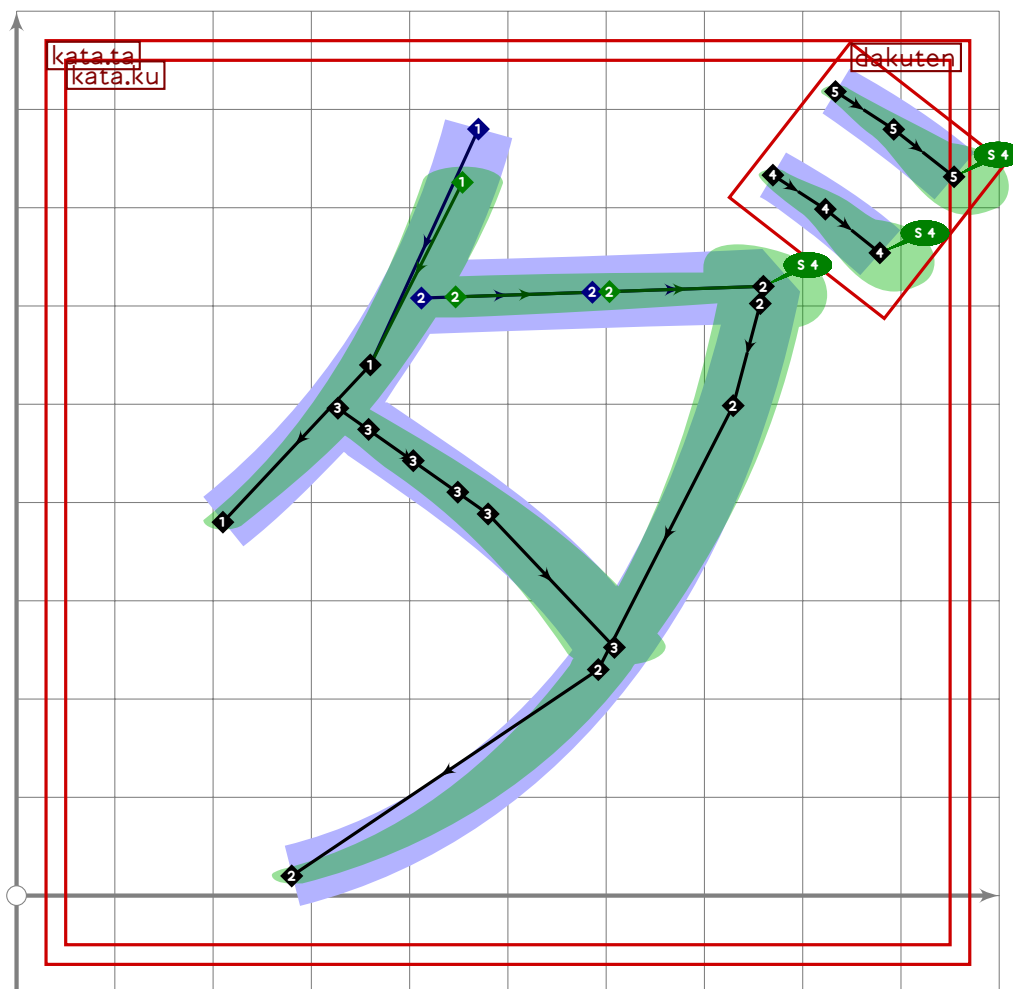
1151 % katakana "zo"
1152 begintsuglyph("uni30BE";190);
1153   kata.so;
1154   replace_strokep(0,subpath (0.5,infinity) of oldp);
1155   dakuten(identity rotated 15 shifted (830,740));
1156   tsu_render;
1157 endtsuglyph;
1158
1159 % katakana "ta"
1160 begintsuglyph("uni30BF";191);
1161   kata.ta;
1162   tsu_render;
1163 endtsuglyph;
1164

```

[see page 215]

U+30C0
tsuku.uni30C0

30

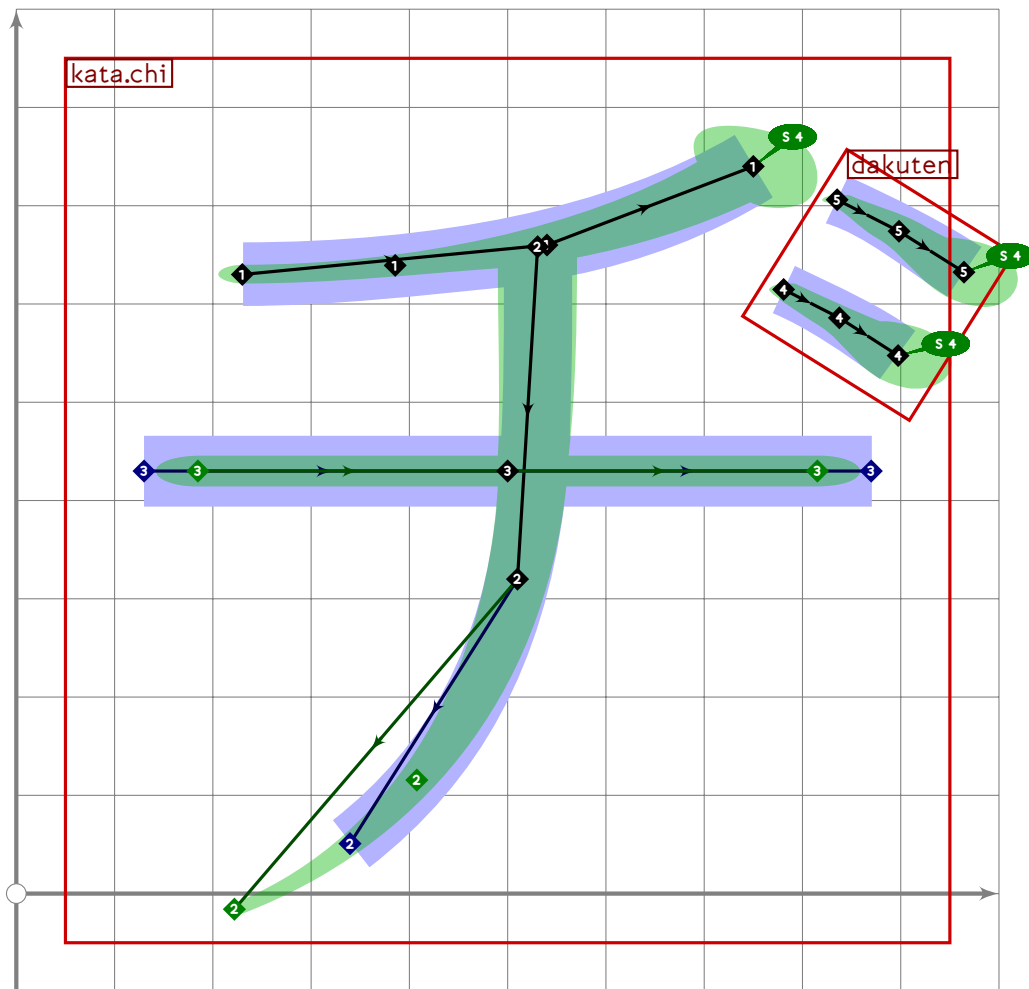


```

1165 % katakana "da"
1166 begintsuglyph("uni30C0",192);
1167 kata.ta;
1168 dakuten(identity rotated 12 shifted (850,740));
1169 tsu_render;
1170 endtsuglyph;
1171
1172 % katakana "chi"
1173 begintsuglyph("uni30C1",193);
1174 kata.chi;
1175 tsu_render;
1176 endtsuglyph;
1177

```

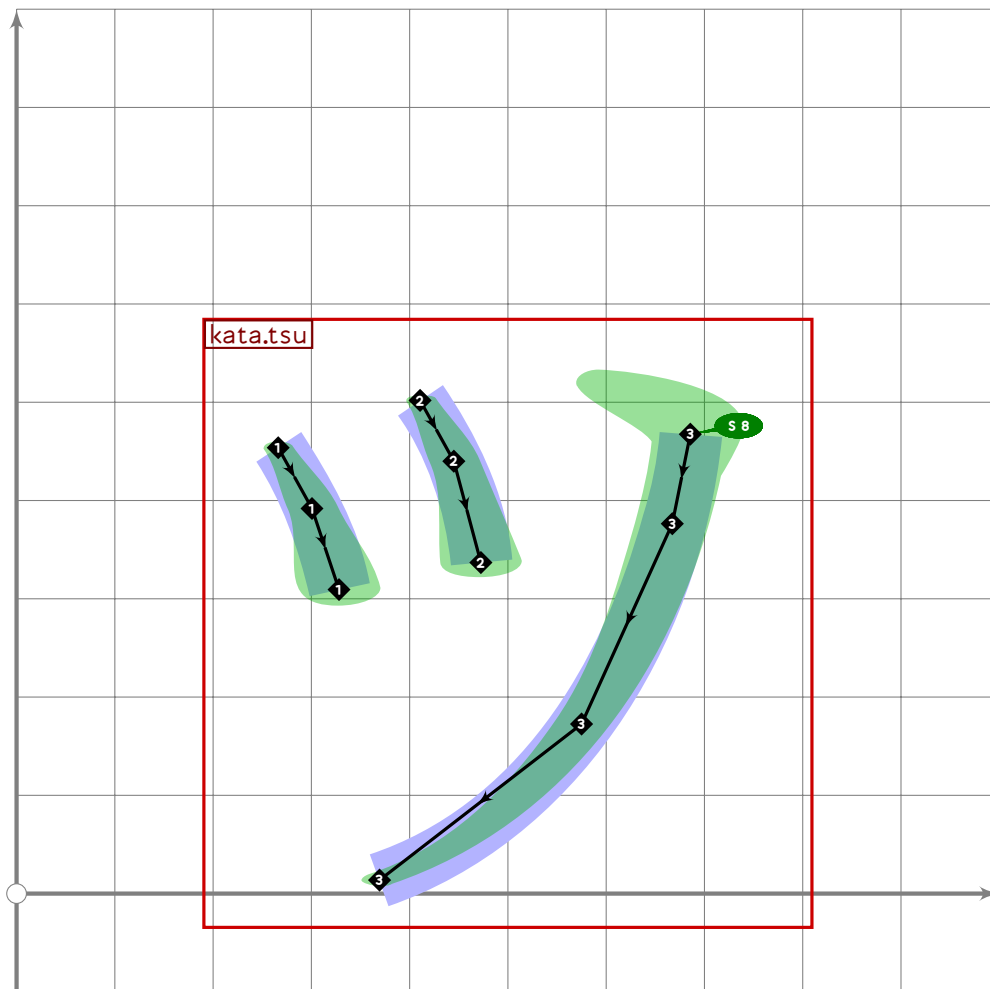
[see page 216]



```

1178 % katakana "dji"
1179 begintsuglyph("uni30C2",194);
1180 kata.chi;
1181 dakuten(identity rotated 18 shifted (860,630));
1182 tsu_render;
1183 endtsuglyph;
1184

```

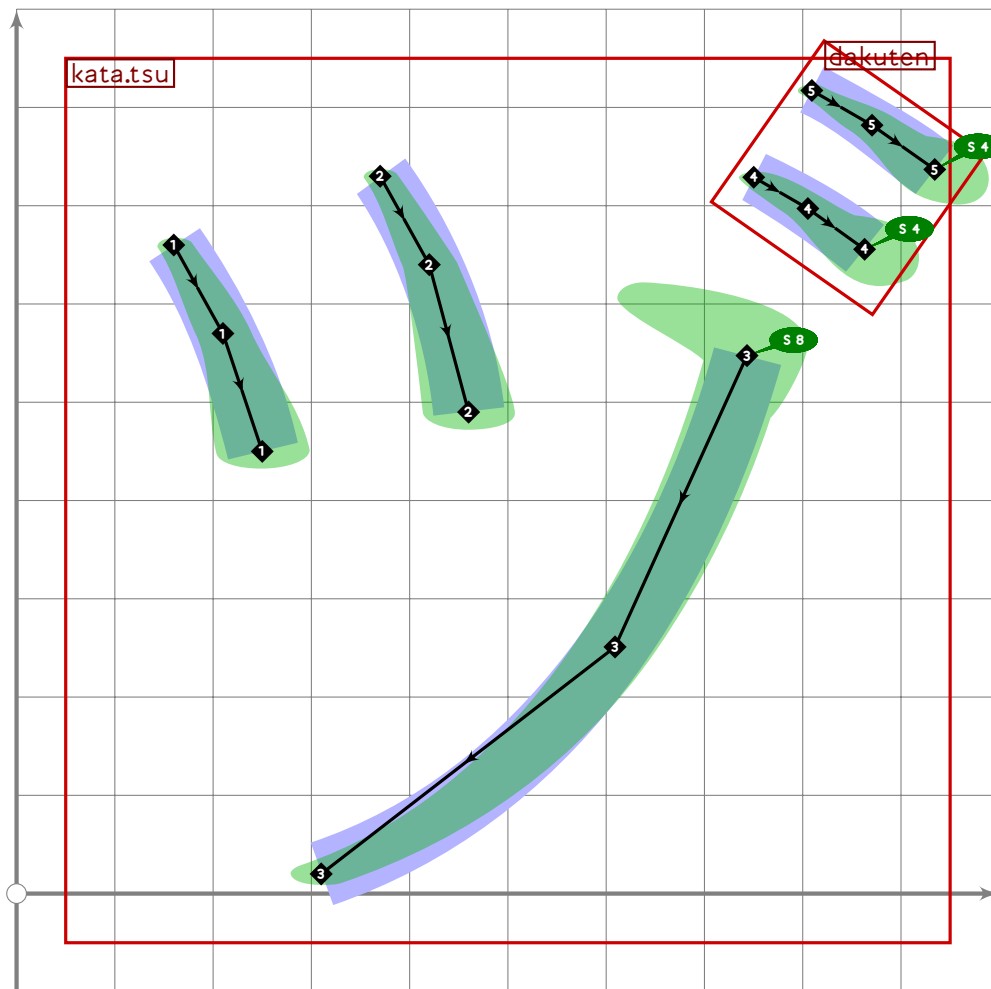


```

1185 % katakana "small tsu"
1186 begintsuglyph("uni30C3";195);
1187   tsu_xform(tsu_xf.smallkana)(kata.tsu);
1188   tsu_render;
1189 endtsuglyph;
1190
1191 % katakana "tsu"
1192 begintsuglyph("uni30C4";196);
1193   kata.tsu;
1194   tsu_render;
1195 endtsuglyph;
1196

```

[see page 217]

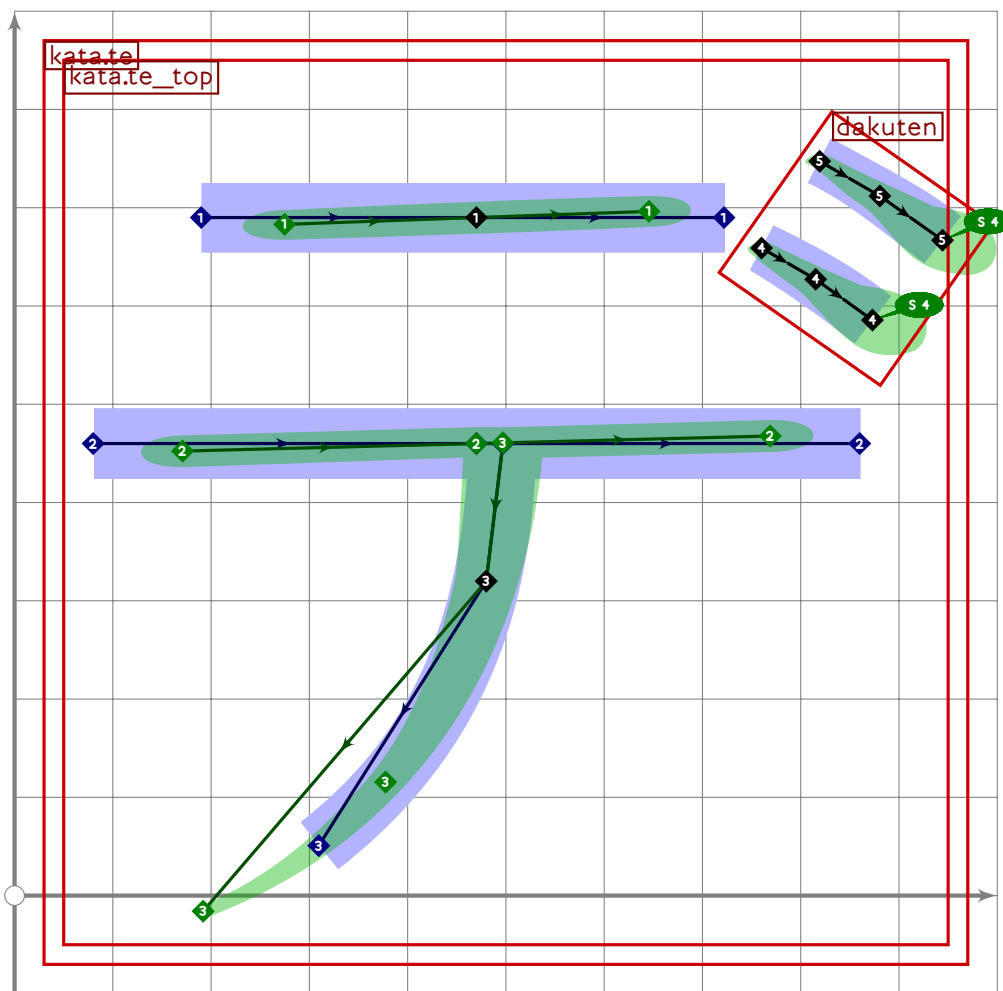


```

1197 % katakana "dzu"
1198 begintsuglyph("uni30C5";197);
1199 kata.tsu;
1200 replace_strokep(0,subpath (1,infinity) of oldp);
1201 dakuten(identity rotated 15 shifted (830,740));
1202 tsu_render;
1203 endtsuglyph;
1204
1205 % katakana "te"
1206 begintsuglyph("uni30C6";198);
1207 kata.te;
1208 tsu_render;
1209 endtsuglyph;
1210

```

[see page 218]

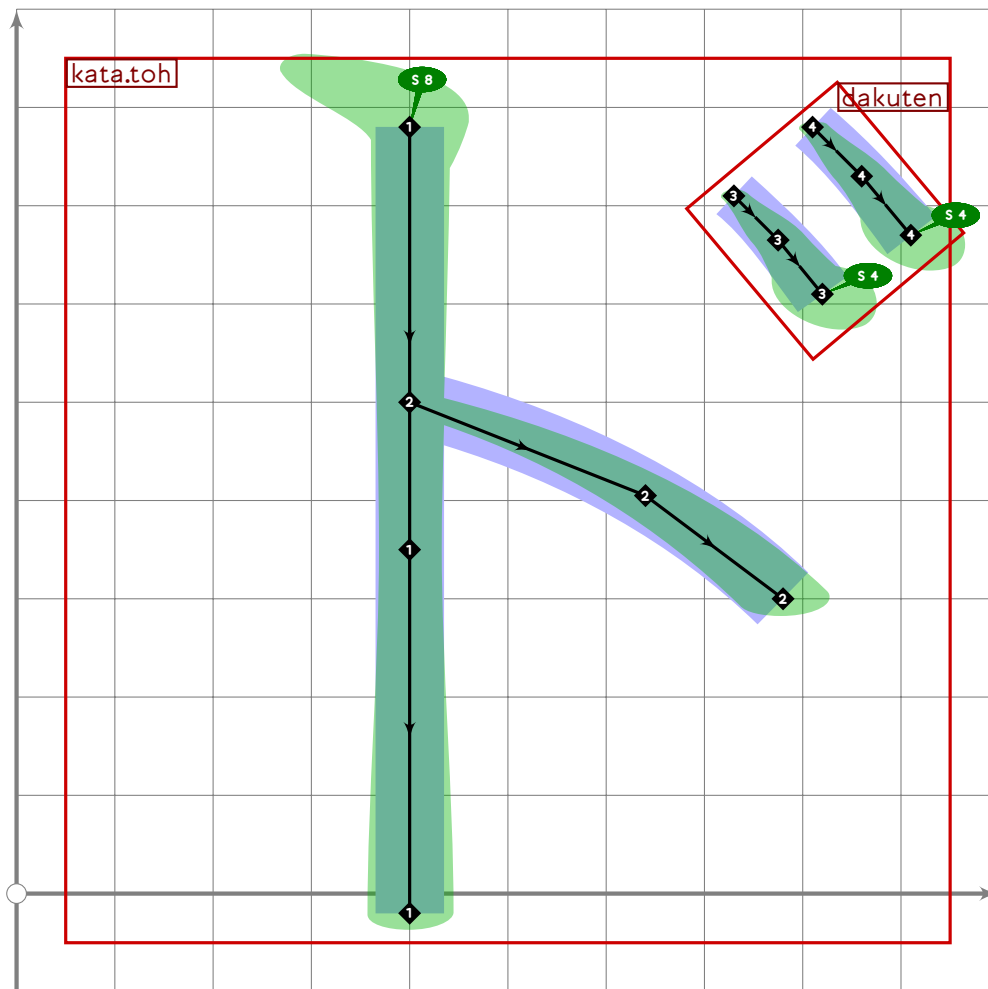


```

1211 % katakana "de"
1212 beginsuglyph("uni30C7",199);
1213   kata.te;
1214   replace_strokep(-2,(subpath (0,19) of oldp) shifted (-30,0));
1215   replace_strokep(-1,oldp shifted (-30,0));
1216   replace_strokep(0,oldp shifted (-30,0));
1217   dakuten(identity rotated 15 shifted (840,670));
1218   tsu_render;
1219 endtsuglyph;
1220
1221 % katakana "to"
1222 beginsuglyph("uni30C8",200);
1223   kata.toh;
1224   tsu_render;
1225 endtsuglyph;
1226

```

[see page 219]



```

1227 % katakana "do"
1228 begintsuglyph("uni30C9";201);
1229 kata.toh;
1230 dakuten(identity shifted (810,700));
1231 tsu_render;
1232 endtsuglyph;
1233

```

```

1234 % katakana "na"
1235 begintsuglyph("uni30CA";202);
1236 kata.na;
1237 tsu_render;
1238 endtsuglyph;
1239

```

[see page 220]

```

1240 % katakana "ni"
1241 begintsuglyph("uni30CB";203);
1242 kata.ni;
1243 tsu_render;
1244 endtsuglyph;
1245

```

[see page 221]

```

1246 % katakana "nu"
1247 begintsuglyph("uni30CC";204);

```

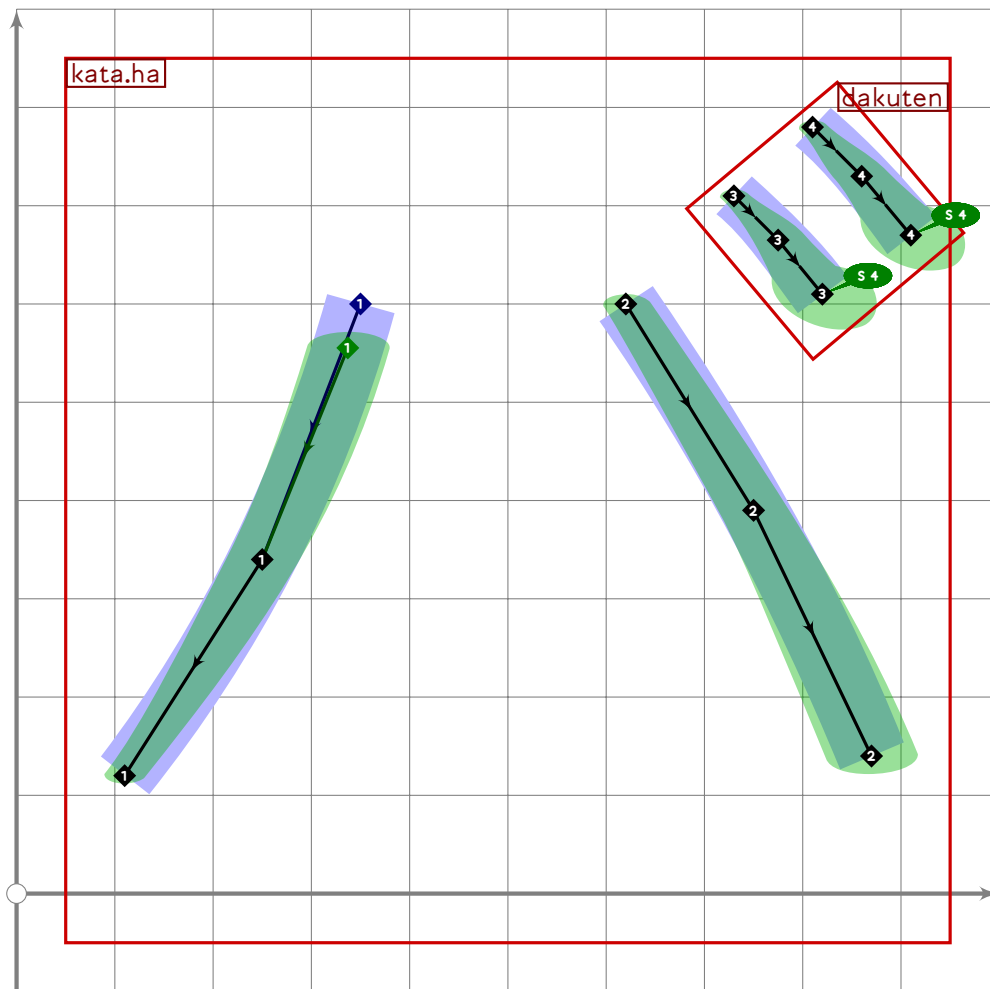
[see page 222]

```
1248 kata.nu;  
1249 tsu_render;  
1250 endtsuglyph;  
1251  
1252 % katakana "ne"  
1253 begintsuglyph("uni30CD",205);  
1254 kata.ne;  
1255 tsu_render;  
1256 endtsuglyph;  
1257  
1258 % katakana "no"  
1259 begintsuglyph("uni30CE",206);  
1260 kata.no;  
1261 tsu_render;  
1262 endtsuglyph;  
1263  
1264 % katakan "ha"  
1265 begintsuglyph("uni30CF",207);  
1266 kata.ha;  
1267 tsu_render;  
1268 endtsuglyph;  
1269
```

[see page 223]

[see page 224]

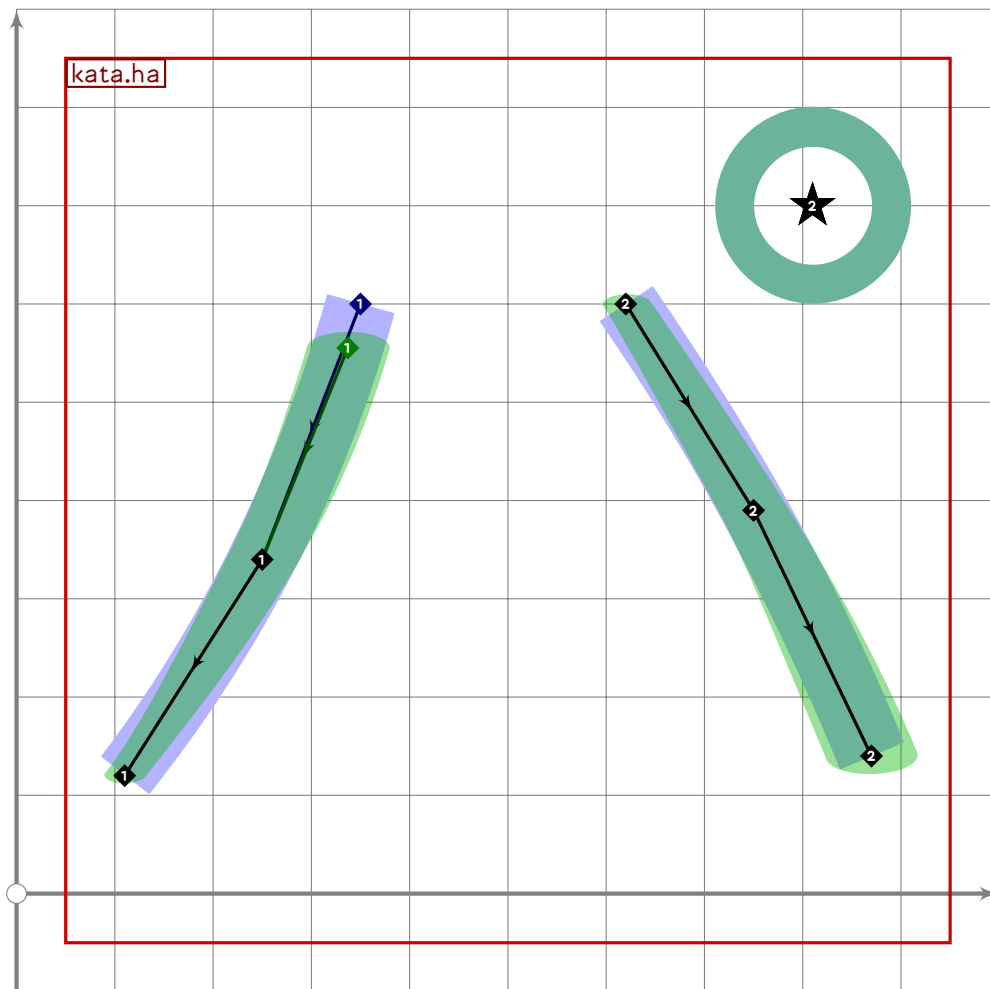
[see page 225]



```

1270 % katakan "ba"
1271 begintsuglyph("uni30D0";208);
1272   kata.ha;
1273   dakuten(identity shifted (810,700));
1274   tsu_render;
1275 endtsuglyph;
1276

```

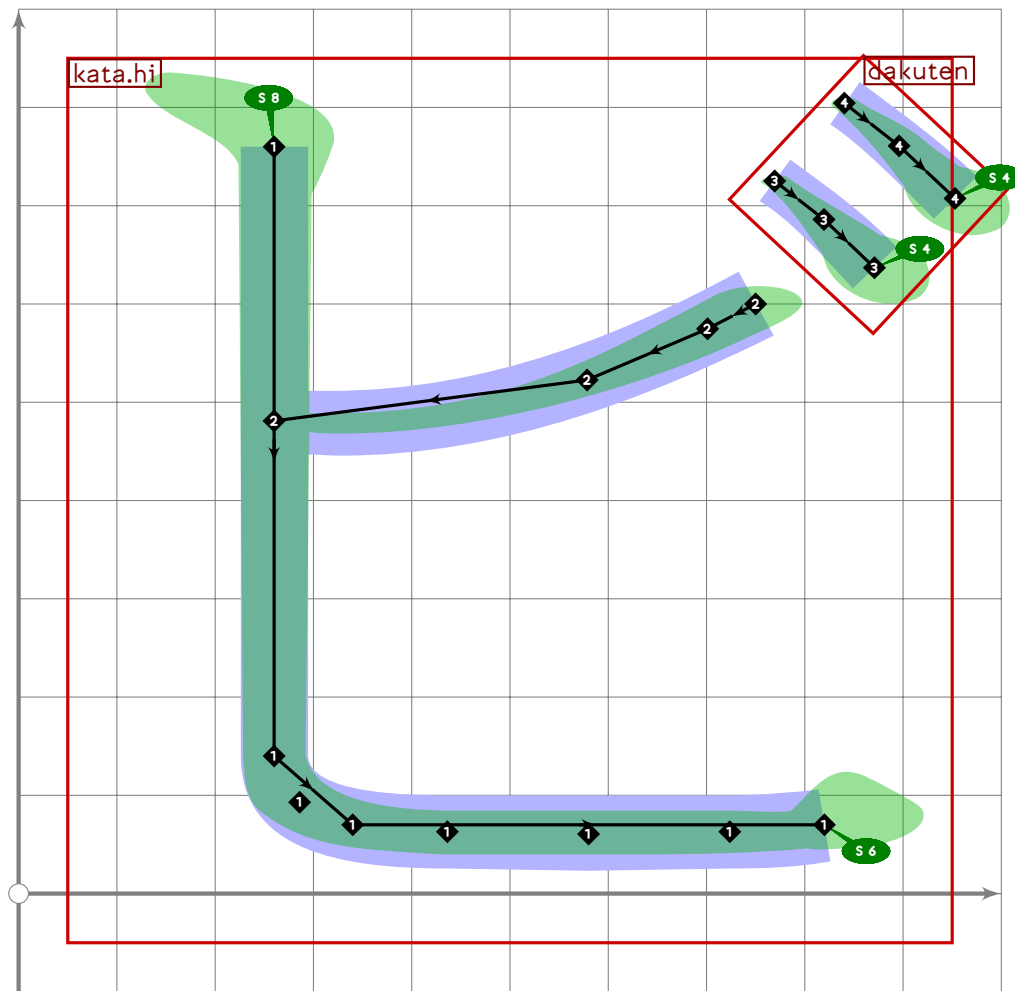


```

1277 % katakan "pa"
1278 begintsuglyph("uni30D1";209);
1279 kata.ha;
1280 handakuten((810,700));
1281 tsu_render;
1282 endtsuglyph;
1283
1284 % katakana "hi"
1285 begintsuglyph("uni30D2";210);
1286 kata.hi;
1287 tsu_render;
1288 endtsuglyph;
1289

```

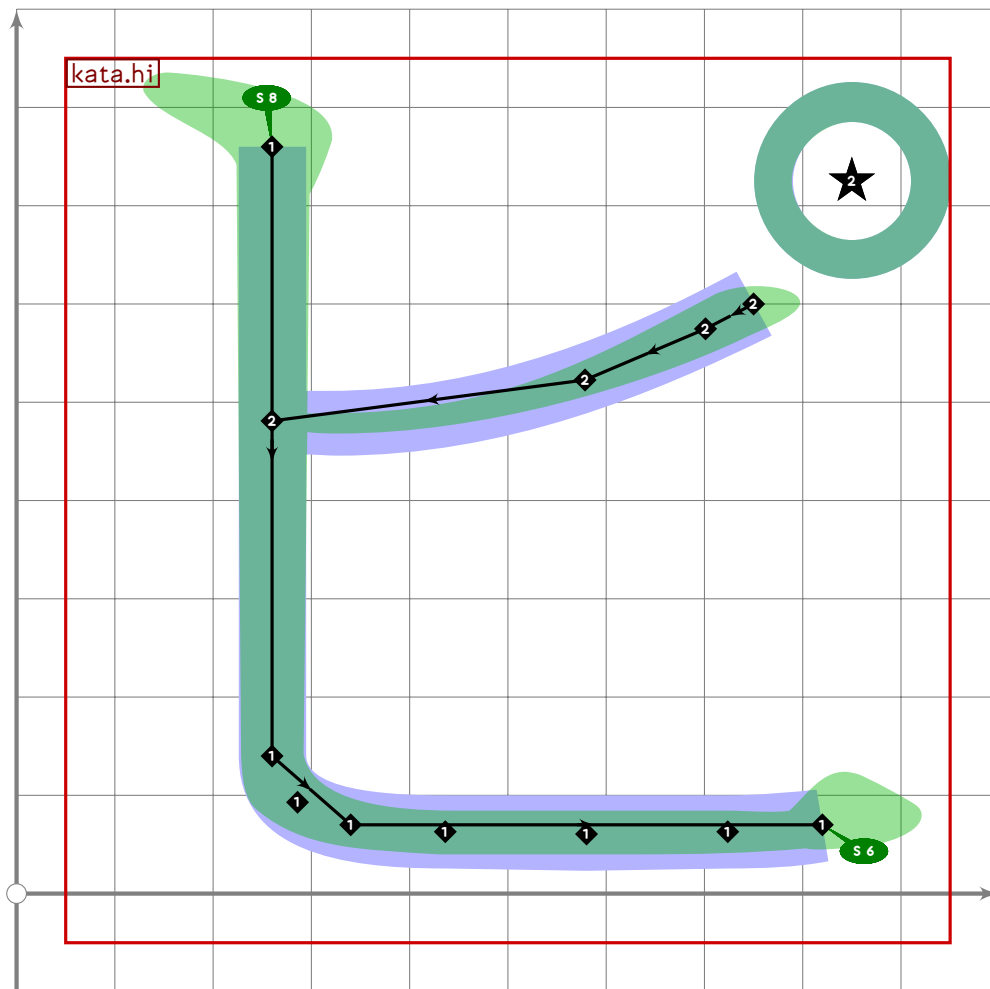
[see page 226]



```

1290 % katakana "bi"
1291 begintsuglyph("uni30D3";211);
1292   kata.hi;
1293   dakuten(identity rotated 7 shifted (850,725));
1294   tsu_render;
1295 endtsuglyph;
1296

```

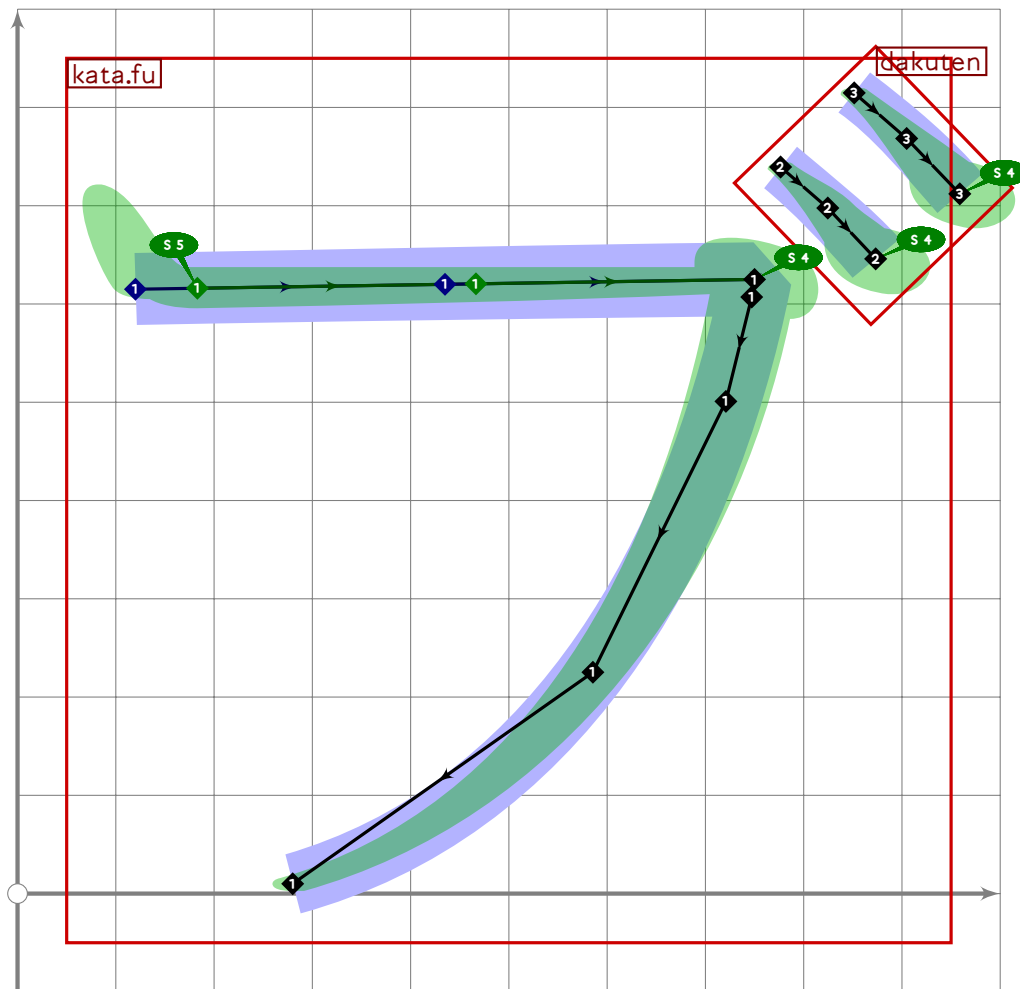


```

1297 % katakana "pi"
1298 begintsuglyph("uni30D4";212);
1299 kata.hi;
1300 handakuten((850,725));
1301 tsu_render;
1302 endtsuglyph;
1303
1304 % katakana "fu"
1305 begintsuglyph("uni30D5";213);
1306 kata.fu;
1307 tsu_render;
1308 endtsuglyph;
1309

```

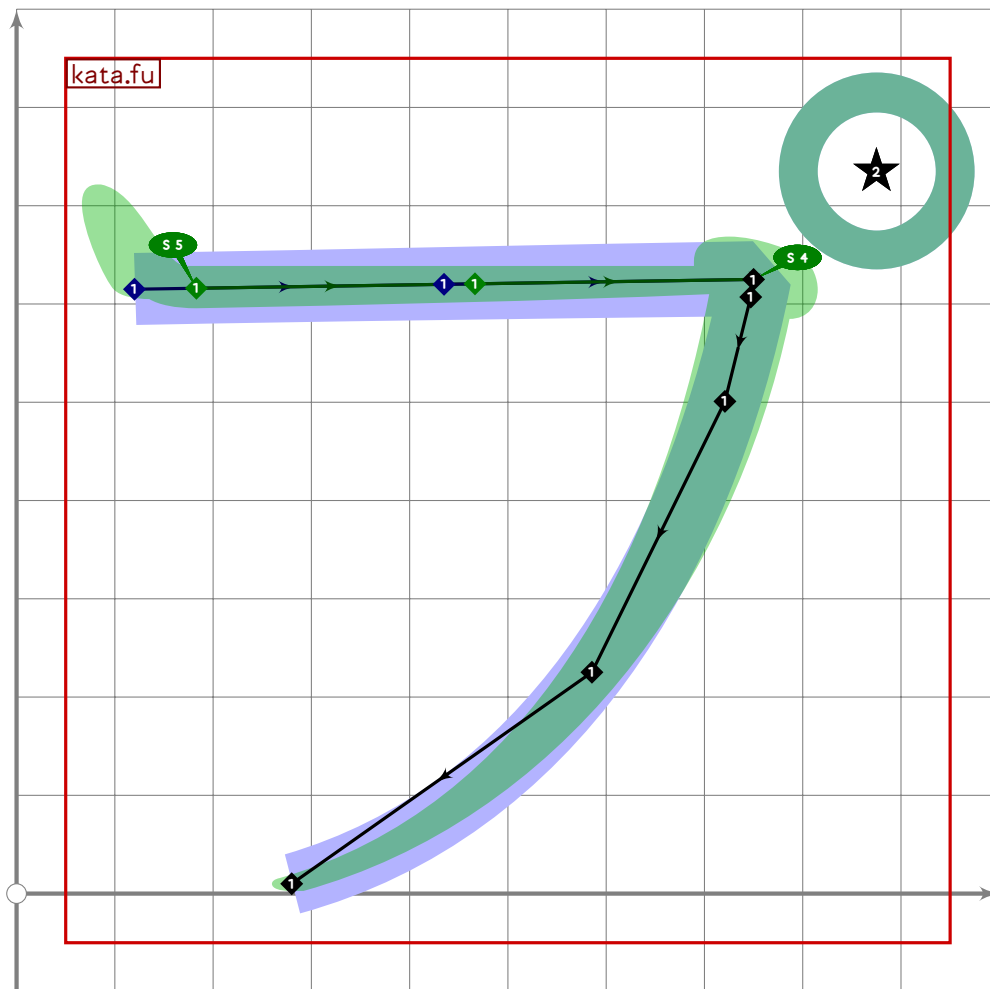
[see page 227]



```

1310 % katakana "bu"
1311 begintsuglyph("uni30D6";214);
1312 kata.fu;
1313 replace_strokep(0,oldp shifted (-40,-10));
1314 dakuten(identity rotated 4 shifted (857,735));
1315 tsu_render;
1316 endtsuglyph;
1317

```

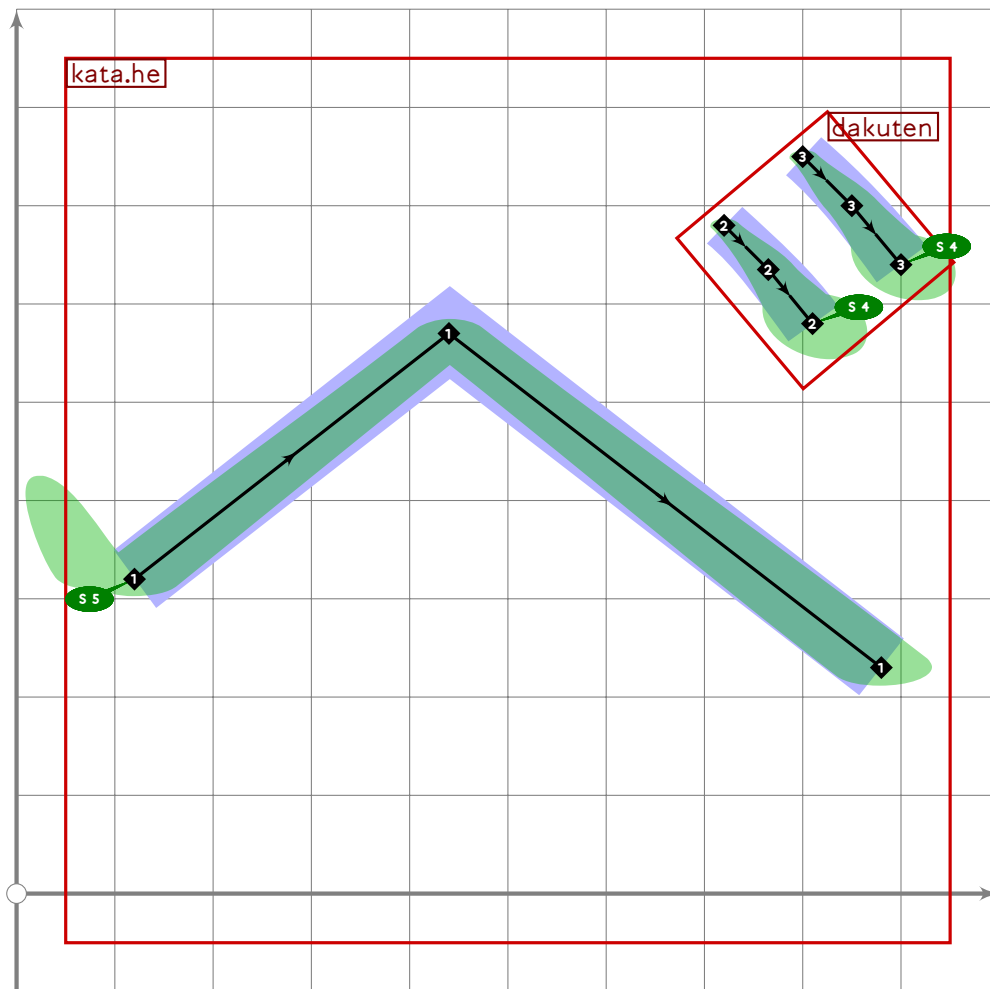


```

1318 % katakana "pu"
1319 begintsuglyph("uni30D7";215);
1320 kata.fu;
1321 replace_strokep(0,oldp shifted (-40,-10));
1322 handakuten((875,735));
1323 tsu_render;
1324 endtsuglyph;
1325
1326 % katakana "he"
1327 begintsuglyph("uni30D8";216);
1328 kata.he;
1329 tsu_render;
1330 endtsuglyph;
1331

```

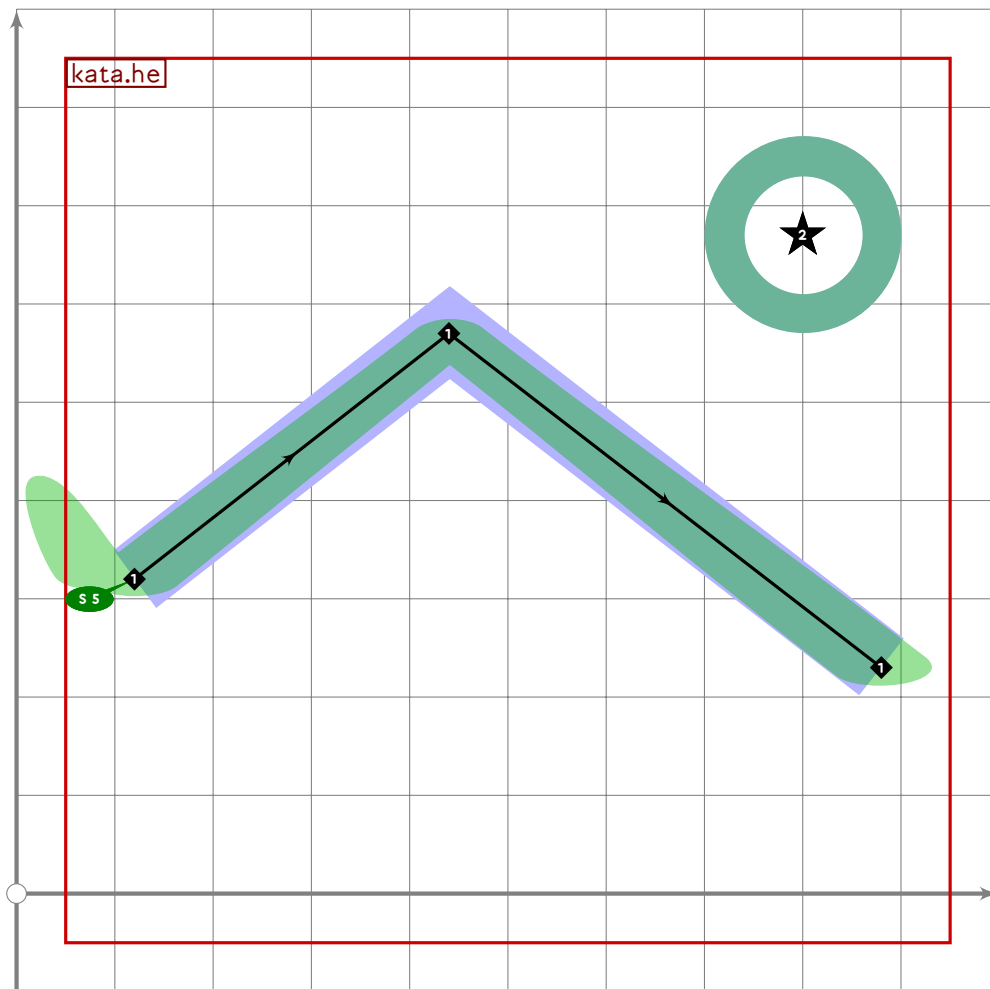
[see page 228]



```

1332 % katakana "be"
1333 begintsuglyph("uni30D9";217);
1334 kata.he;
1335 dakuten(identity shifted (800,670));
1336 tsu_render;
1337 endtsuglyph;
1338

```

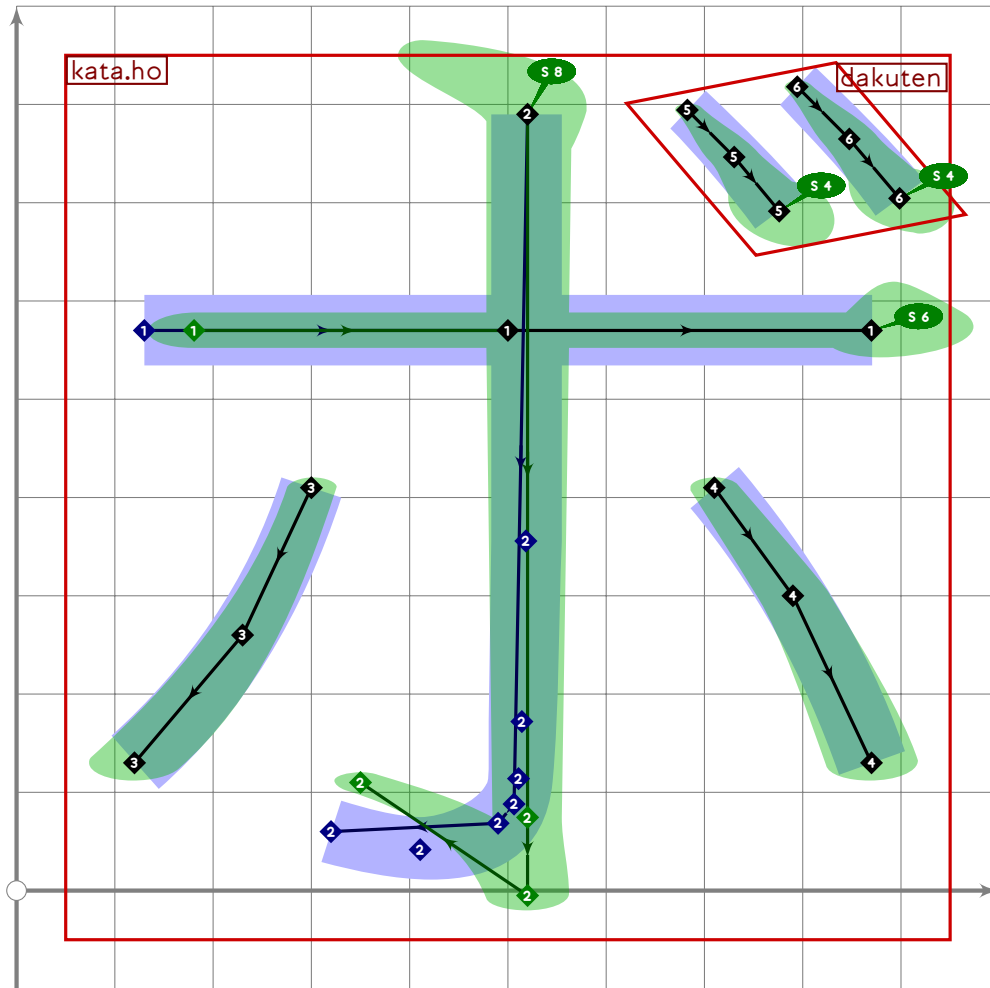


```

1339 % katakana "pe"
1340 begintsuglyph("uni30DA";218);
1341   kata.he;
1342   handakuten((800,670));
1343   tsu_render;
1344 endtsuglyph;
1345
1346 % katakana "ho"
1347 begintsuglyph("uni30DB";219);
1348   kata.ho;
1349   tsu_render;
1350 endtsuglyph;
1351

```

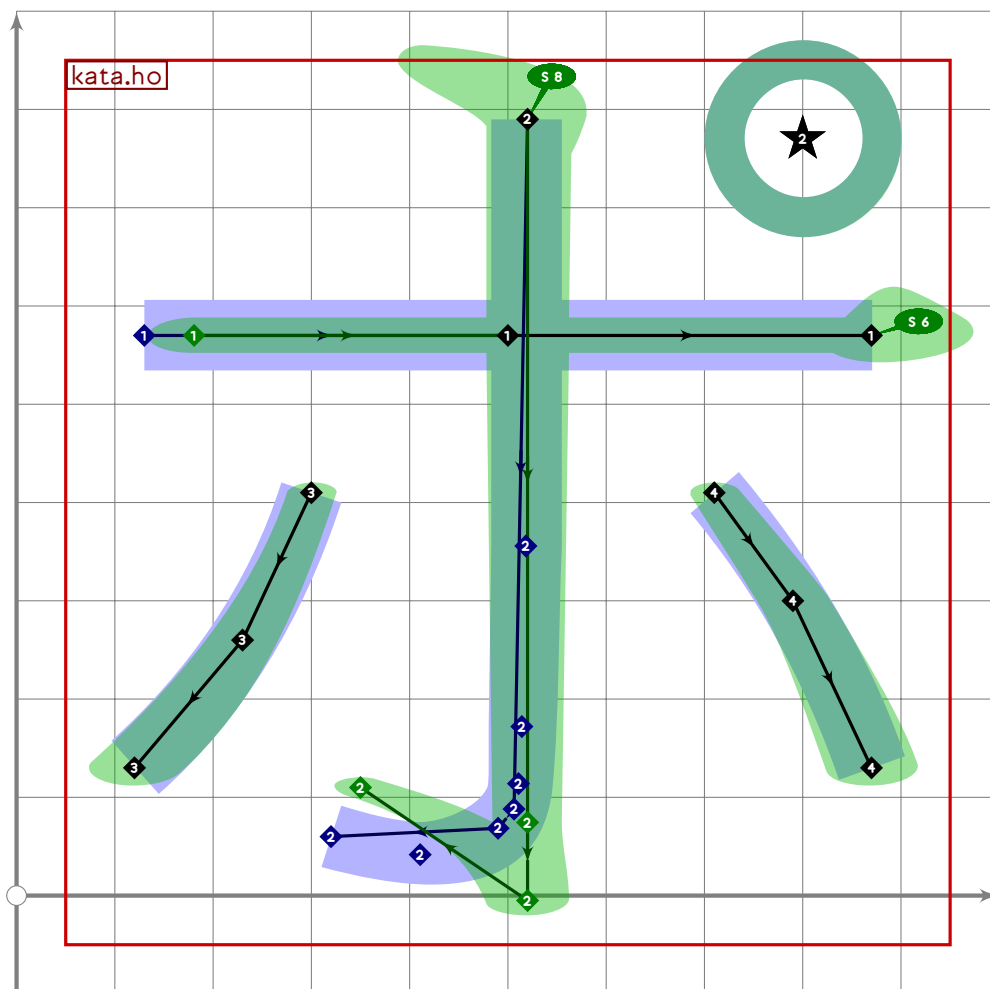
[see page 229]



```

1352 % katakana "bo"
1353 begintsuglyph("uni30DC",220);
1354   kata.ho;
1355   dakuten(identity
1356     rotated -25 slanted -0.3 xyscaled (1.2,0.8) shifted (780,760));
1357   tsu_render;
1358 endtsuglyph;
1359

```



```

1360 % katakana "po"
1361 begintsuglyph("uni30DD",221);
1362   kata.ho;
1363   handakuten((800,770));
1364   tsu_render;
1365 endtsuglyph;
1366
1367 % katakana "ma"
1368 begintsuglyph("uni30DE",222);
1369   kata.ma;
1370   tsu_render;
1371 endtsuglyph;
1372
1373 % katakana "mi"
1374 begintsuglyph("uni30DF",223);
1375   kata.mi;
1376   tsu_render;
1377 endtsuglyph;
1378
1379 % katakana "mu"
1380 begintsuglyph("uni30E0",224);

```

[see page 230]

[see page 231]

[see page 232]

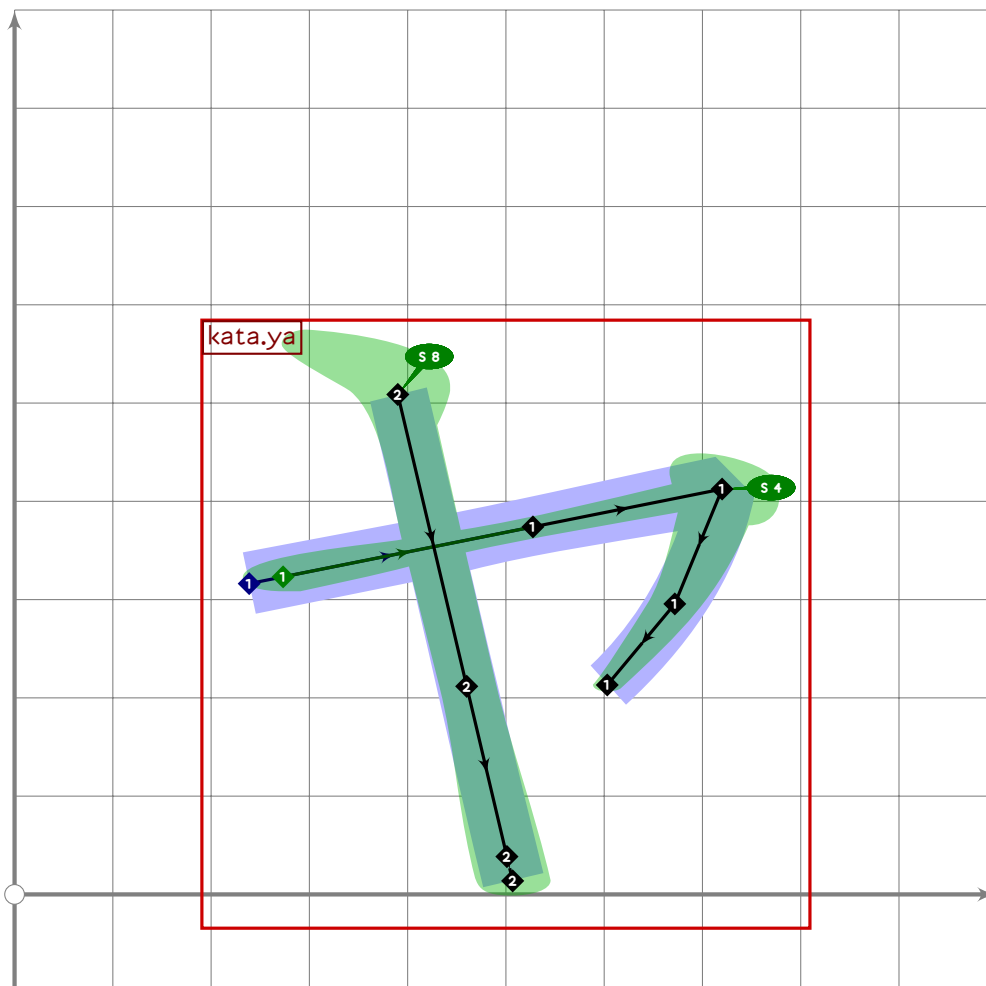

```

1381 kata.mu;
1382 tsu_render;
1383 endtsuglyph;
1384
1385 % katakana "me"
1386 begintuglyph("uni30E1";225);
1387 kata.me;
1388 tsu_render;
1389 endtsuglyph;
1390
1391 % katakana "mo"
1392 begintuglyph("uni30E2";226);
1393 kata.mo;
1394 tsu_render;
1395 endtsuglyph;
1396

```

[see page 233]

[see page 234]



```

1397 % katakana "small ya"
1398 begintuglyph("uni30E3";227);
1399 tsu_xform(tsu_xf.smallkana)(kata.ya);
1400 tsu_render;
1401 endtsuglyph;

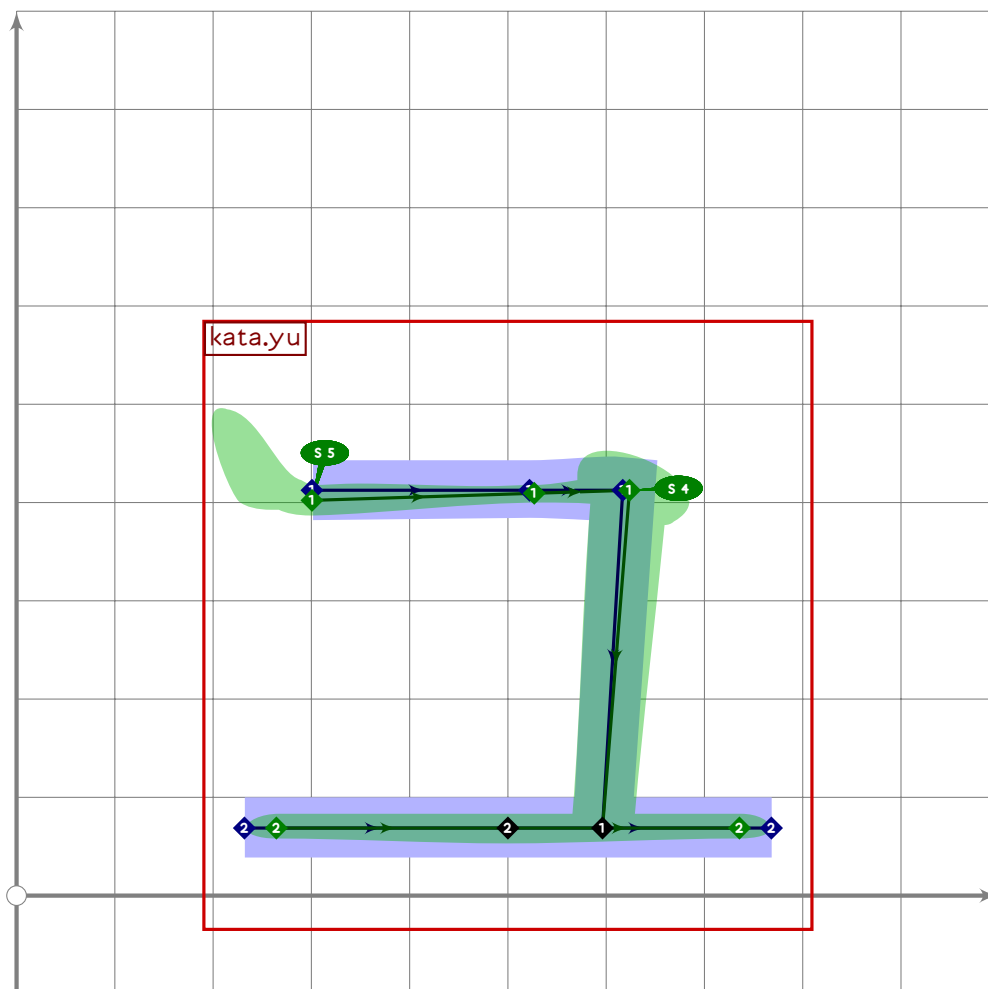
```

```

1402
1403 % katakana "ya"
1404 begint Suglyph("uni30E4";228);
1405   kata.ya;
1406   tsu_render;
1407 endtsuglyph;
1408

```

[see page 235]

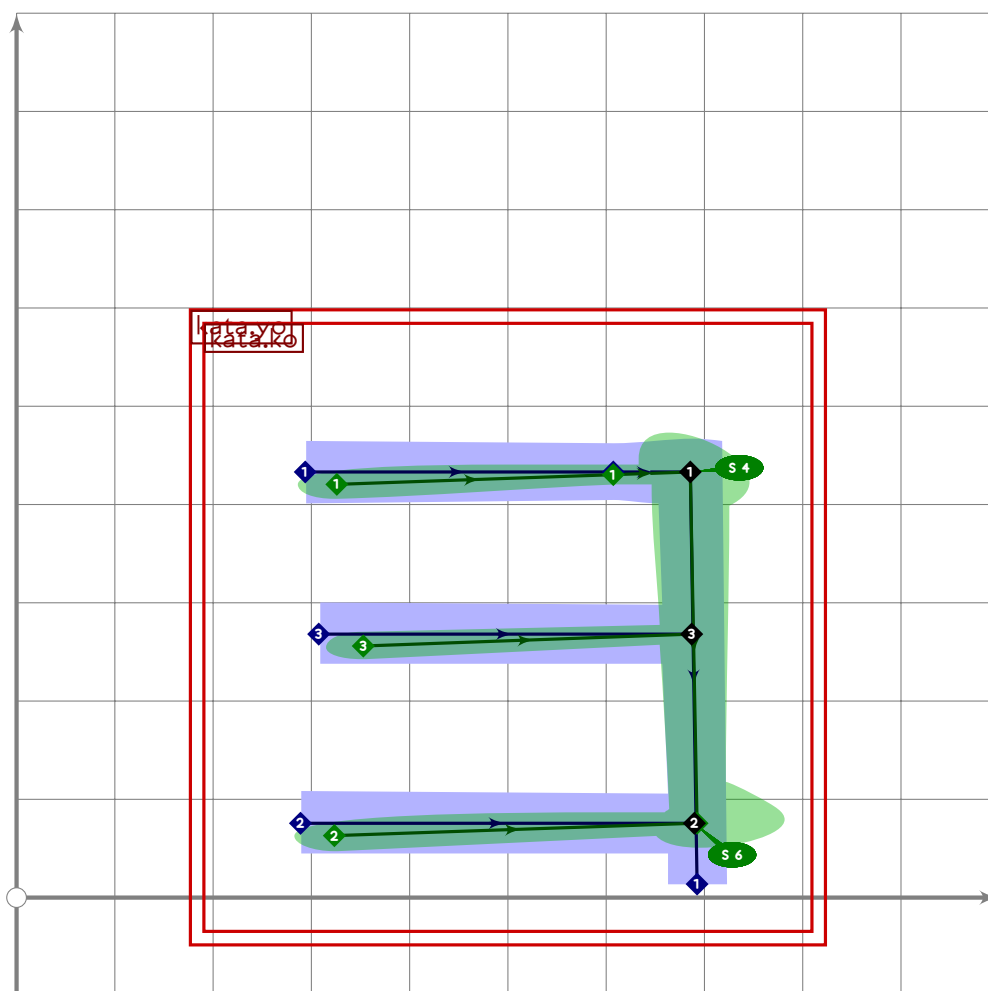


```

1409 % katakana "small yu"
1410 begint Suglyph("uni30E5";229);
1411   tsu_xform(tsu_xf.smallkana)(kata.yu);
1412   tsu_render;
1413 endtsuglyph;
1414
1415 % katakana "yu"
1416 begint Suglyph("uni30E6";230);
1417   kata.yu;
1418   tsu_render;
1419 endtsuglyph;
1420

```

[see page 236]



```

1421 % katakana "small yo"
1422 begintsuglyph("uni30E7";231);
1423   tsu_xform(tsu_xf.smallkana)(kata.yo);
1424   tsu_render;
1425 endtsuglyph;
1426
1427 % katakana "yo"
1428 begintsuglyph("uni30E8";232);
1429   kata.yo;
1430   tsu_render;
1431 endtsuglyph;
1432
1433 % katakana "ra"
1434 begintsuglyph("uni30E9";233);
1435   kata.ra;
1436   tsu_render;
1437 endtsuglyph;
1438
1439 % katakana "ri"
1440 begintsuglyph("uni30EA";234);
1441   kata.ri;

```

[see page 237]

[see page 238]

[see page 239]

```

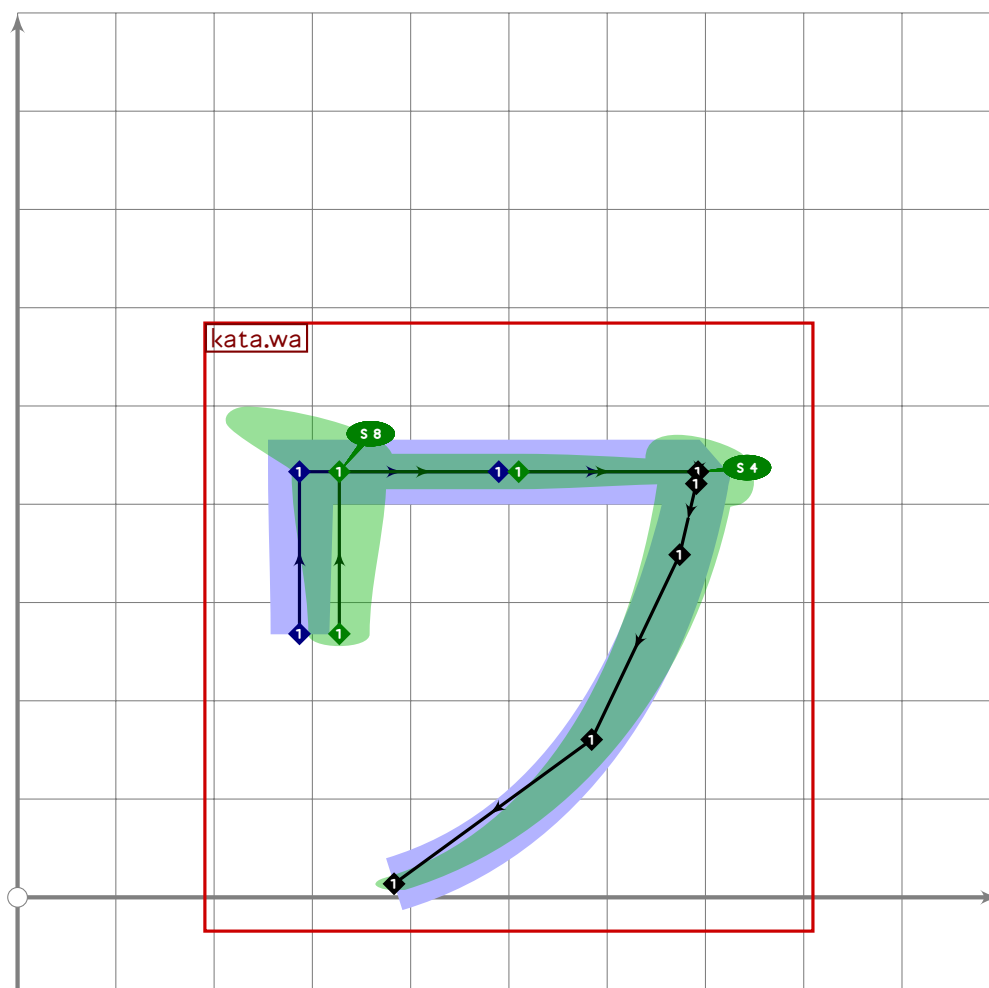
1442 tsu_render;
1443 endtsuglyph;
1444
1445 % katakana "ru"
1446 begintsuglyph("uni30EB";235);
1447 kata.ru;
1448 tsu_render;
1449 endtsuglyph;
1450
1451 % katakana "re"
1452 begintsuglyph("uni30EC";236);
1453 kata.re;
1454 tsu_render;
1455 endtsuglyph;
1456
1457 % katakana "ro"
1458 begintsuglyph("uni30ED";237);
1459 kata.ro;
1460 tsu_render;
1461 endtsuglyph;
1462

```

[see page 240]

[see page 241]

[see page 242]



```

1463 % katakana "small wa"
1464 begintsuglyph("uni30EE";238);
1465   tsu_xform(tsu_xf.smallkana)(kata.wa);
1466   tsu_render;
1467 endtsuglyph;
1468
1469 % katakana "wa"
1470 begintsuglyph("uni30EF";239);
1471   kata.wa;
1472   tsu_render;
1473 endtsuglyph;
1474
1475 % katakana "wi"
1476 begintsuglyph("uni30F0";240);
1477   kata.wi;
1478   tsu_render;
1479 endtsuglyph;
1480
1481 % katakana "we"
1482 begintsuglyph("uni30F1";241);
1483   kata.we;
1484   tsu_render;
1485 endtsuglyph;
1486
1487 % katakana "wo"
1488 begintsuglyph("uni30F2";242);
1489   kata.wo;
1490   tsu_render;
1491 endtsuglyph;
1492
1493 % katakana "n"
1494 begintsuglyph("uni30F3";243);
1495   kata.n;
1496   tsu_render;
1497 endtsuglyph;
1498

```

[see page 243]

[see page 244]

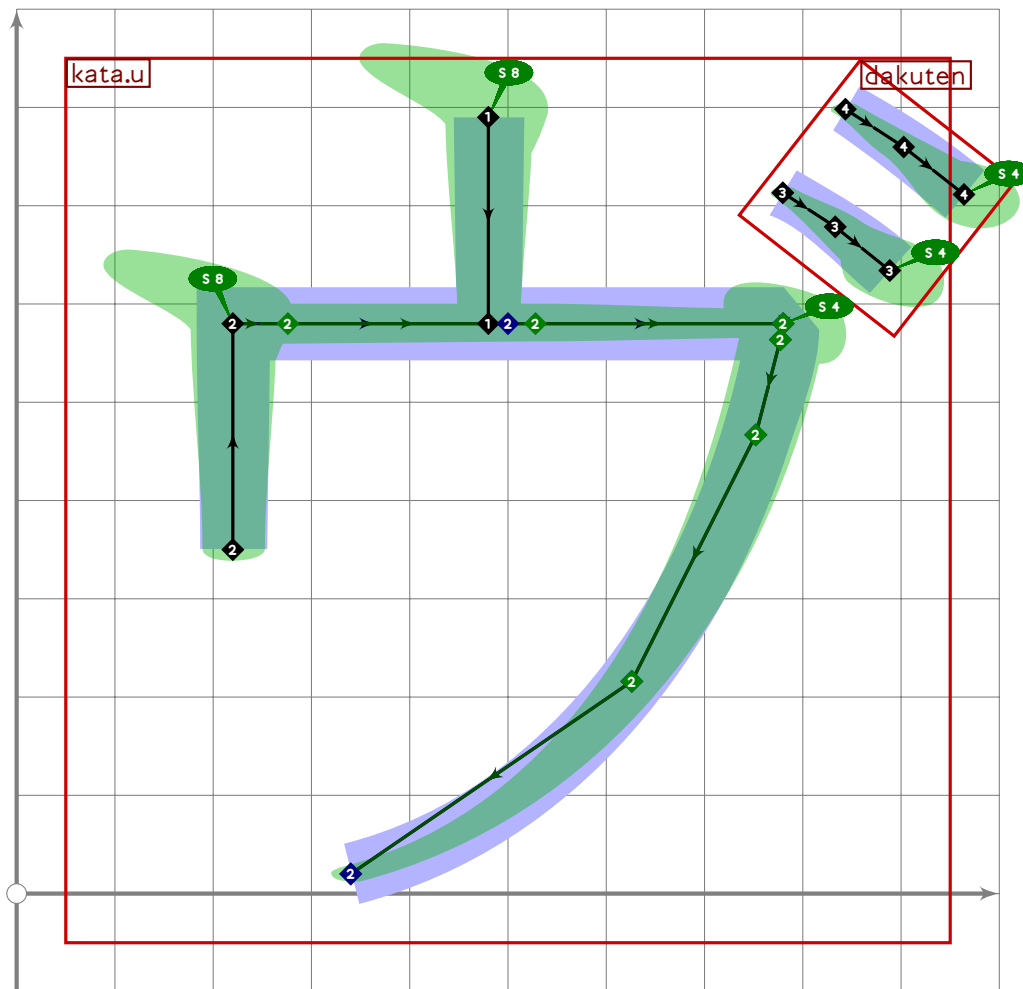
[see page 245]

[see page 246]

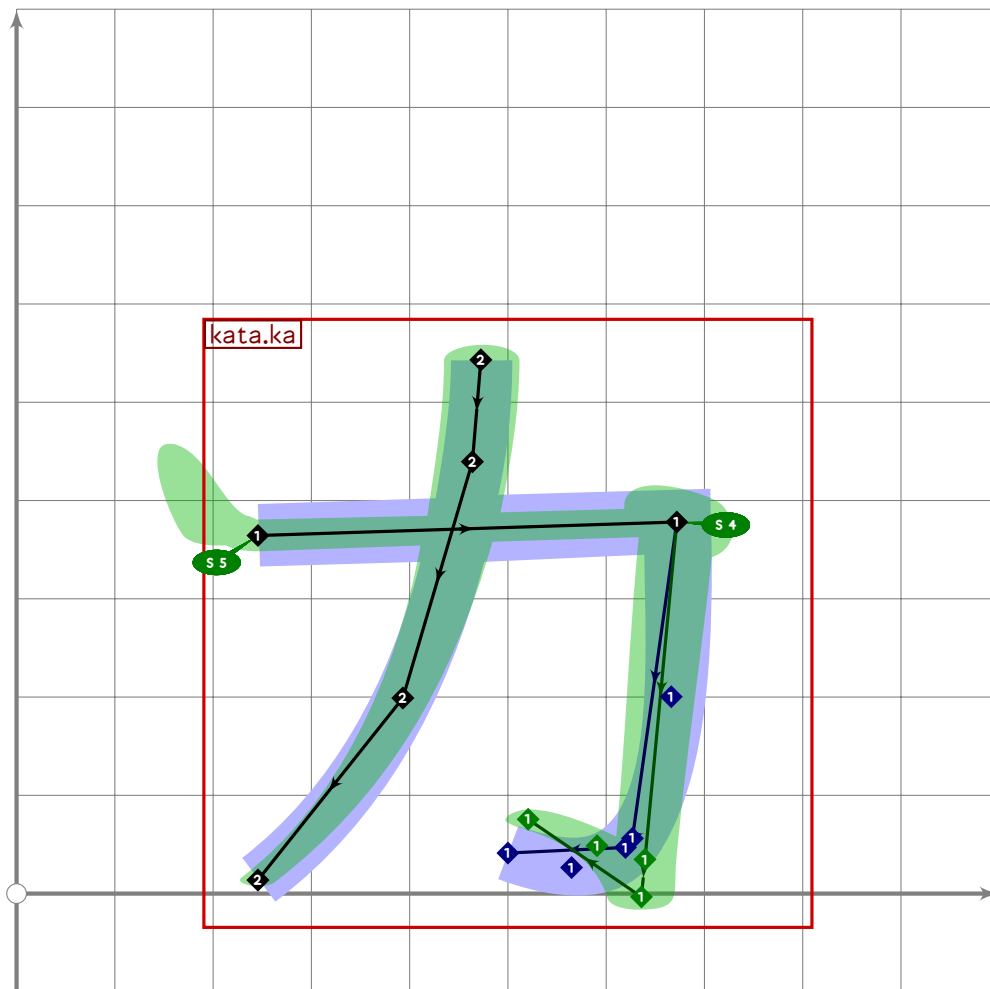
[see page 247]

U+30F4
tsuku.uni30F4

30



```
1499 % katakana "vu"
1500 begintsuglyph("uni30F4",244);
1501   kata.u;
1502   dakuten(identity rotated 12 shifted (860,720));
1503   tsu_render;
1504 endtsuglyph;
1505
```



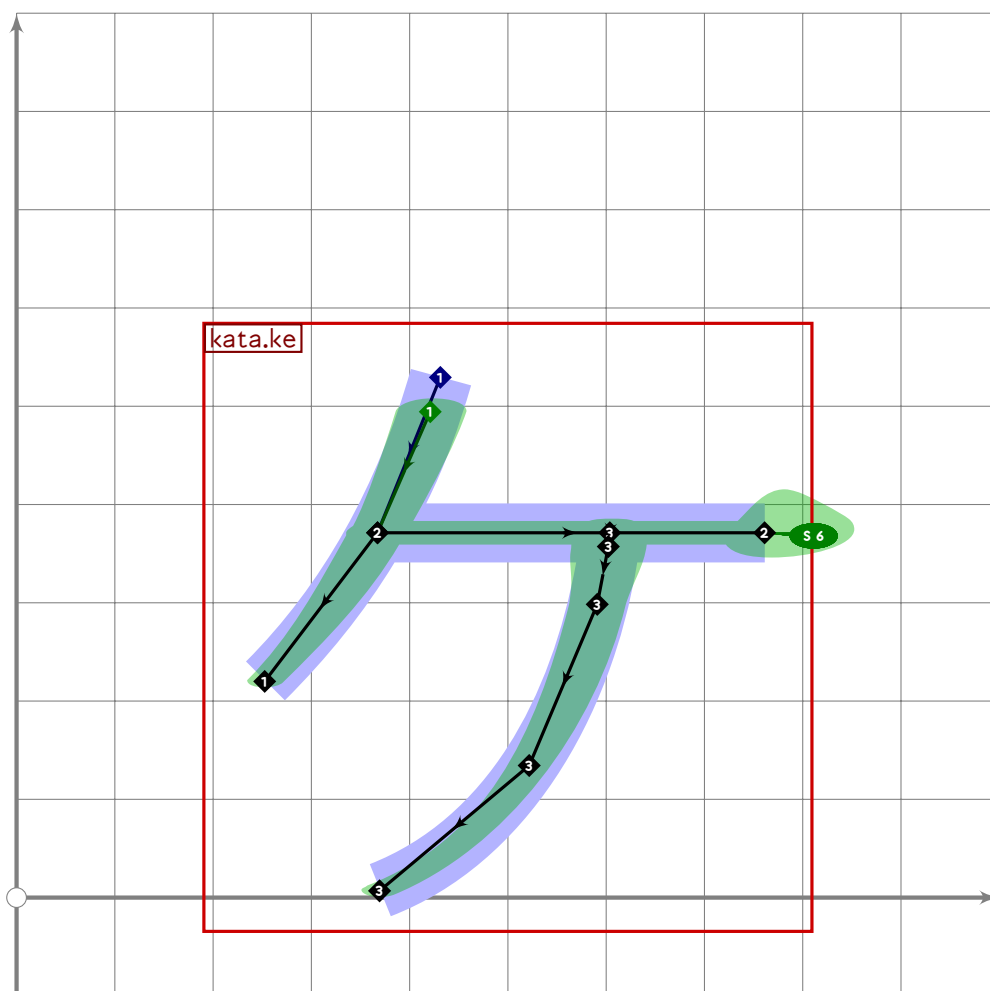
```

1506 % katakana "small ka"
1507 begintsuglyph("uni30F5";245);
1508   tsu_xform(tsu_xf.smallkana)(kata.ka);
1509   tsu_render;
1510 endtsuglyph;
1511

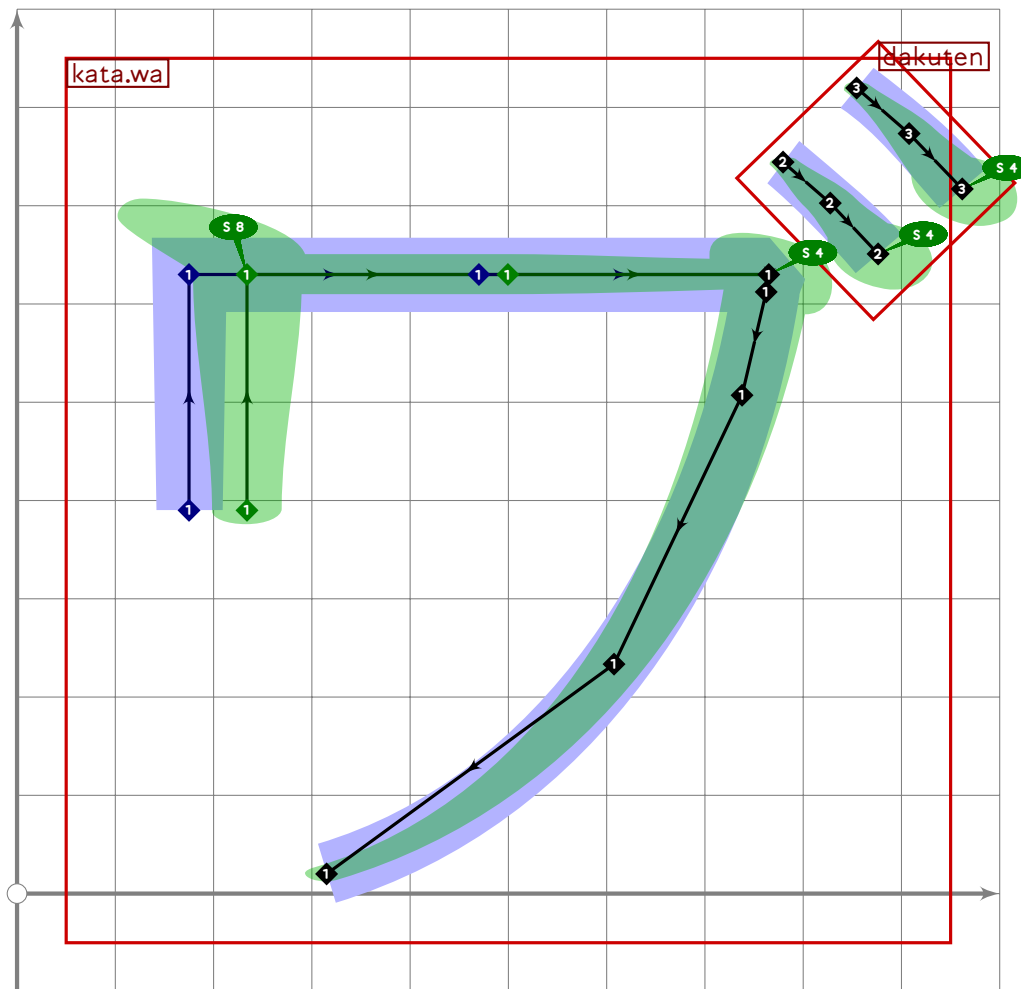
```

U+30F6
tsuku.uni30F6

30



```
1512 % katakana "small ke"
1513 begintsuglyph("uni30F6";246);
1514   tsu_xform(tsu_xf.smallkana)(kata.ke);
1515   tsu_render;
1516 endtsuglyph;
1517
```

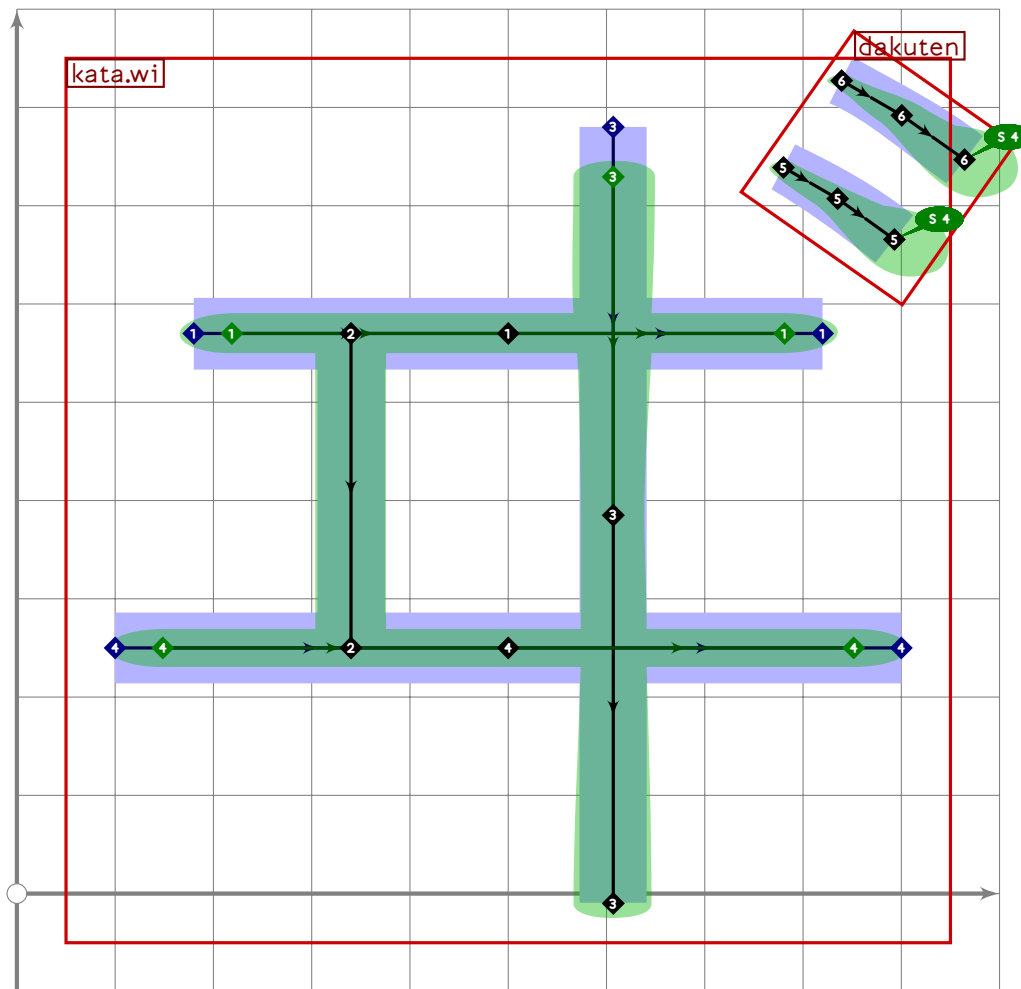
```

1518 % katakana "va"
1519 begintsuglyph("uni30F7";247);
1520 kata.wa;
1521 replace_strokep(0,oldp shifted (-15,0));
1522 dakuten(identity rotated 4 shifted (860,740));
1523 tsu_render;
1524 endtsuglyph;
1525

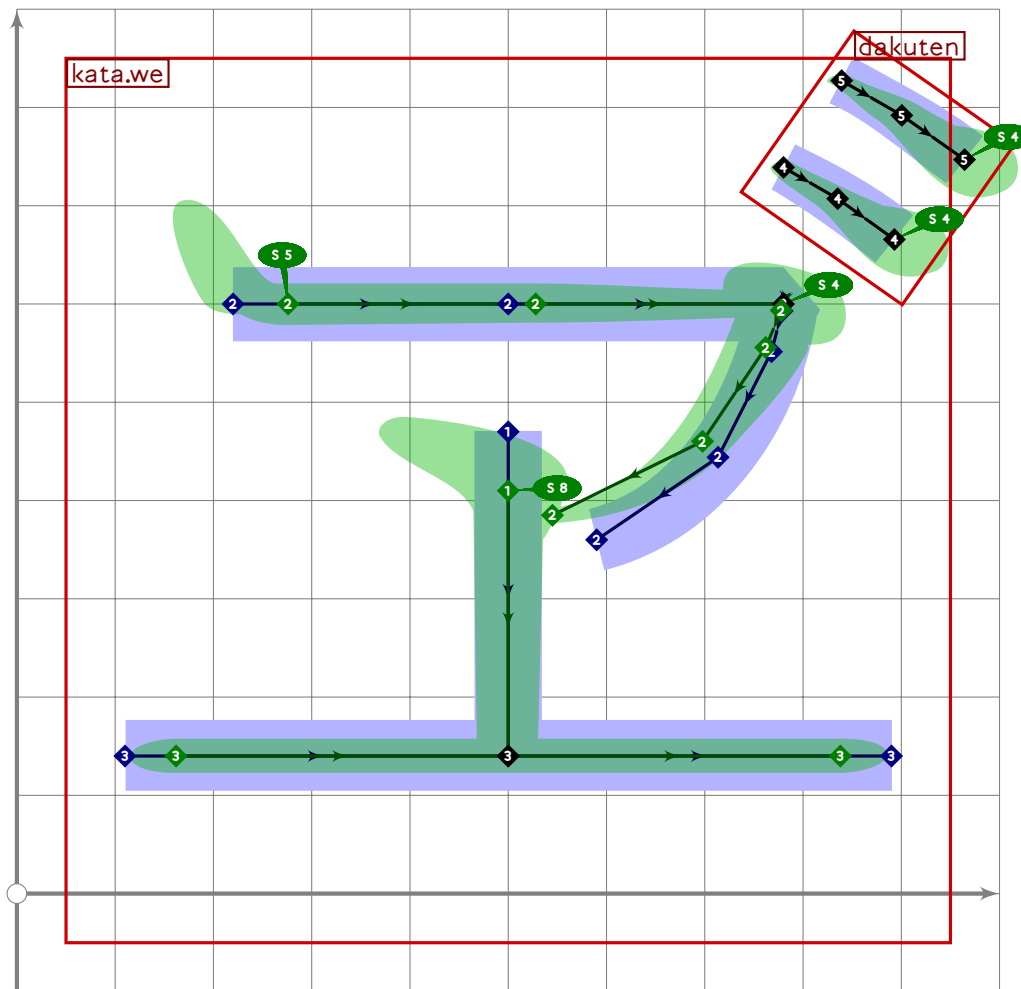
```

U+30F8
tsuku.uni30F8

30



```
1526 % katakana "vi"  
1527 begintsuglyph("uni30F8";248);  
1528   kata.wi;  
1529   dakuten(identity rotated 15 shifted (860,750));  
1530   tsu_render;  
1531 endtsuglyph;  
1532
```



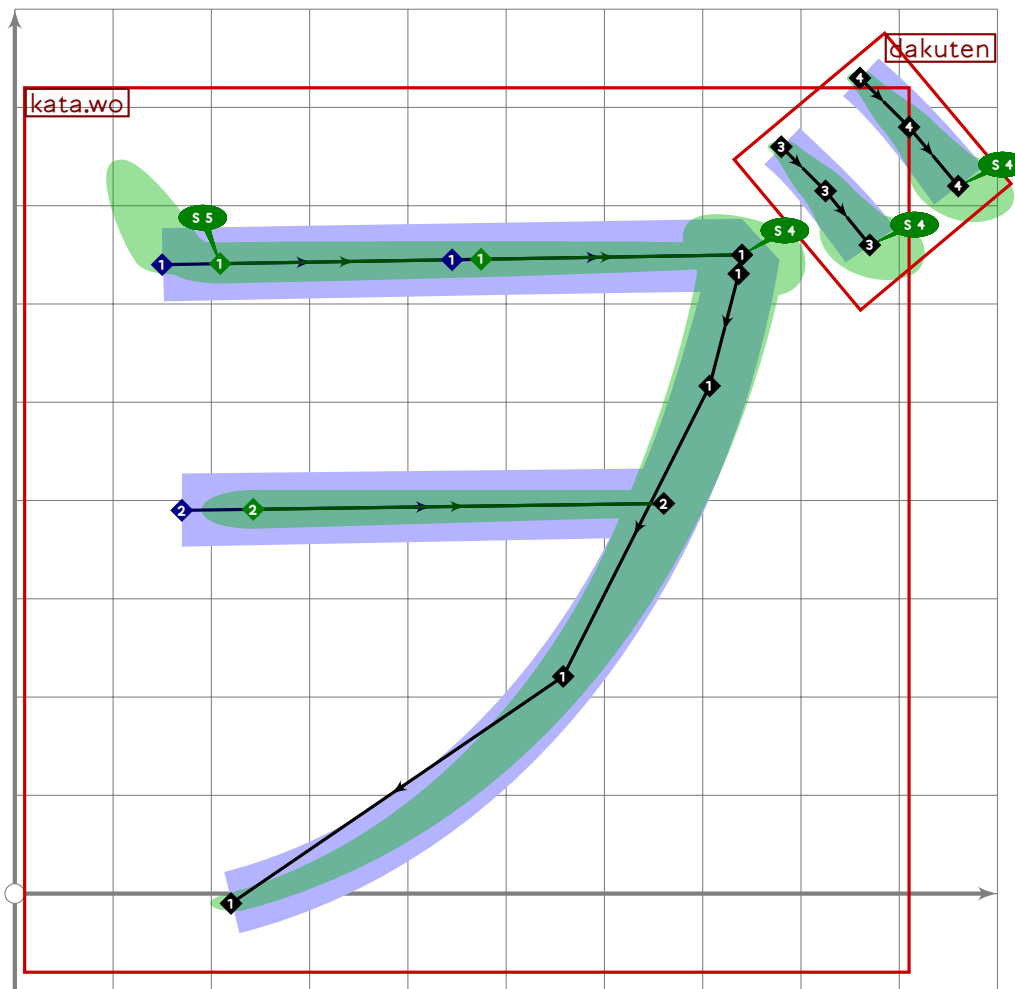
```

1533 % katakana "ve"
1534 begintsuglyph("uni30F9";249);
1535   kata.we;
1536   dakuten(identity rotated 15 shifted (860,750));
1537   tsu_render;
1538 endtsuglyph;
1539

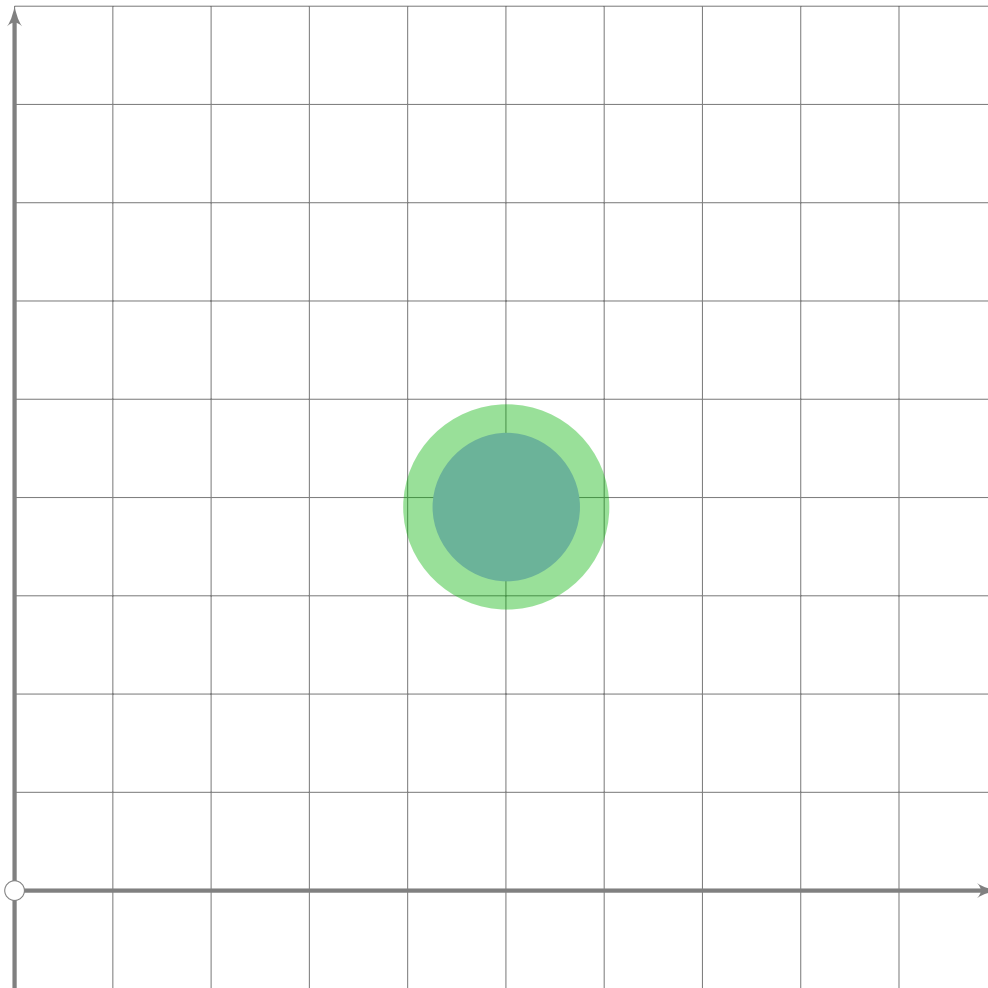
```

U+30FA
tsuku.uni30FA

30



```
1540 % katakana "vo"  
1541 begintsuglyph("uni30FA";250);  
1542 tsu_xform(identity shifted (-40,30))(kata.wo);  
1543 dakuten(identity shifted (860,750));  
1544 tsu_render;  
1545 endtsuglyph;  
1546
```



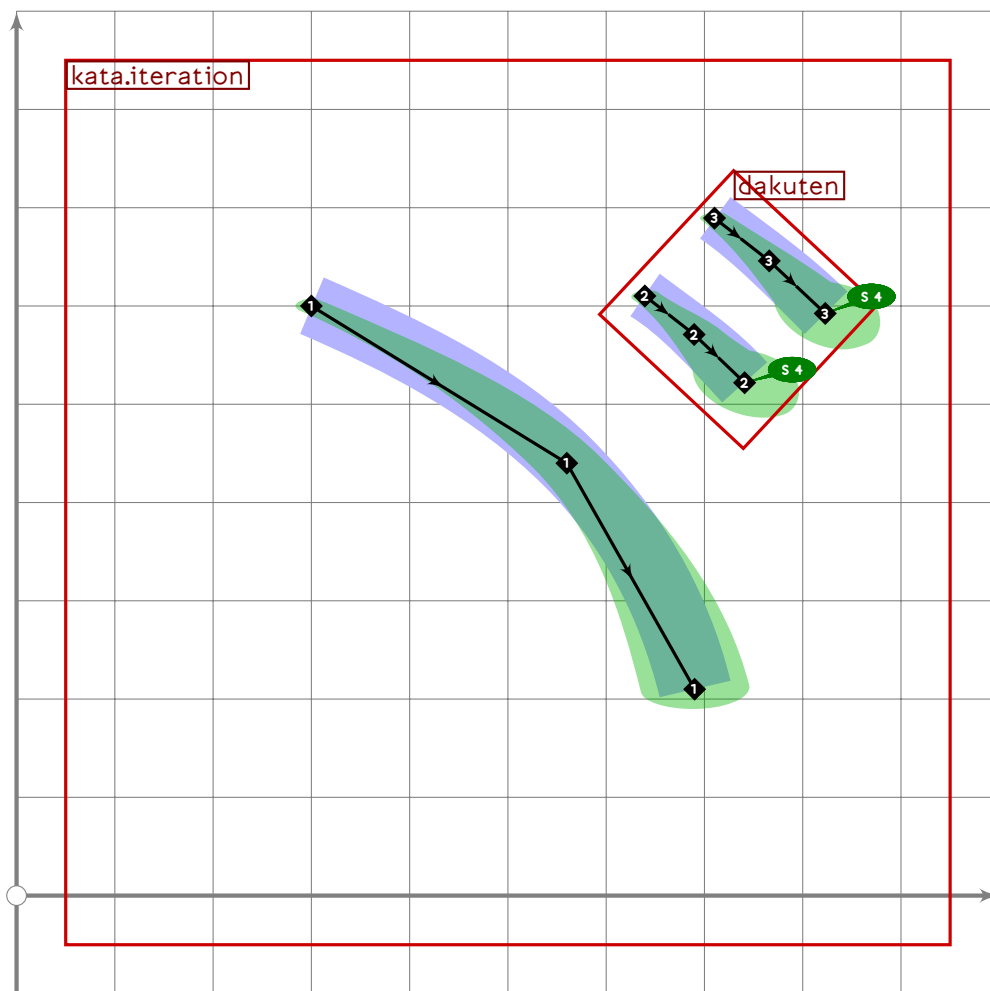
```

1547 % katakana middle dot
1548 begintsuglyph("uni30FB";251);
1549   Fill fullcircle scaled (200*tsu_brush_max) shifted centre_pt;
1550 endtsuglyph;
1551
1552 % hira/kata "prolonged sound mark"
1553 begintsuglyph("uni30FC";252);
1554   punct.psound;
1555   tsu_render;
1556 endtsuglyph;
1557
1558 % katakana "iteration mark"
1559 begintsuglyph("uni30FD";253);
1560   kata.iteration;
1561   tsu_render;
1562 endtsuglyph;
1563

```

[see page 393]

[see page 248]



```

1564 % katakana "voiced iteration mark"
1565 begintsuglyph("uni30FE";254);
1566   kata.iteration;
1567   dakuten(identity rotated 7 shifted (720,610));
1568   tsu_render;
1569 endtsuglyph;
1570
1571
1572
1573 endfont;
1574
1575

```

tsuku-31.mp

31

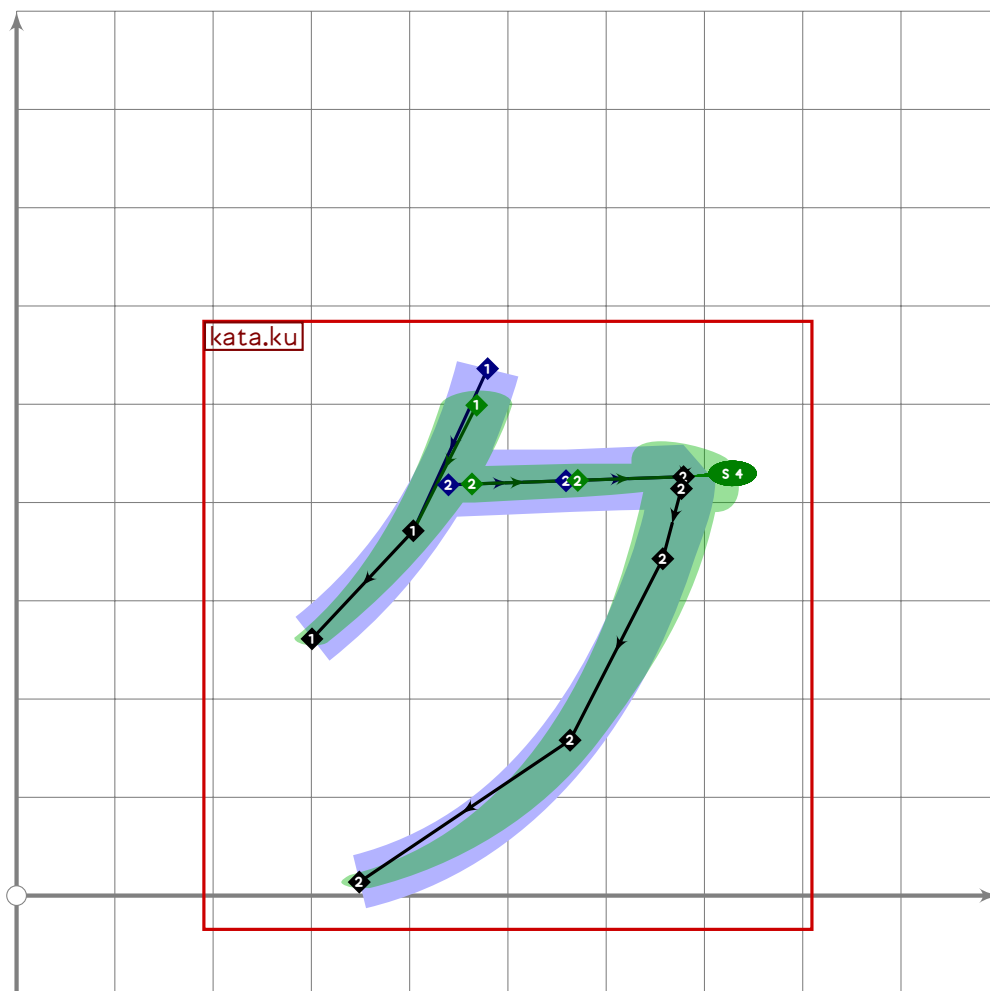
```
1 %
2 % Unicode page 31 (Katakana Phonetic Extensions) for Tsukurimashou
3 % Copyright (C) 2011, 2012 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 _____
32
33 beginfont
34
35 % AUTODEPS
36 input katakana.mp;
37
38 do_late_includes;
39
40 _____
41
```

Phonetic Extensions For Ainu

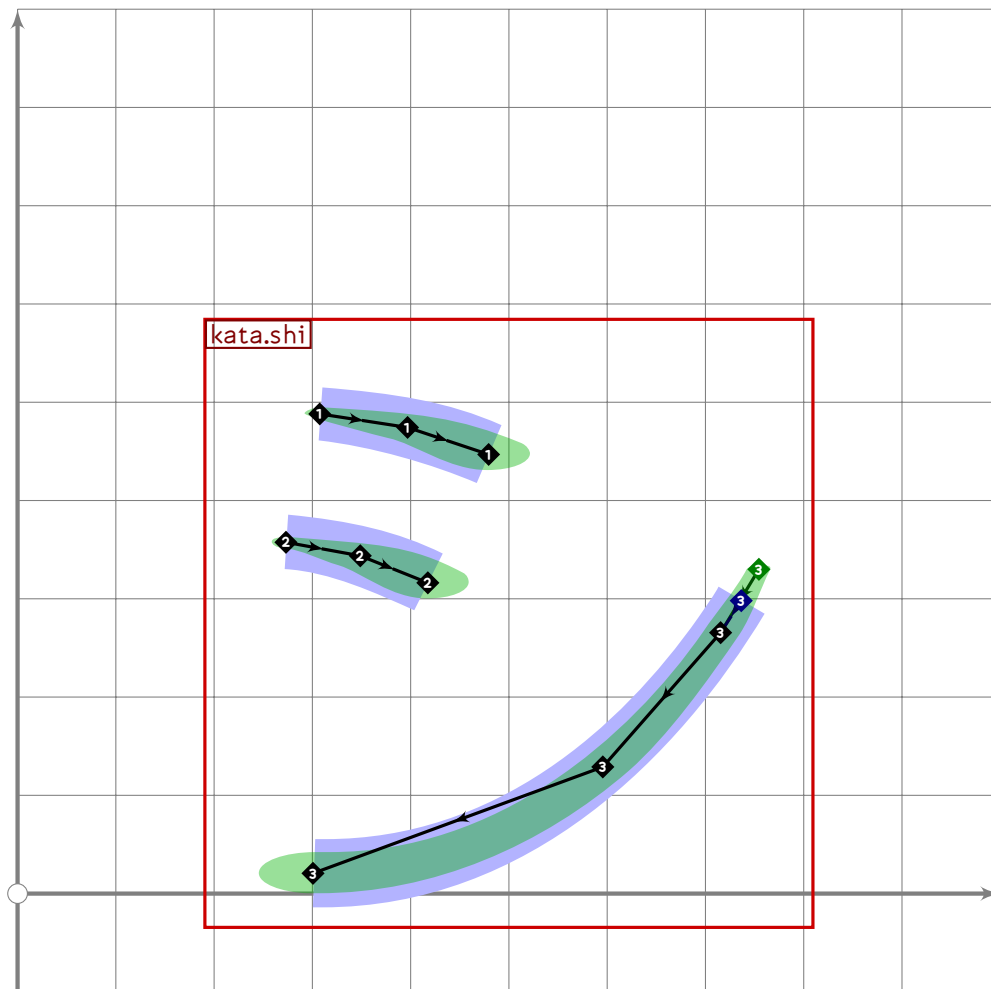
```
42 % PHONETIC EXTENSIONS FOR AINU
43
```

U+31F0
tsuku.uni31F0

31



```
44 % katakana "ku"  
45 begintsuglyph("uni31F0";240);  
46 tsu_xform(tsu_xf.smallkana)(kata.ku);  
47 tsu_render;  
48 endtsuglyph;  
49
```

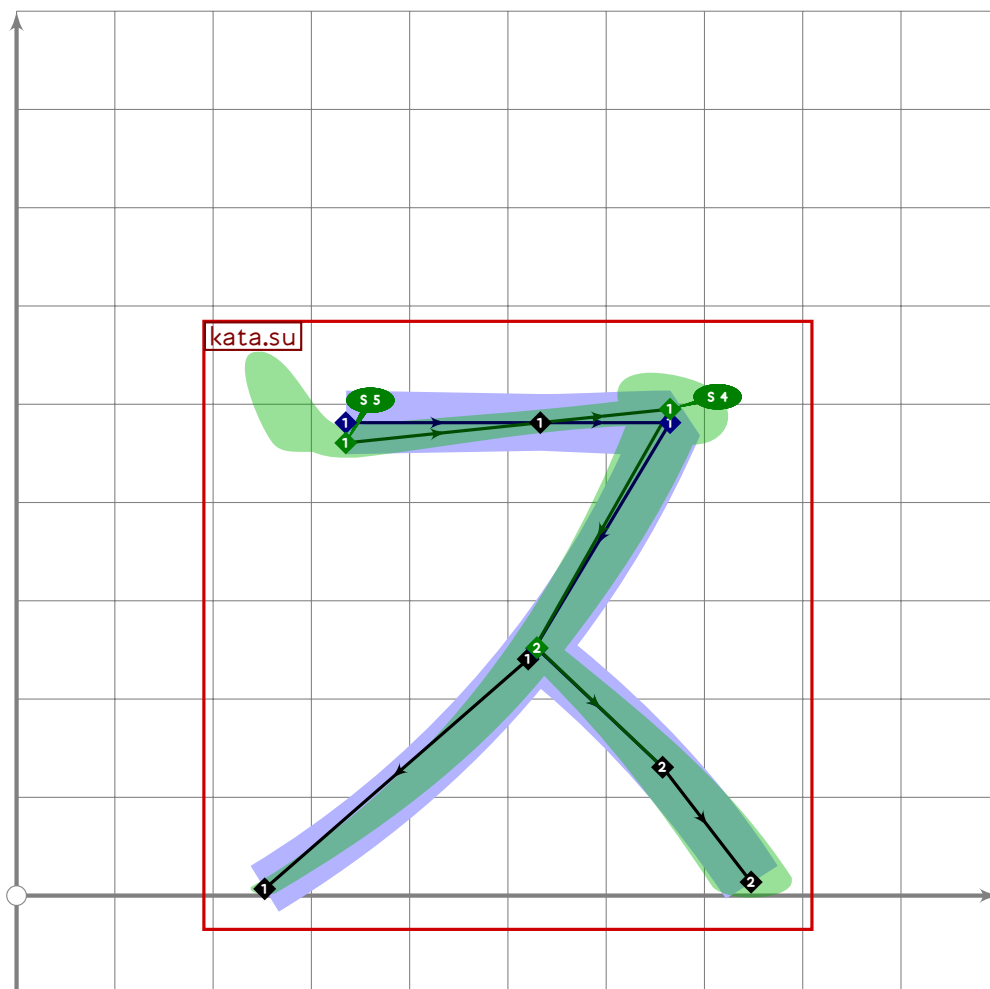
```

50 % katakana "shi"
51 begintsuglyph("uni31F1";241);
52   tsu_xform(tsu_xf.smallkana)(kata.shi);
53   tsu_render;
54 endtsuglyph;
55

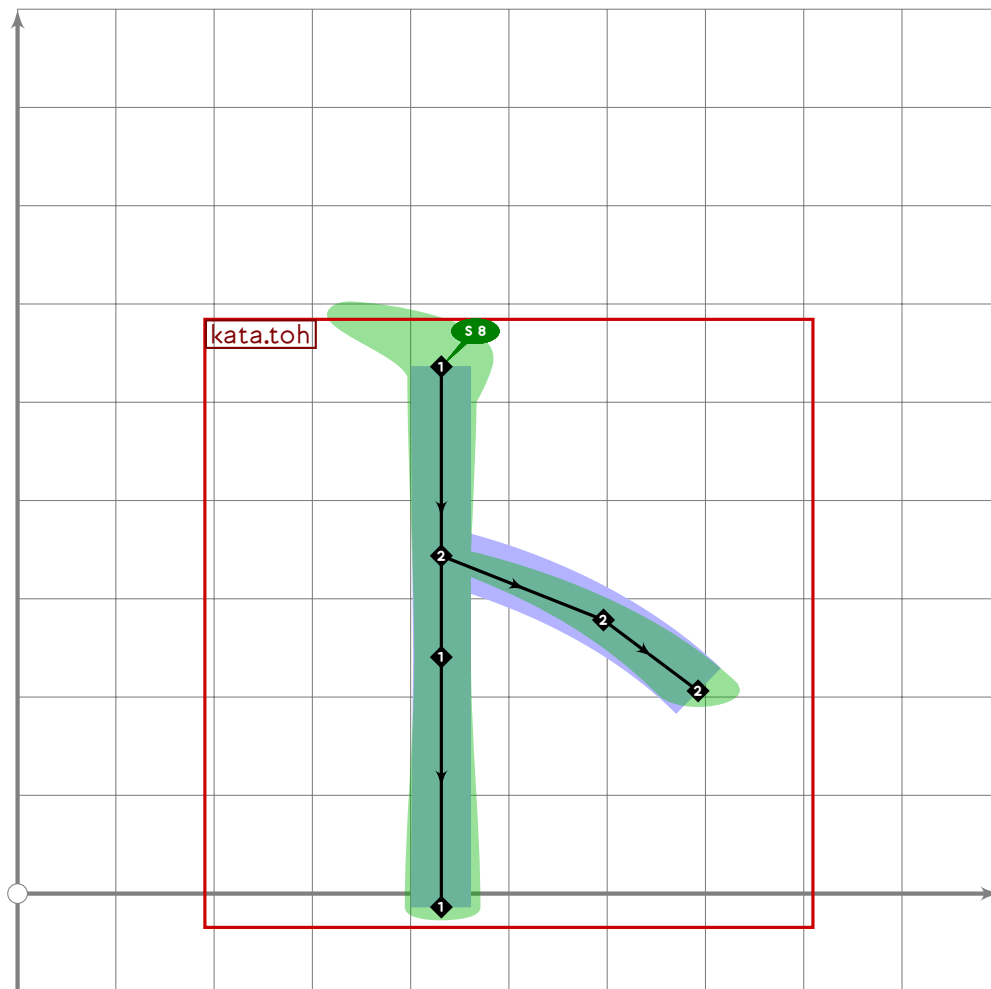
```

U+31F2
tsuku.uni31F2

31



```
56 % katakana "su"  
57 begintsuglyph("uni31F2";242);  
58 tsu_xform(tsu_xf.smallkana)(kata.su);  
59 tsu_render;  
60 endtsuglyph;  
61
```



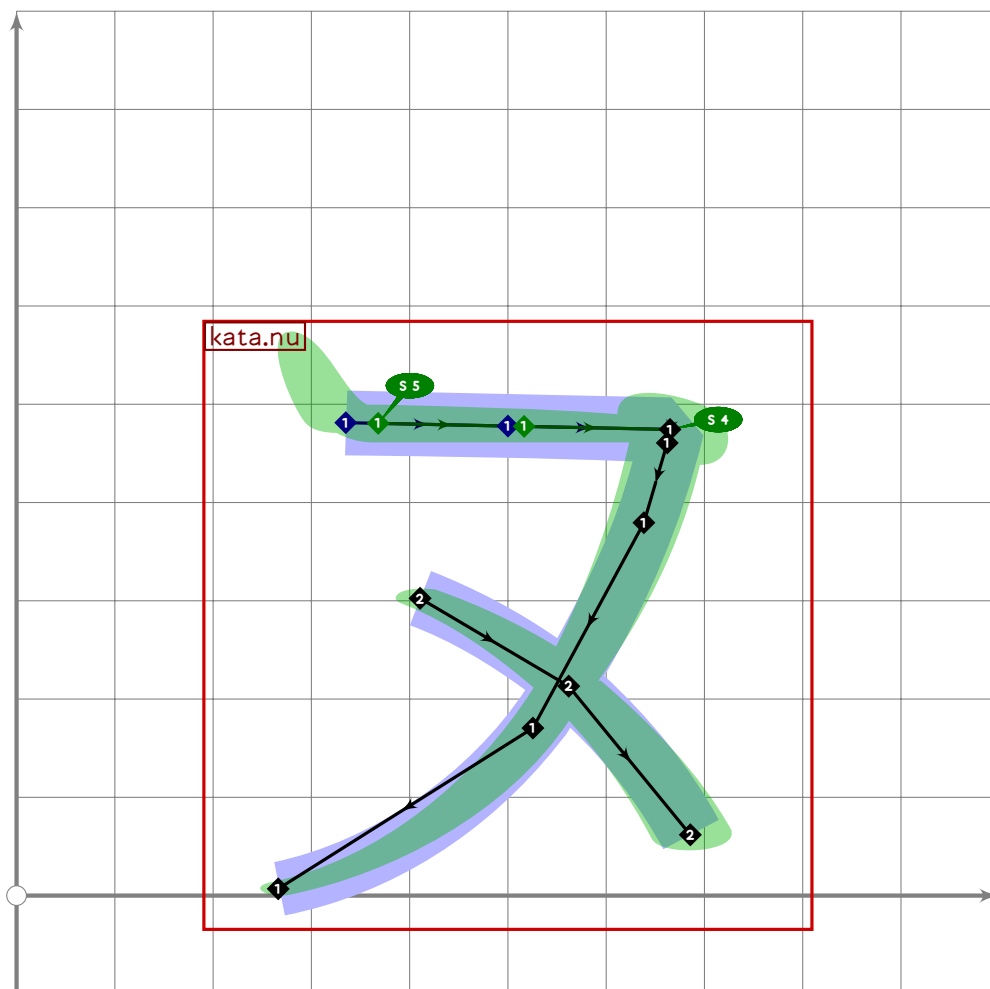
```

62 % katakana "to"
63 begintsuglyph("uni31F3";243);
64 tsu_xform(tsu_xf.smallkana)(kata.toh);
65 tsu_render;
66 endtsuglyph;
67

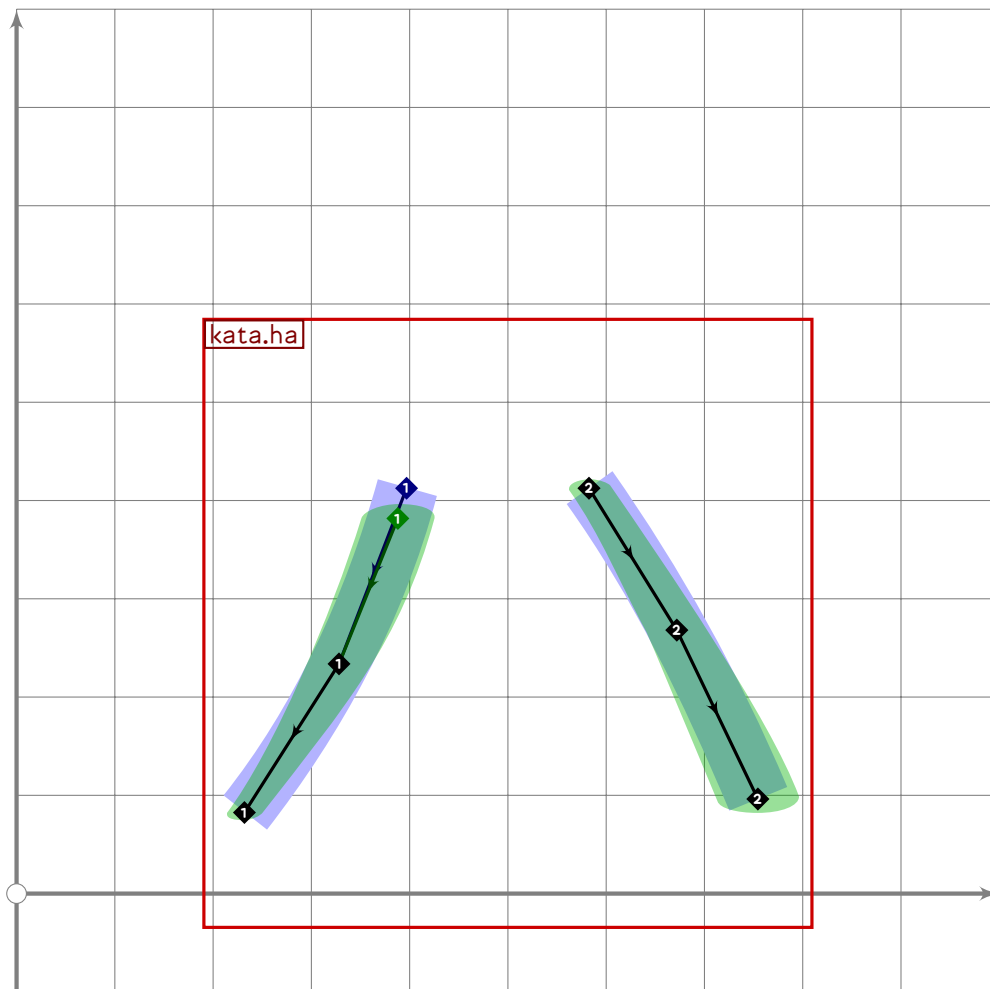
```

U+31F4
tsuku.uni31F4

31



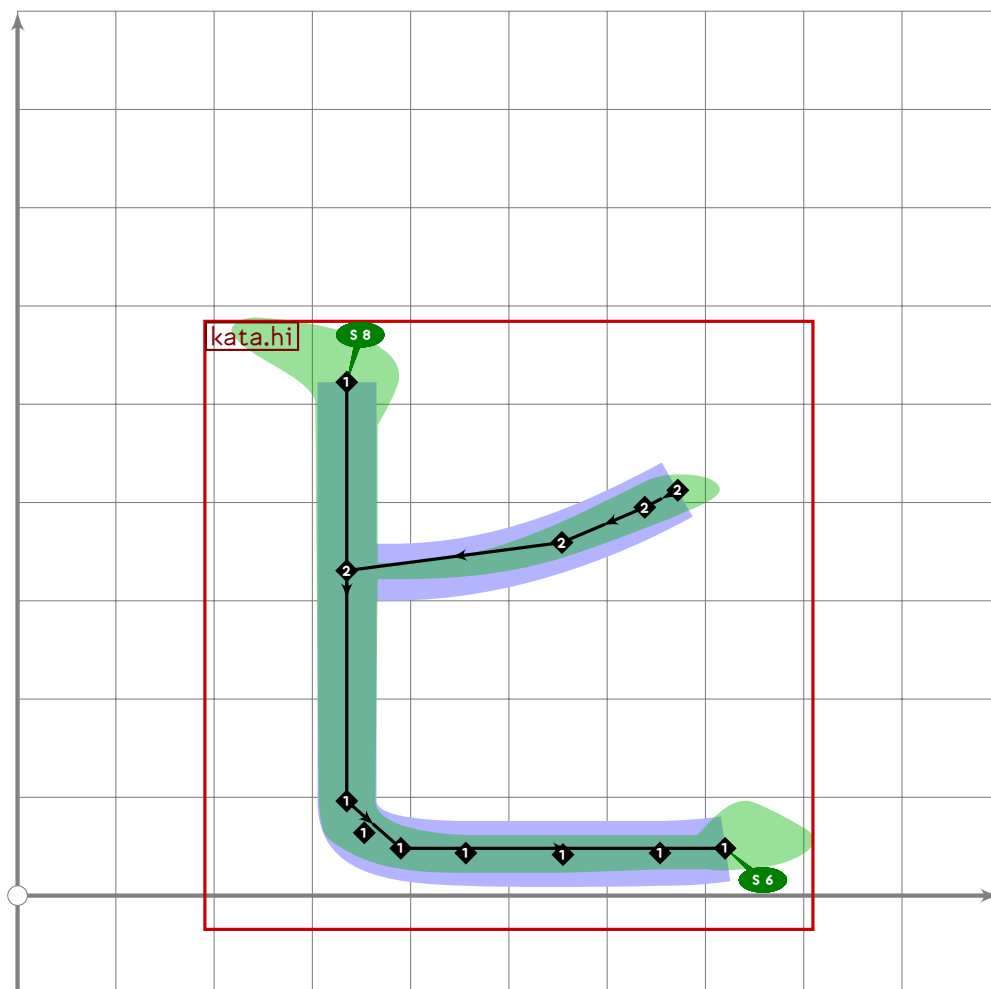
```
68 % katakana "nu"  
69 begintsuglyph("uni31F4";244);  
70 tsu_xform(tsu_xf.smallkana)(kata.nu);  
71 tsu_render;  
72 endtsuglyph;  
73
```



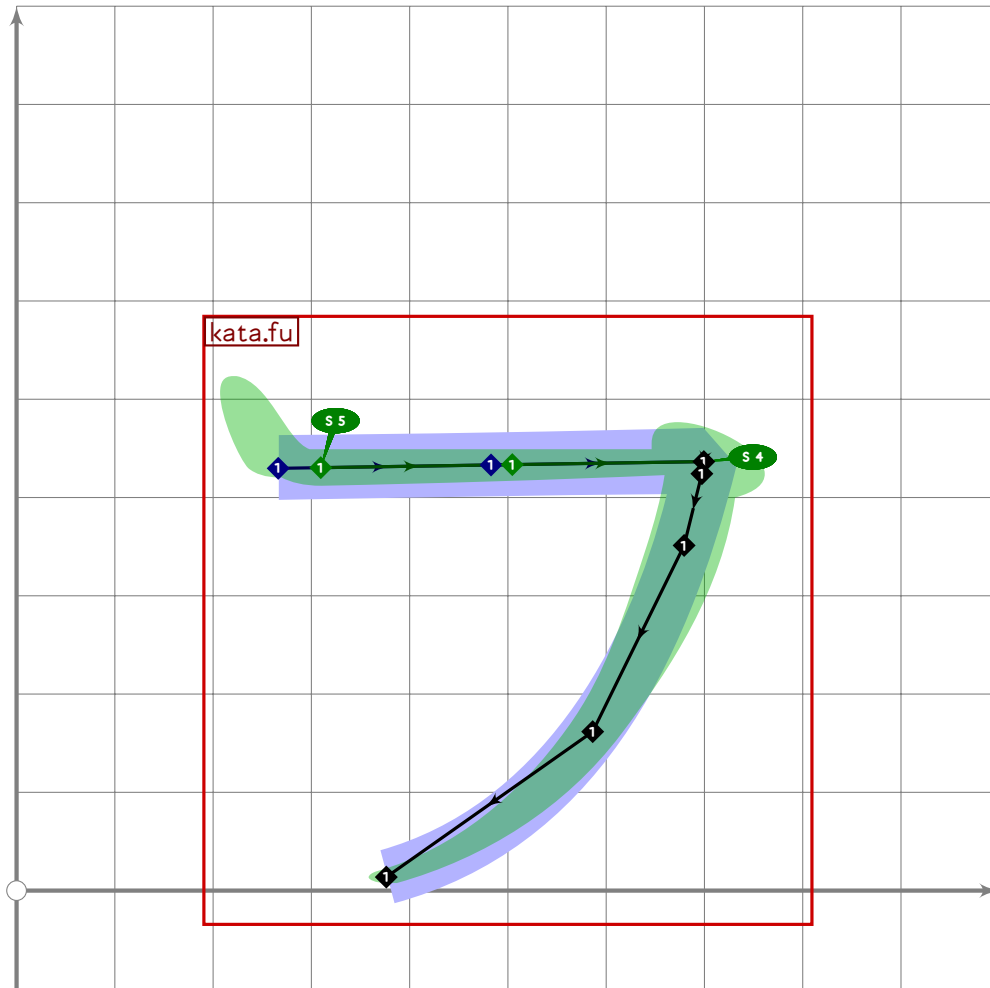
```
74 % katakan "ha"  
75 beginsuglyph("uni31F5";245);  
76 tsu_xform(tsu_xf.smallkana)(kata.ha);  
77 tsu_render;  
78 endsuglyph;  
79
```

U+31F6
tsuku.uni31F6

31



```
80 % hiragana "hi"  
81 beginsuglyph("uni31F6";246);  
82 tsu_xform(tsu_xf.smallkana)(kata.hi);  
83 tsu_render;  
84 endsuglyph;  
85
```



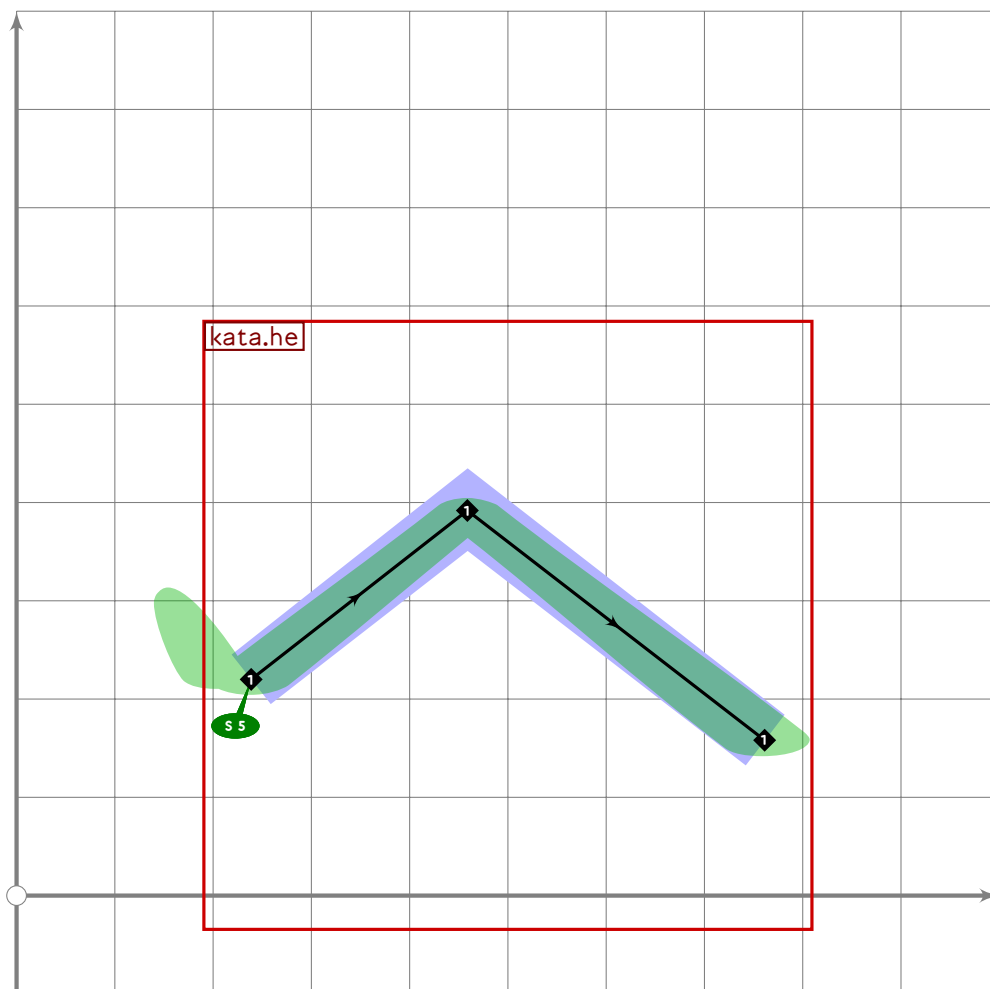
```

86 % katakana "fu"
87 begintsuglyph("uni31F7";247);
88   tsu_xform(tsu_xf.smallkana)(kata.fu);
89   tsu_render;
90 endtsuglyph;
91

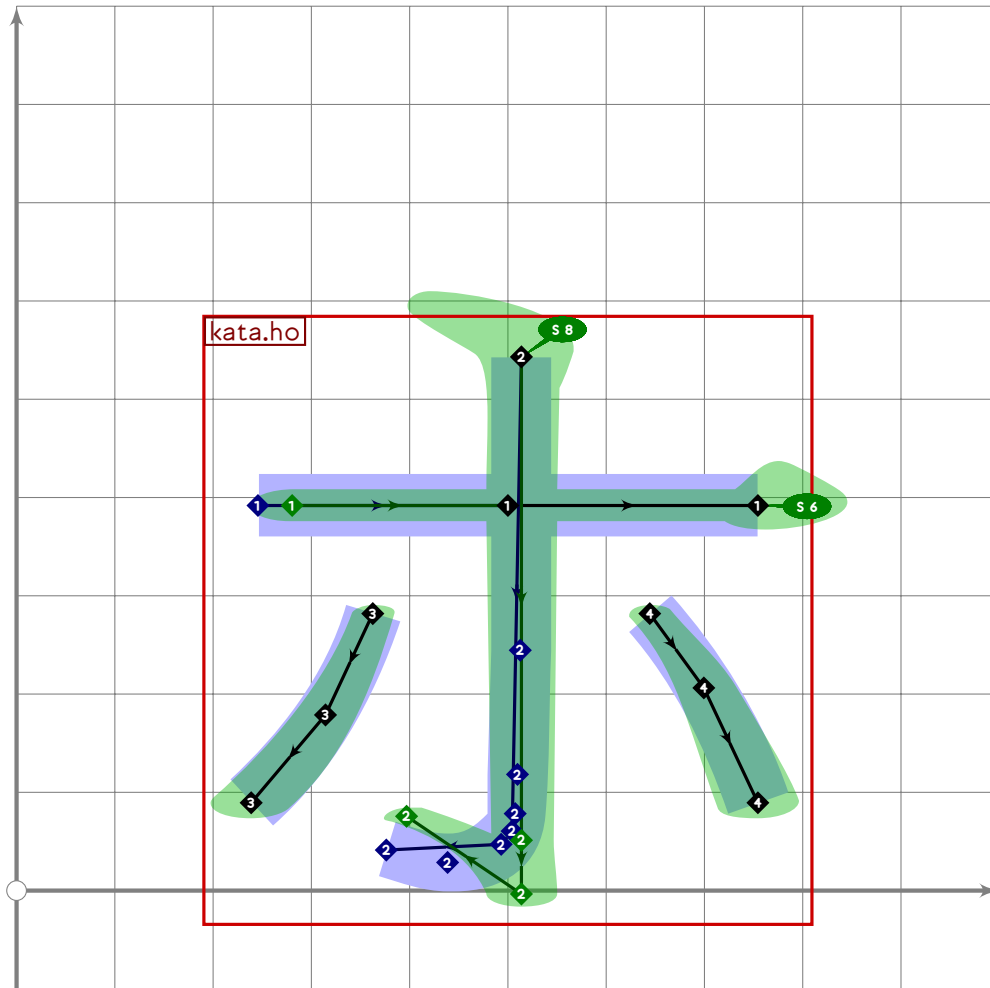
```

U+31F8
tsuku.uni31F8

31



```
92 % katakana "he"  
93 beginsuglyph("uni31F8";248);  
94   tsu_xform(tsu_xf.smallkana)(kata.he);  
95   tsu_render;  
96 endtsuglyph;  
97
```

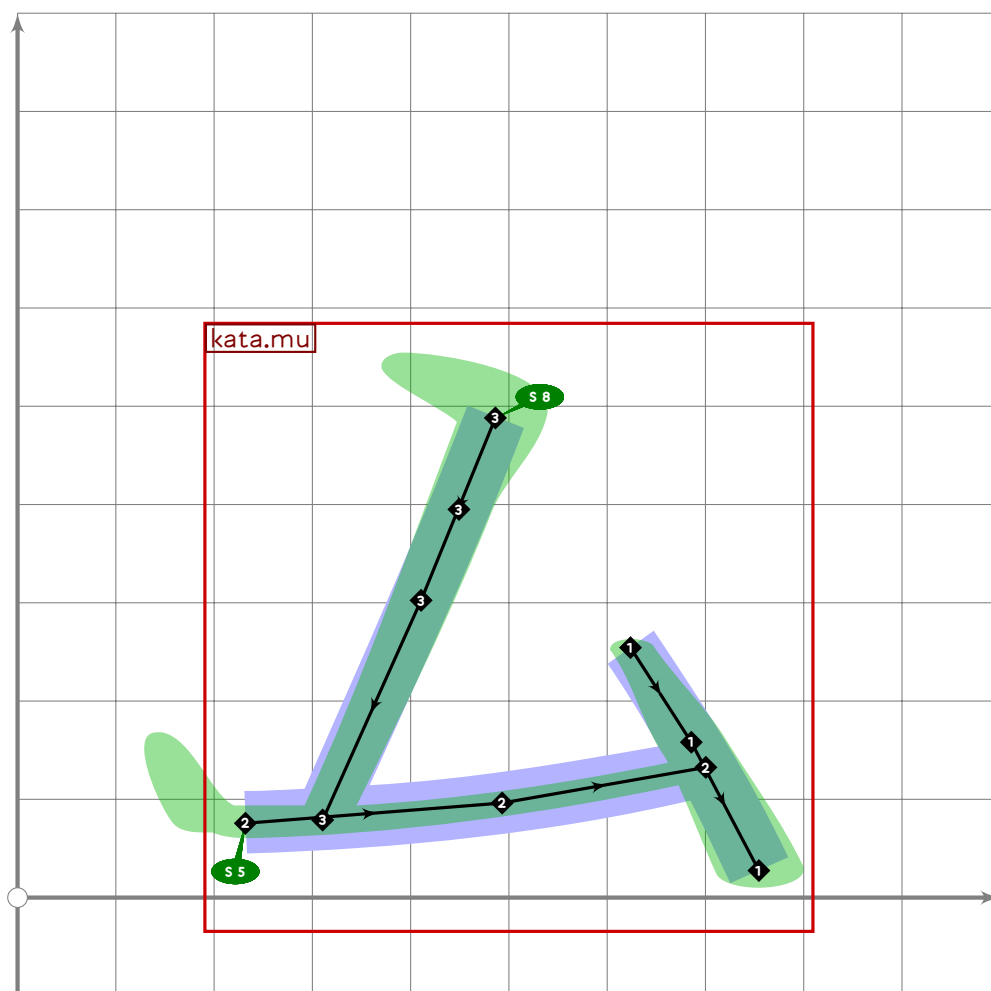
```

98 % katakana "ho"
99 begintsuglyph("uni31F9";249);
100 tsu_xform(tsu_xf.smallkana)(kata.ho);
101 tsu_render;
102 endtsuglyph;
103

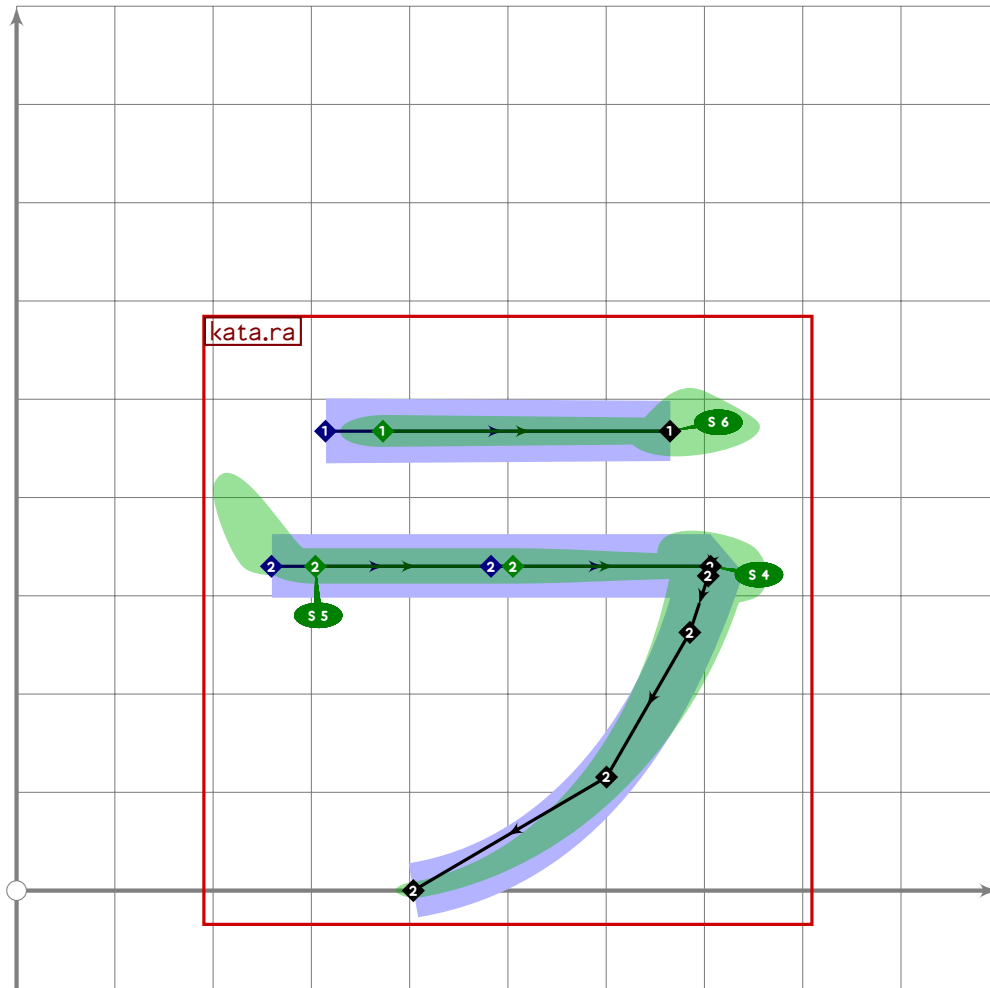
```

U+31FA
tsuku.uni31FA

31



```
104 % katakana "mu"  
105 begintsuglyph("uni31FA";250);  
106 tsu_xform(tsu_xf.smallkana)(kata.mu);  
107 tsu_render;  
108 endtsuglyph;  
109
```



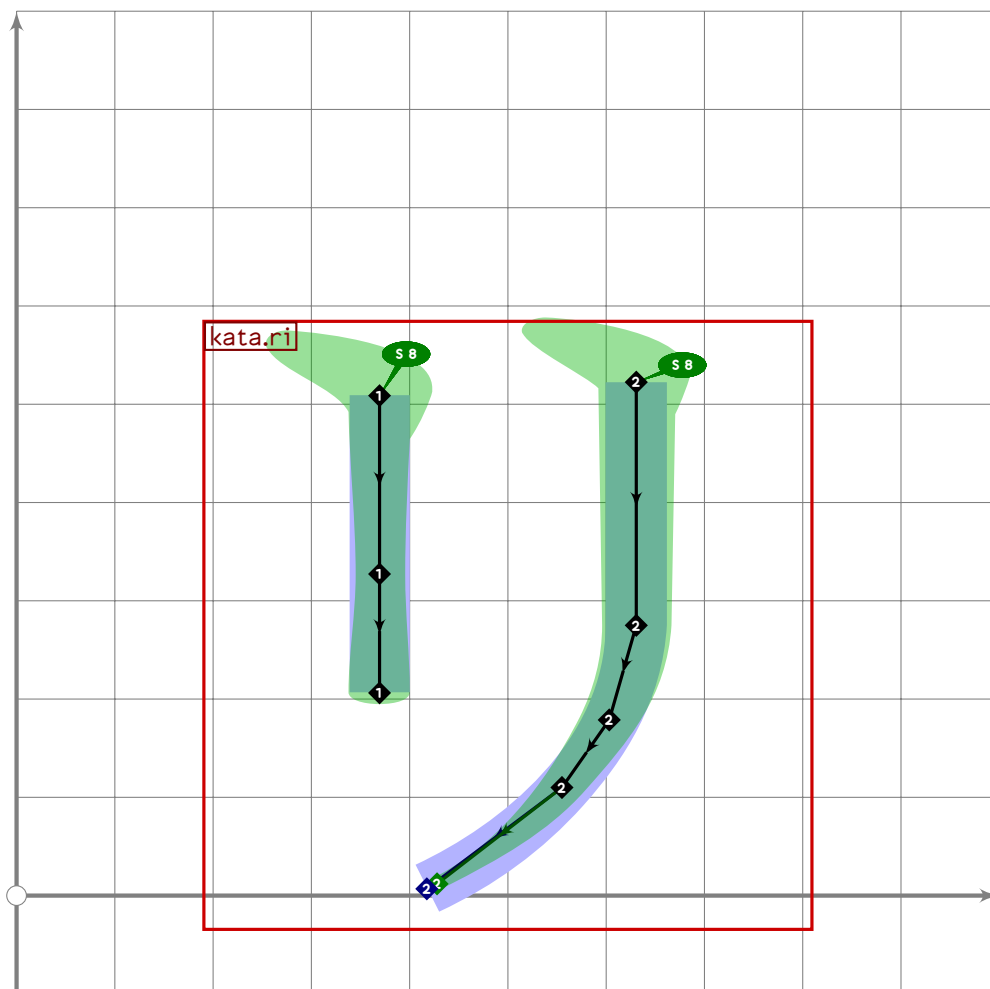
```

110 % katakana "ra"
111 begintsuglyph("uni31FB";251);
112   tsu_xform(tsu_xf.smallkana)(kata.ra);
113   tsu_render;
114 endtsuglyph;
115

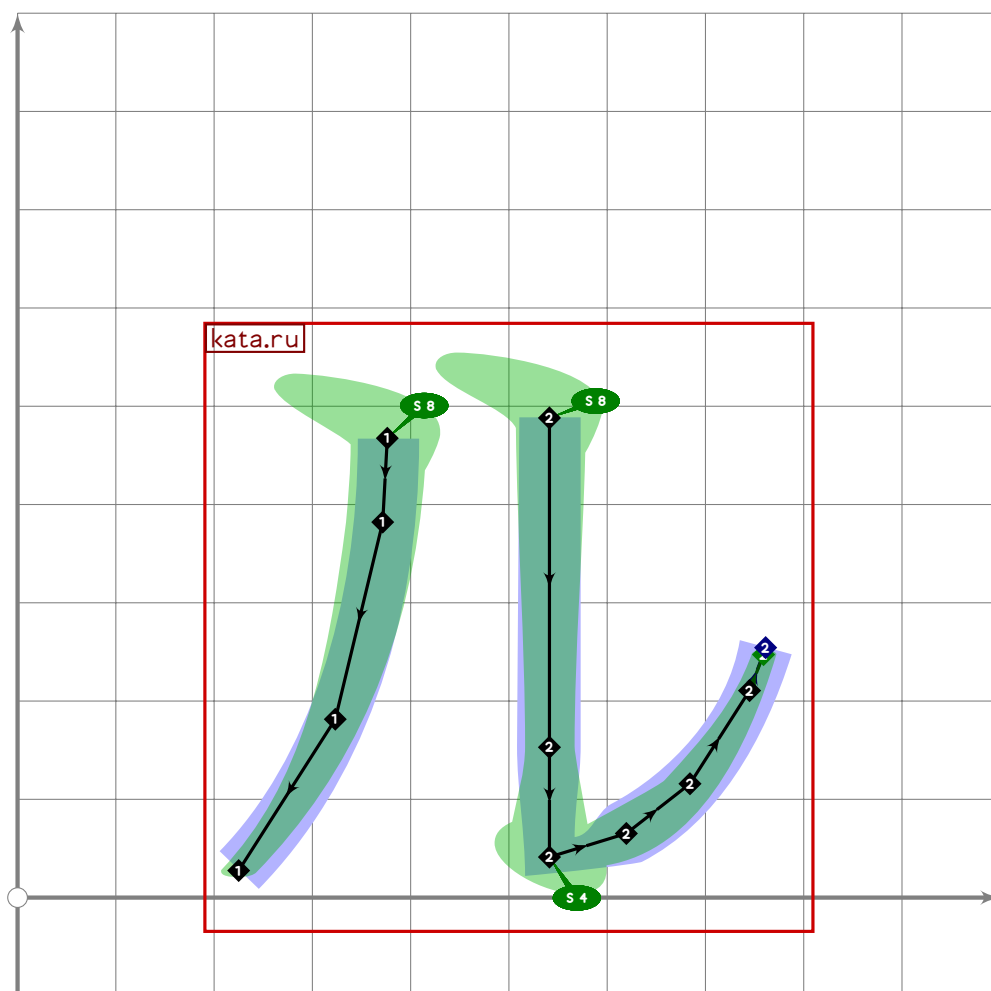
```

U+31FC
tsuku.uni31FC

31



```
116 % katakana "ri"  
117 begintsuglyph("uni31FC",252);  
118   tsu_xform(tsu_xf.smallkana)(kata.ri);  
119   tsu_render;  
120 endtsuglyph;  
121
```



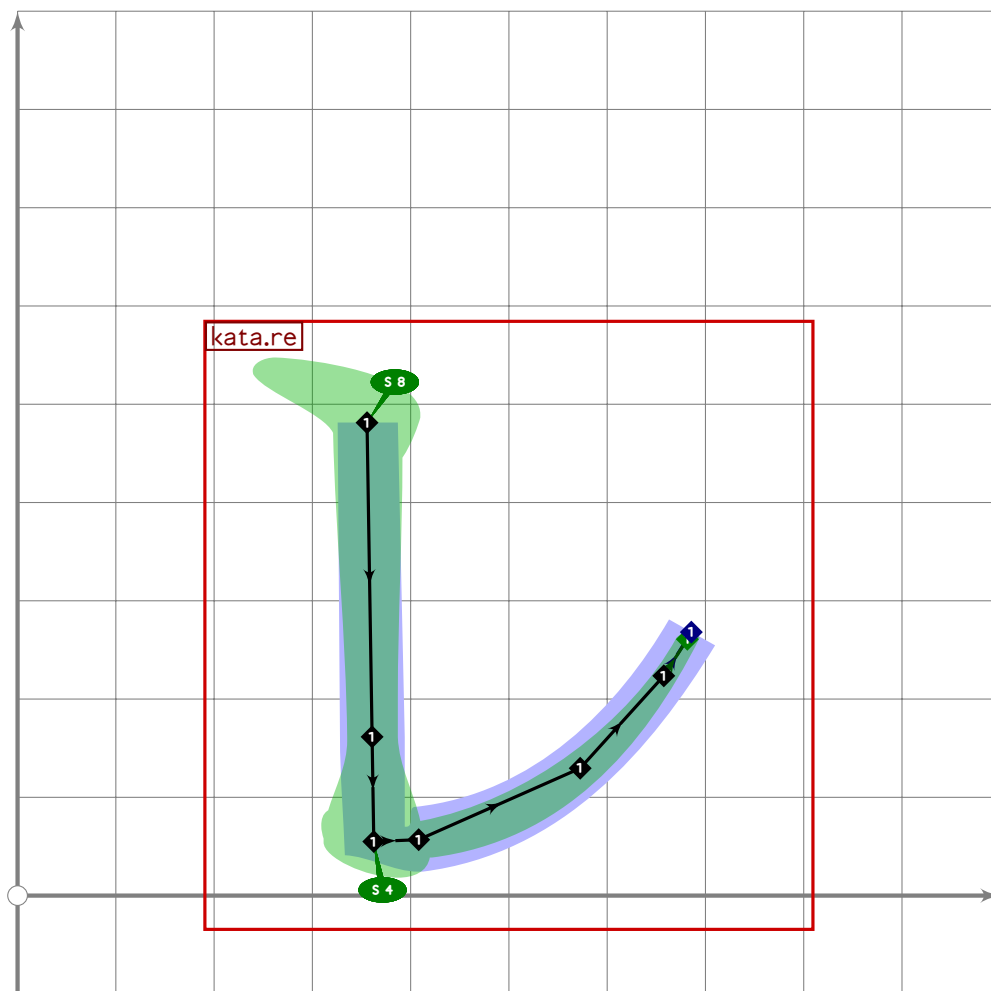
```

122 % katakana "ru"
123 begintsuglyph("uni31FD";253);
124   tsu_xform(tsu_xf.smallkana)(kata.ru);
125   tsu_render;
126 endtsuglyph;
127

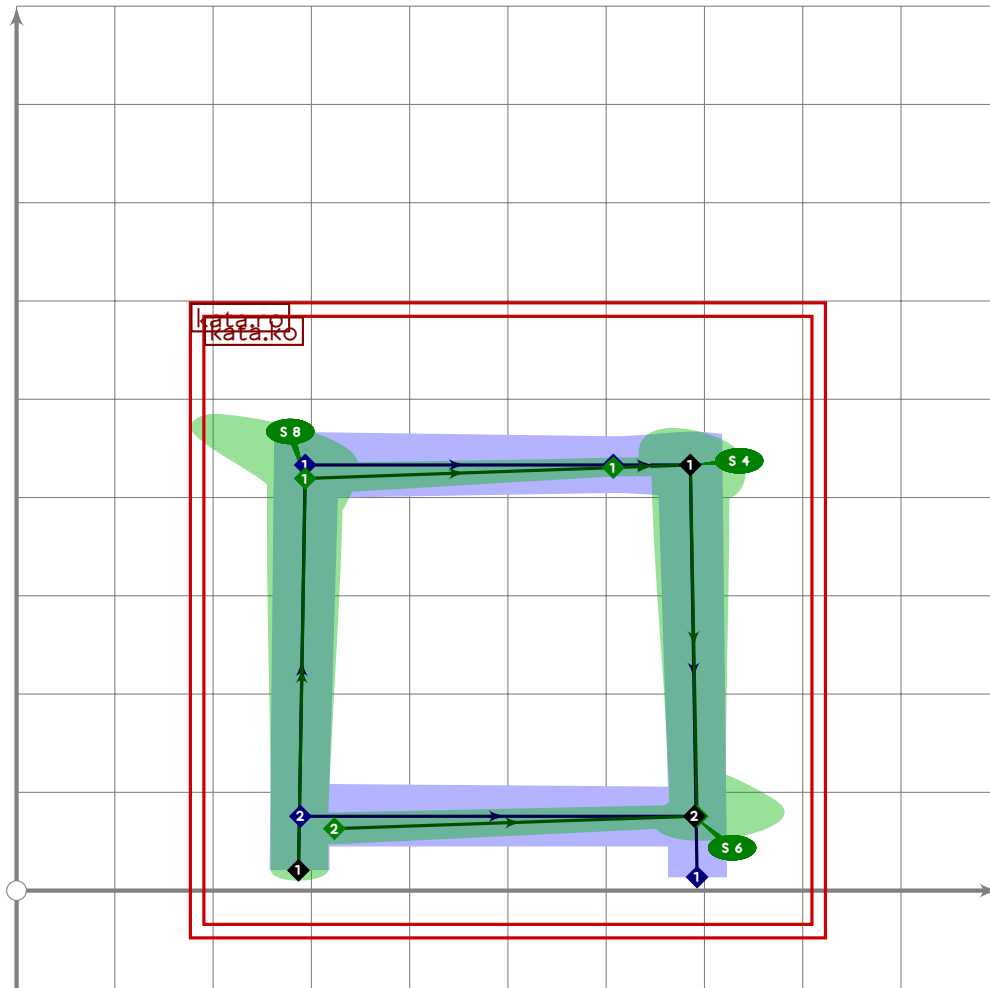
```

U+31FE
tsuku.uni31FE

31



```
128 % katakana "re"  
129 beginsuglyph("uni31FE";254);  
130 tsu_xform(tsu_xf.smallkana)(kata.re);  
131 tsu_render;  
132 endsuglyph;  
133
```



```

134 % katakana "ro"
135 begintsuglyph("uni31FF";255);
136   tsu_xform(tsu_xf.smallkana)(kata.ro);
137   tsu_render;
138 endtsuglyph;
139
140 _____
141
142 endfont;
143
144 _____

```

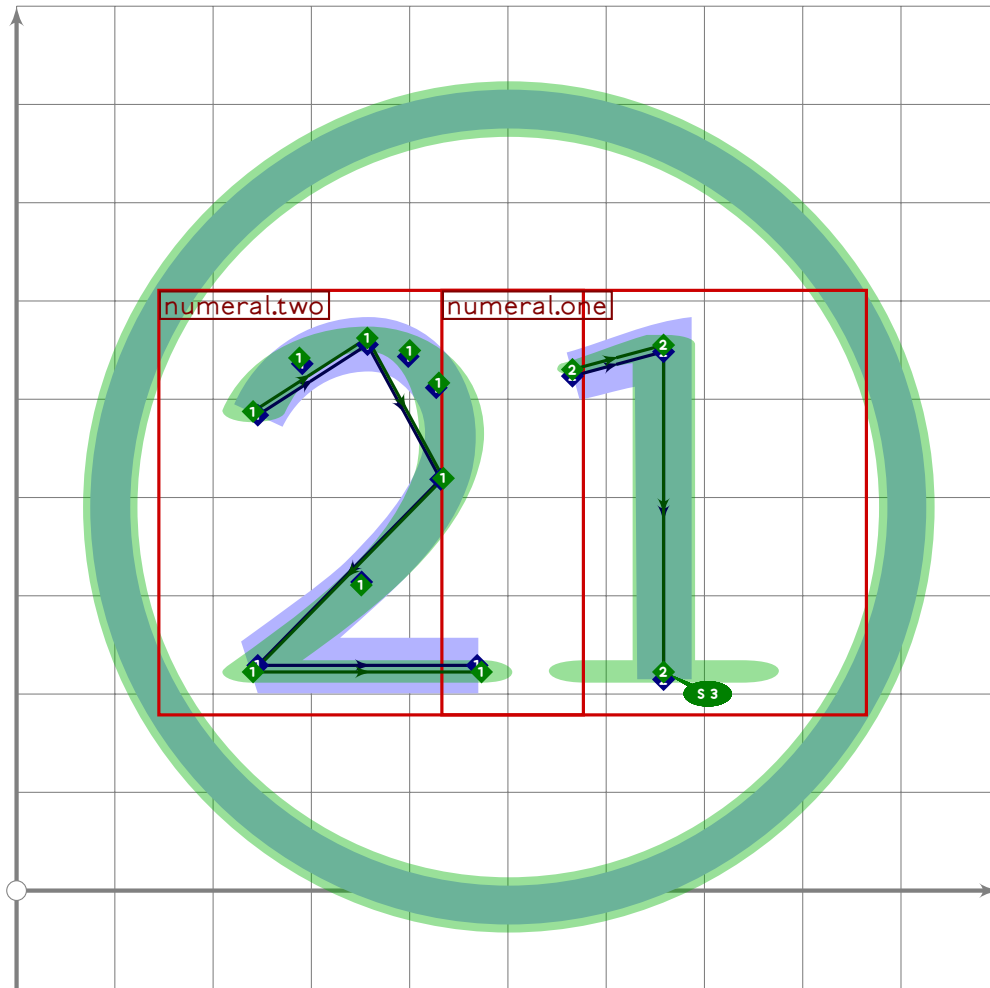
tsuku-32.mp

32

```
1 %
2 % Unicode page 32 (Enclosed Alpha and Katakana) for Tsukurimashou
3 % Copyright (C) 2011, 2012 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31
32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input enclosed.mp;
39 input katakana.mp;
40 input numerals.mp;
41
42 do_late_includes;
43
44
45
```

Circled Numerals

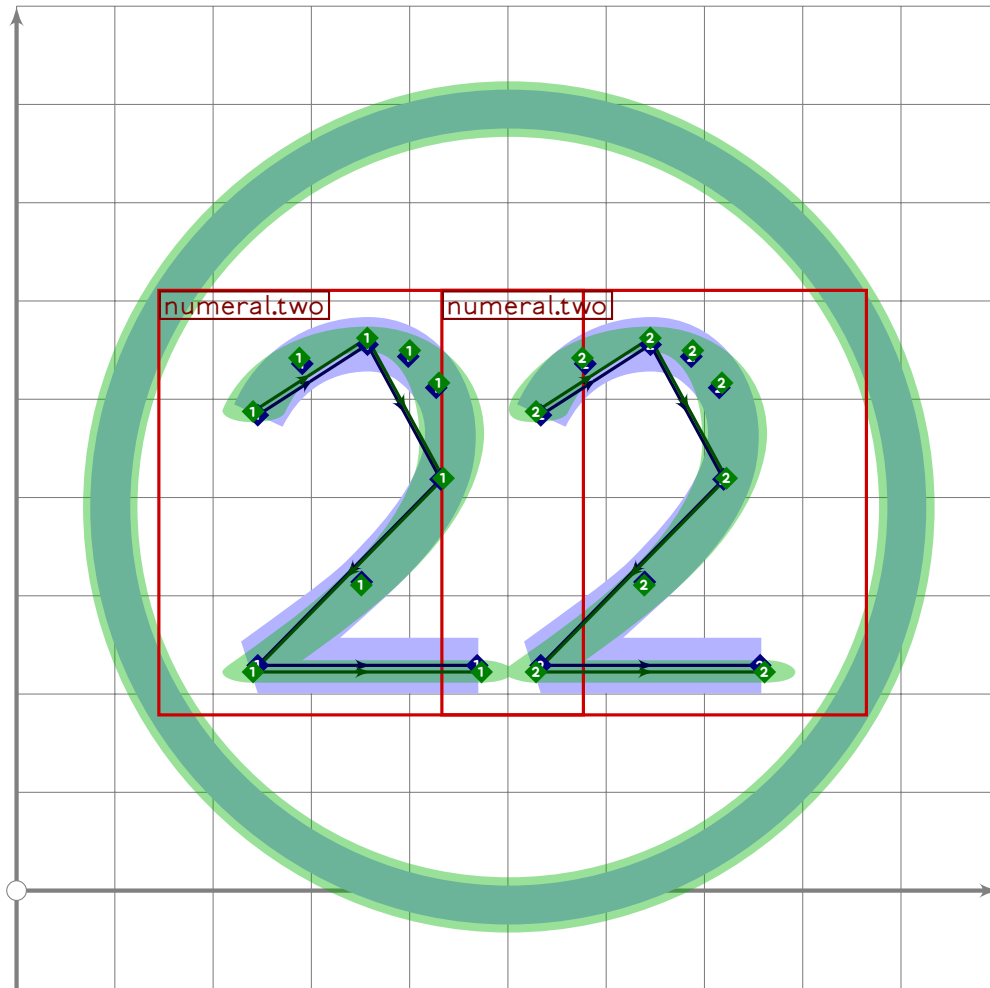
```
46 % CIRCLED NUMERALS
47
```

```

48 % 21
49 begint Suglyph("uni3251";81);
50 circle.single;
51 tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.two);
52 numeric x[],y[];
53 tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.one);
54 tsu_render;
55 endtsuglyph;
56

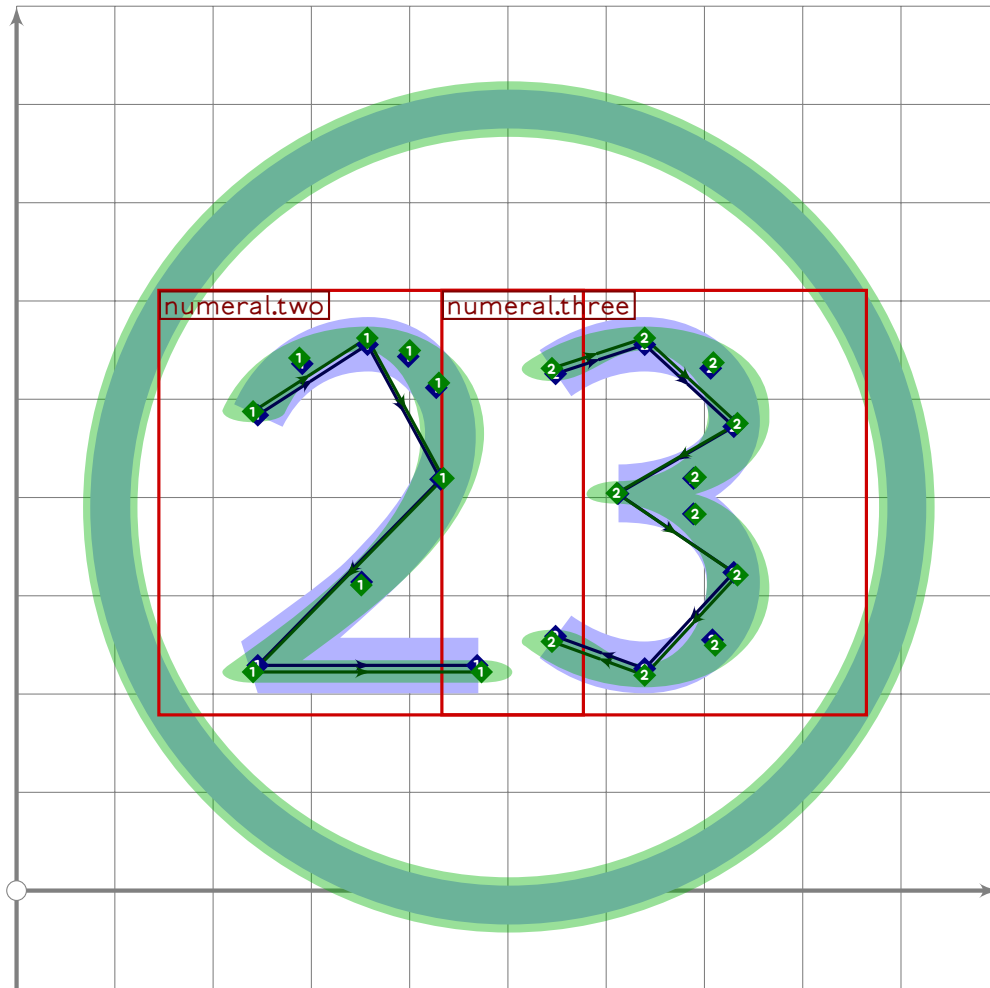
```



```

57 % 22
58 begintsuglyph("uni3252";82);
59 circle.single;
60 tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.two);
61 numeric x[],y[];
62 tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.two);
63 tsu_render;
64 endtsuglyph;
65

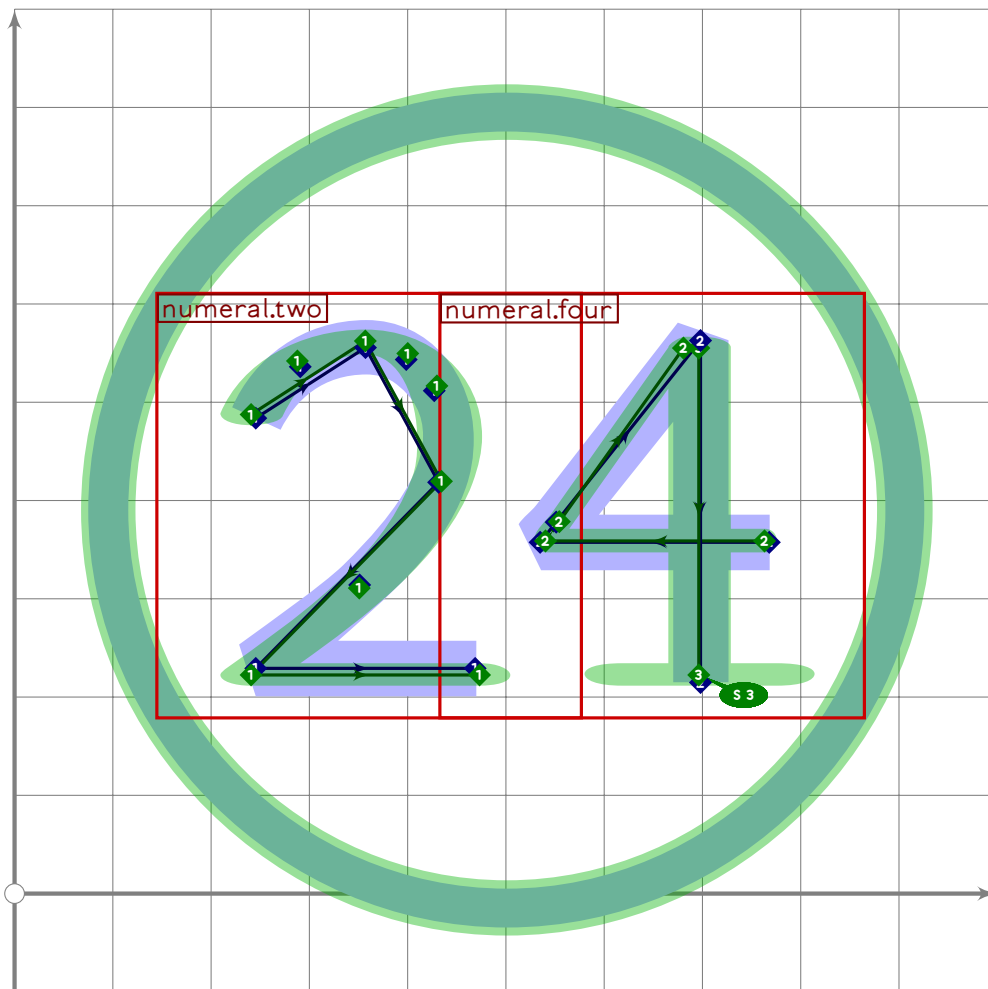
```



```

66 % 23
67 begint Suglyph("uni3253",83);
68 circle.single;
69 tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.two);
70 numeric x[],y[];
71 tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.three);
72 tsu_render;
73 endtsuglyph;
74

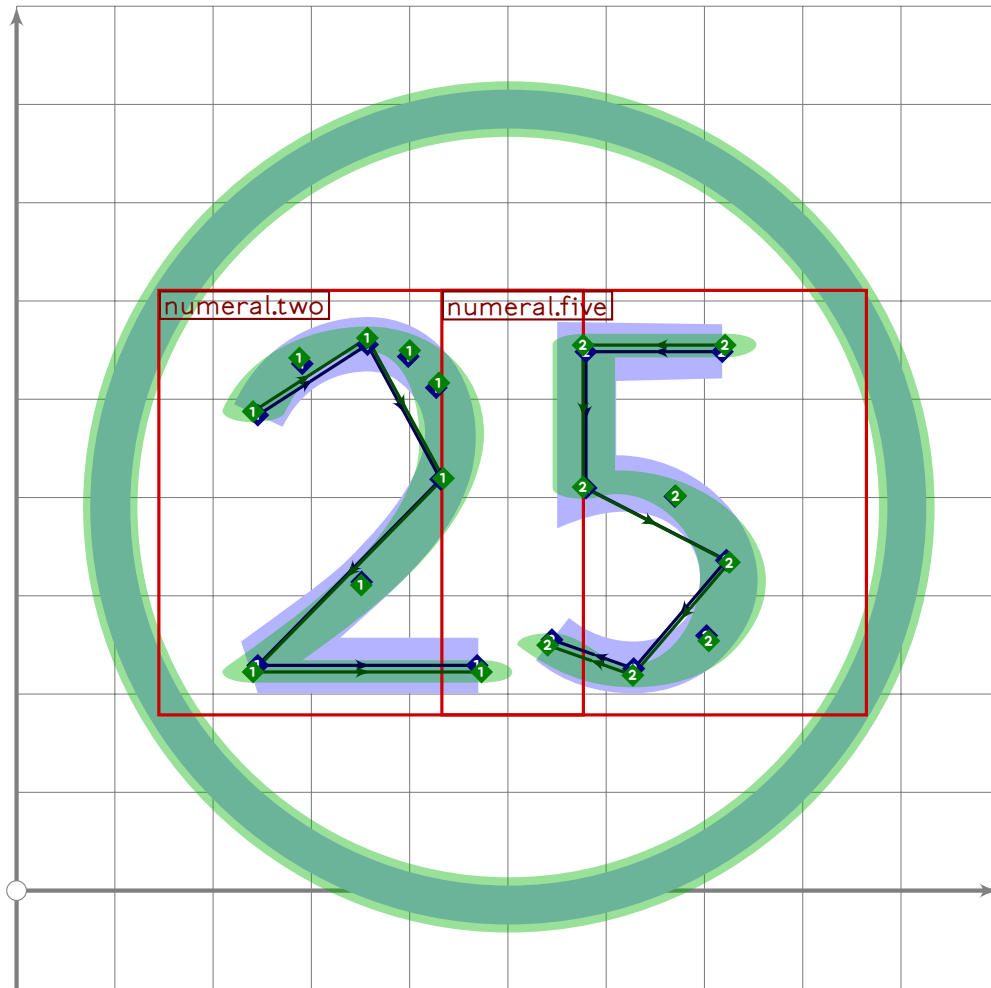
```



```

75 % 24
76 begint Suglyph("uni3254",84);
77   circle.single;
78   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.two);
79   numeric x[],y[];
80   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.four);
81   tsu_render;
82 endtsuglyph;
83

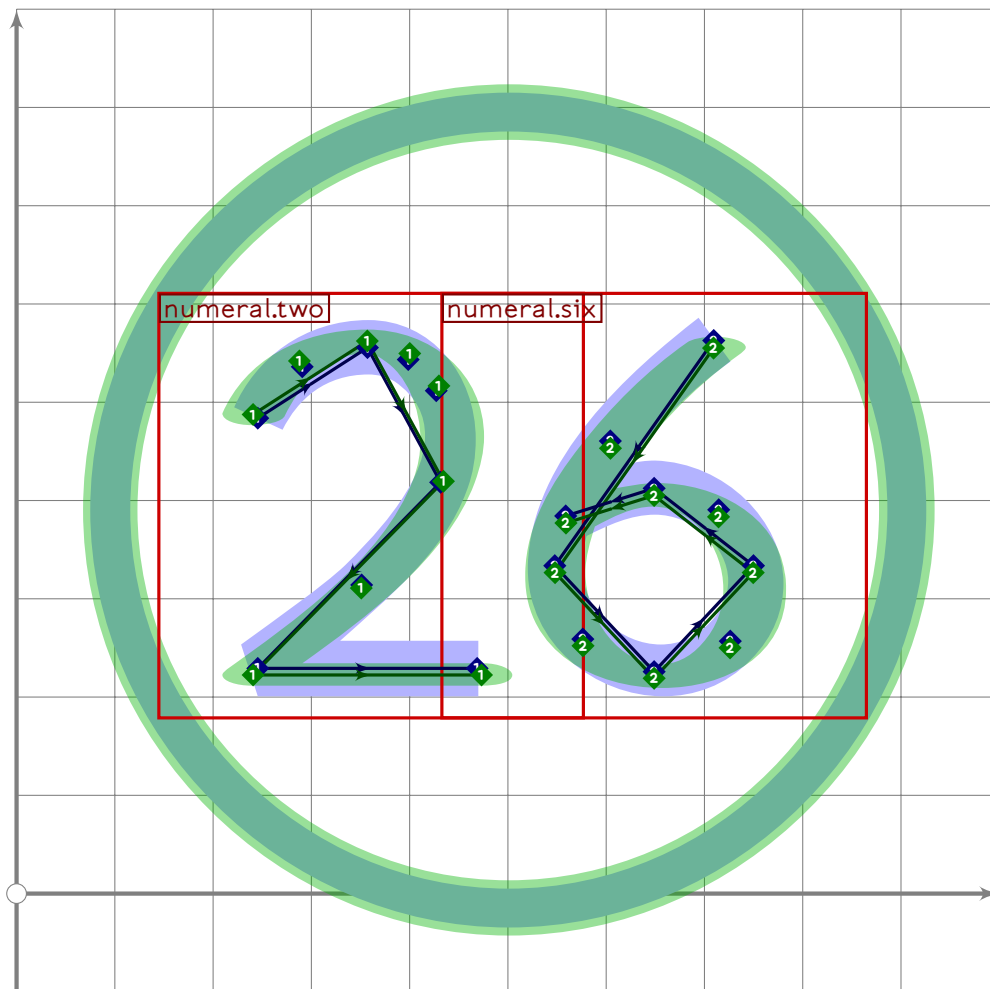
```



```

84 % 25
85 begintsuglyph("uni3255",85);
86 circle.single;
87 tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.two);
88 numeric x[],y[];
89 tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.five);
90 tsu_render;
91 endtsuglyph;
92

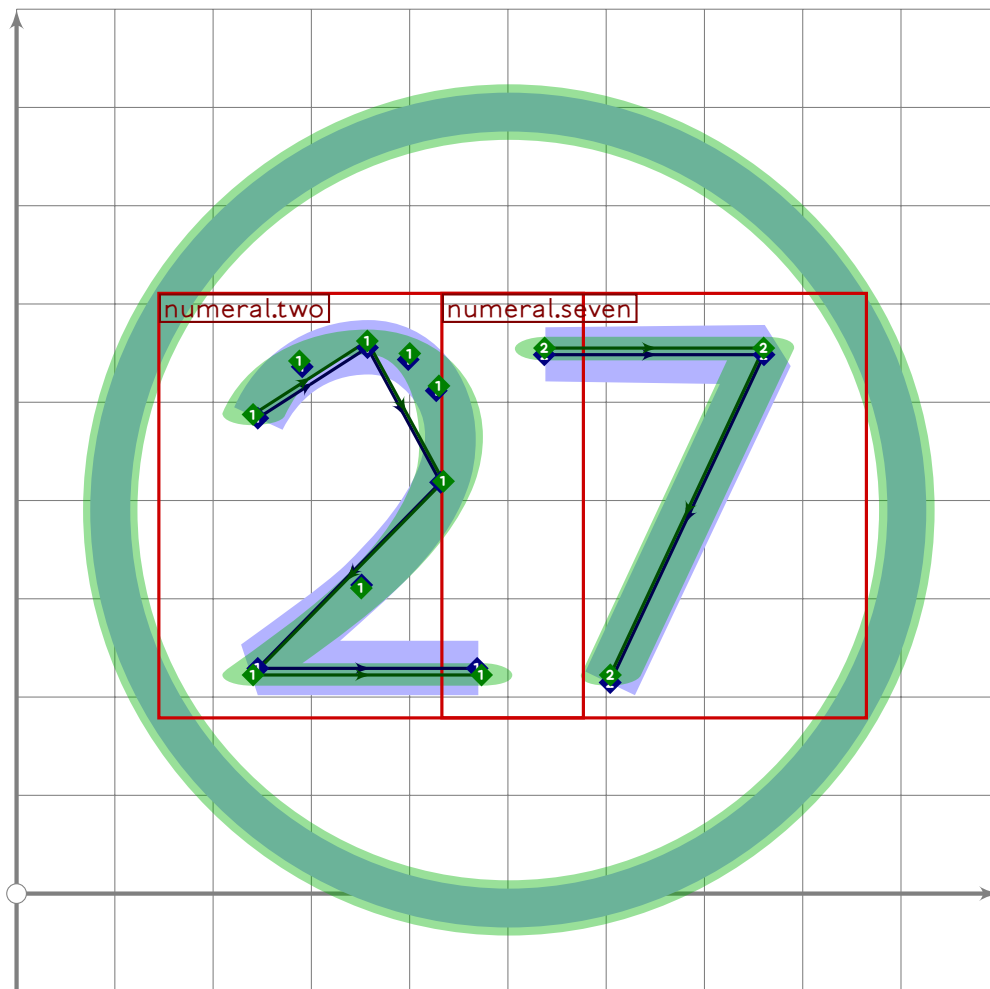
```



```

93 % 26
94 begintsuglyph("uni3256;86);
95   circle.single;
96   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.two);
97   numeric x[],y[];
98   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.six);
99   tsu_render;
100 endtsuglyph;
101

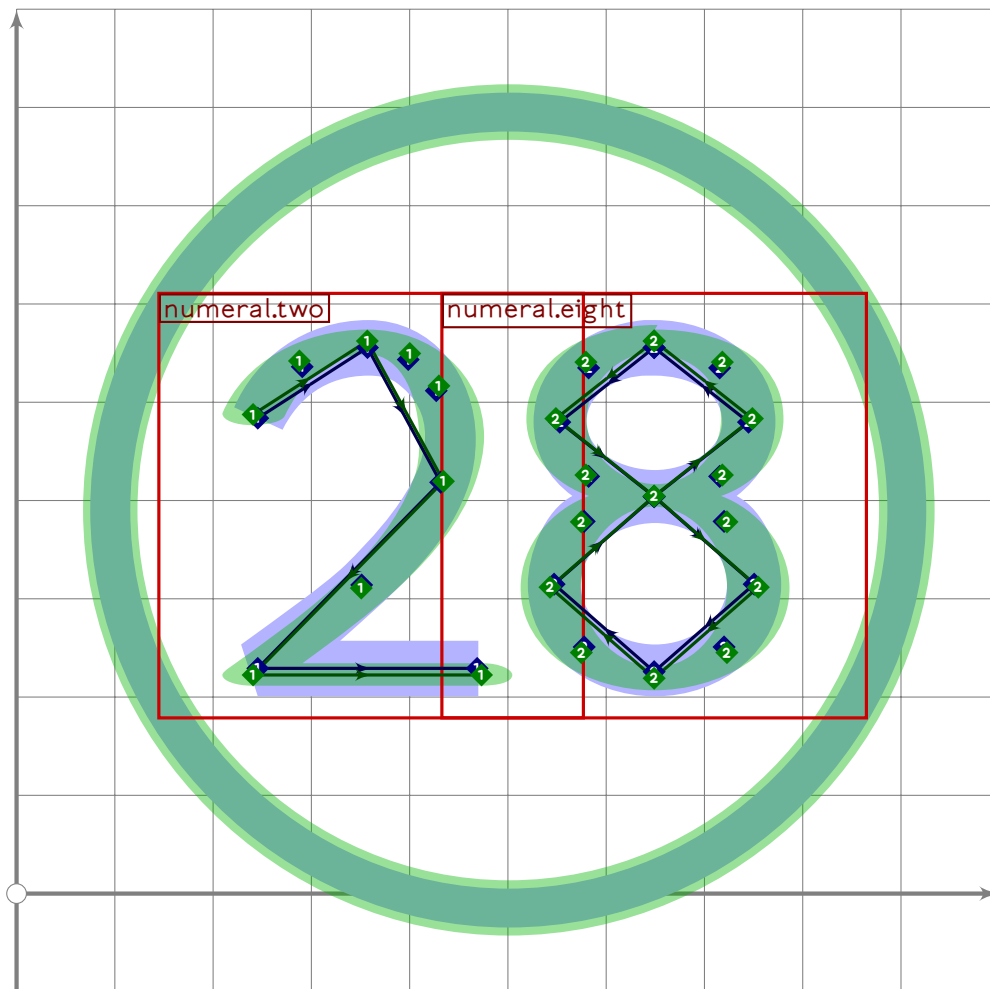
```



```

102 % 27
103 begint Suglyph("uni3257";87);
104   circle.single;
105   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.two);
106   numeric x[],y[];
107   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.seven);
108   tsu_render;
109 endtsuglyph;
110

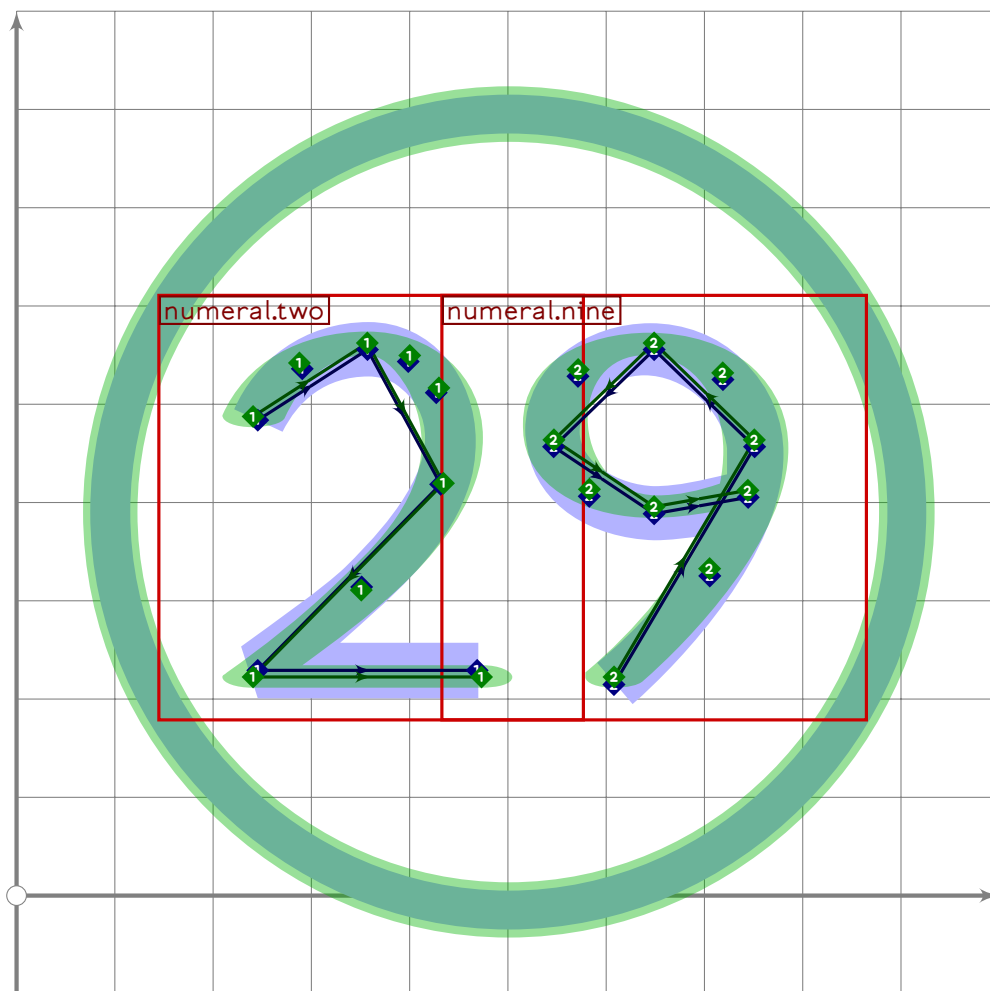
```



```

111 % 28
112 begintsuglyph("uni3258",88);
113   circle.single;
114   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.two);
115   numeric x[],y[];
116   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.eight);
117   tsu_render;
118 endtsuglyph;
119

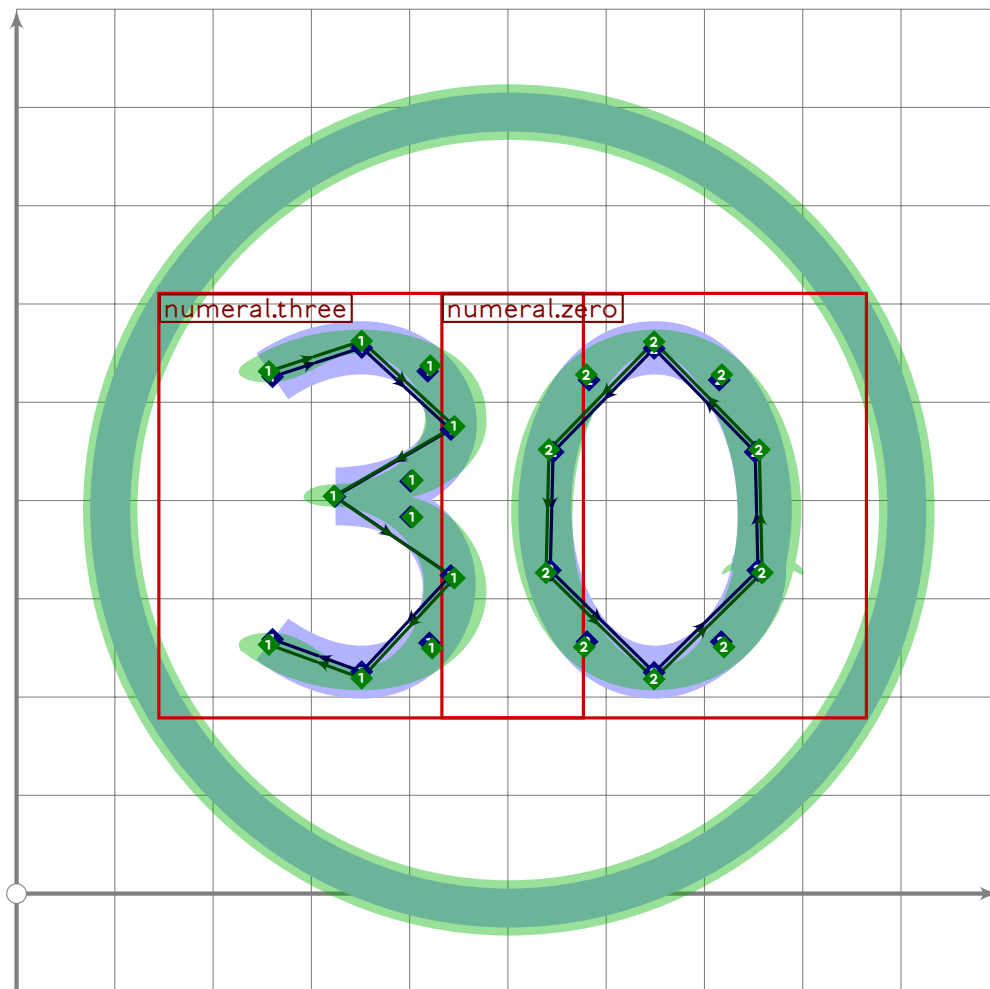
```

```

120 % 29
121 begint Suglyph("uni3259",89);
122   circle.single;
123   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.two);
124   numeric x[],y[];
125   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.nine);
126   tsu_render;
127 endtsuglyph;
128

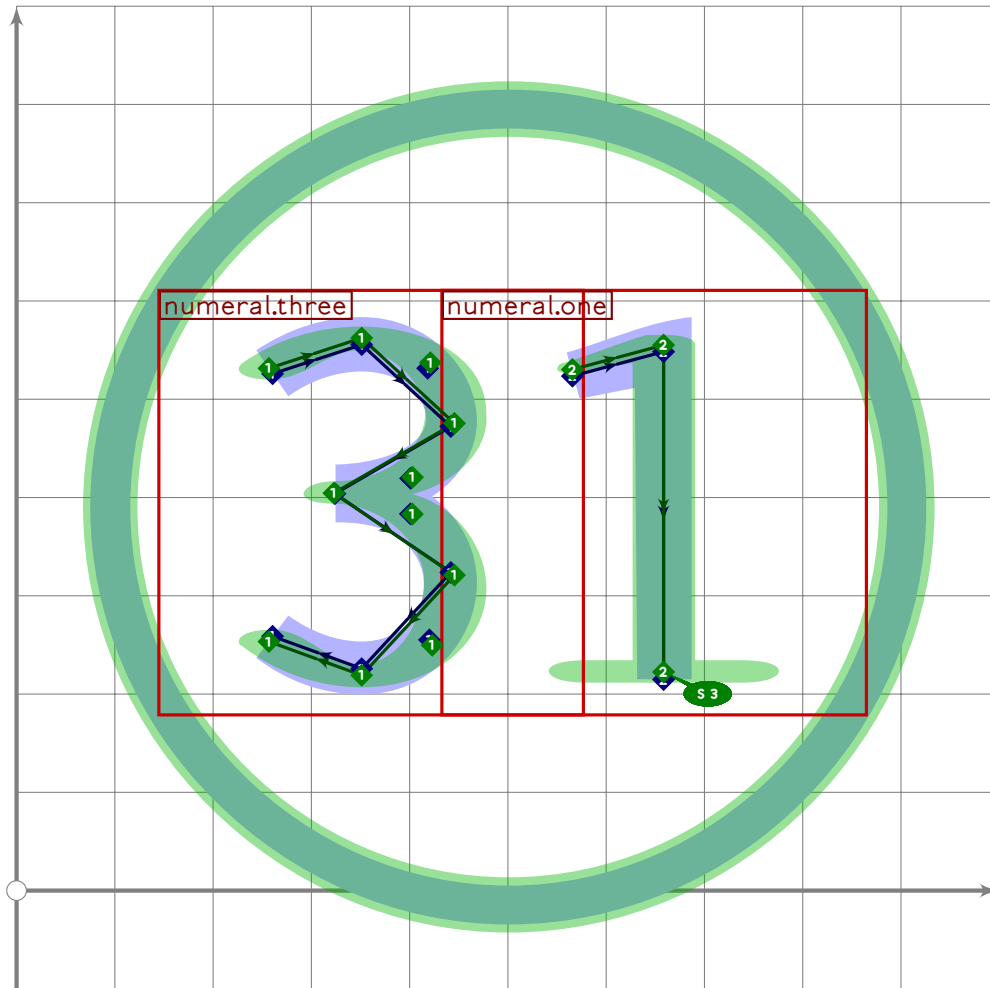
```



```

129 % 30
130 beginsuglyph("uni325A'90);
131   circle.single;
132   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.three);
133   numeric x[],y[];
134   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.zero);
135   tsu_render;
136 endsuglyph;
137

```



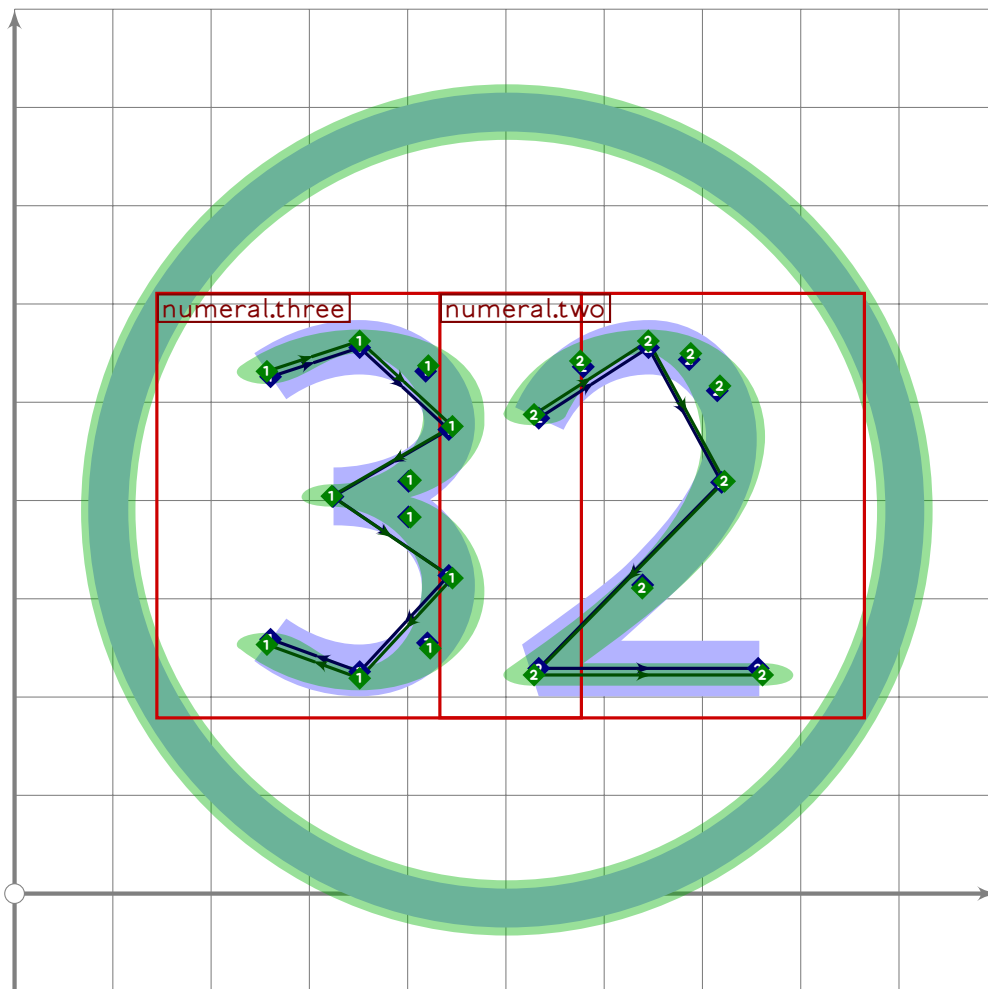
```

138 % 31
139 beginsuglyph("uni325B",91);
140 circle.single;
141 tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.three);
142 numeric x[],y[];
143 tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.one);
144 tsu_render;
145 endtsuglyph;
146

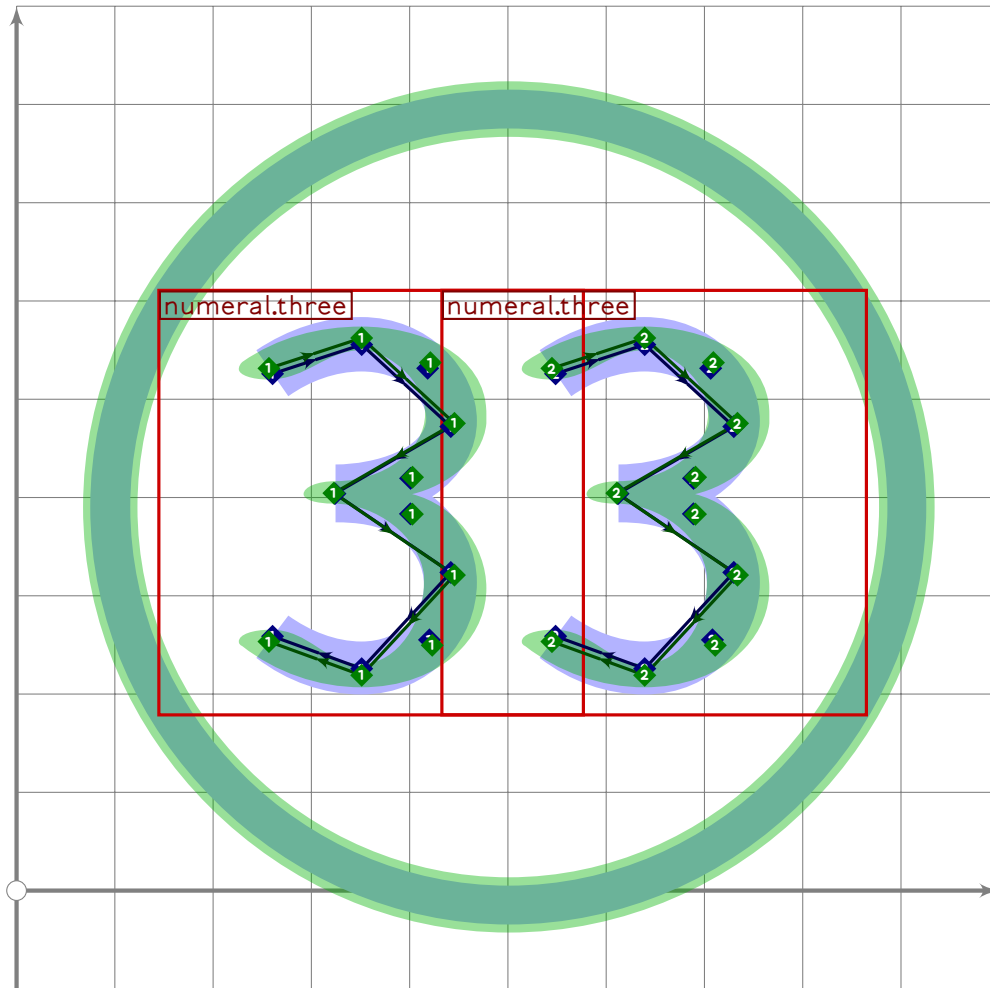
```

U+325C
tsuku.uni325C

32



```
147 % 32
148 begintsuglyph("uni325C";92);
149   circle.single;
150   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.three);
151   numeric x[],y[];
152   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.two);
153   tsu_render;
154 endtsuglyph;
155
```



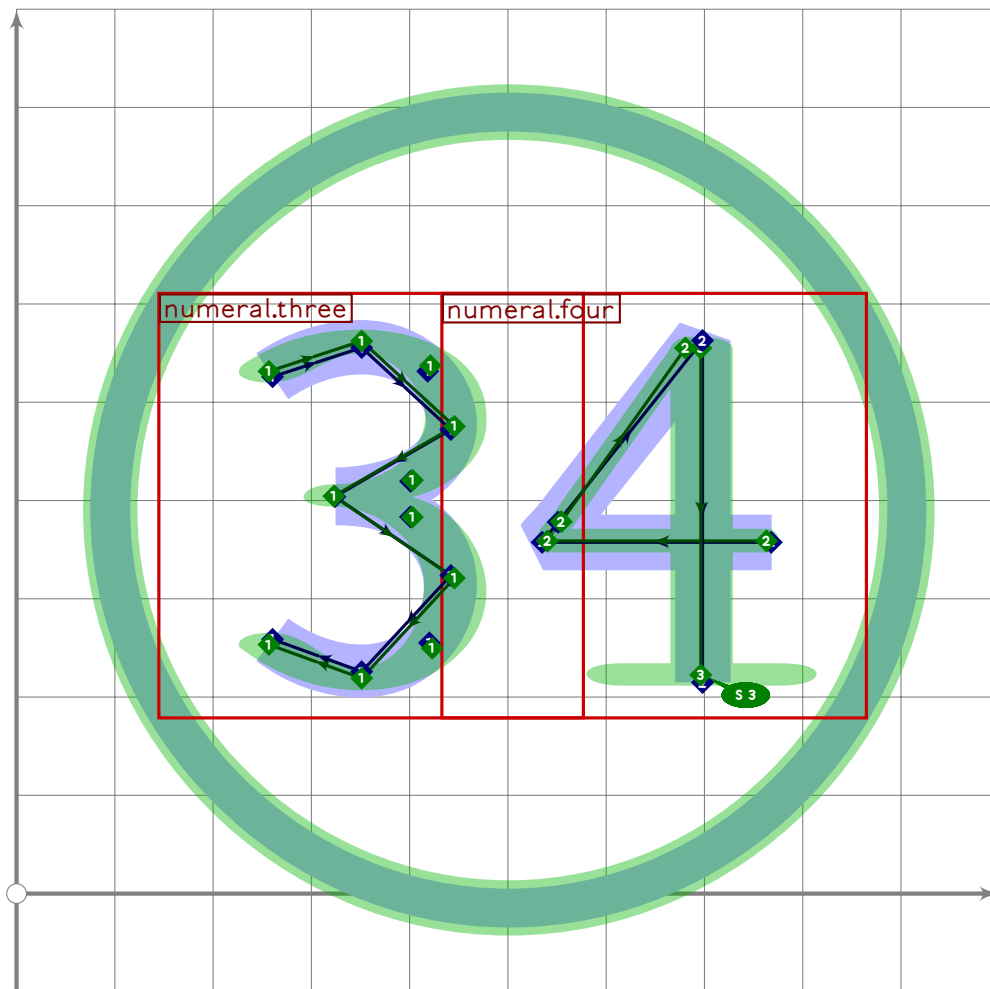
```

156 % 33
157 begint Suglyph("uni325D";93);
158   circle.single;
159   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.three);
160   numeric x[],y[];
161   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.three);
162   tsu_render;
163 endtsuglyph;
164

```

U+325E
tsuku.uni325E

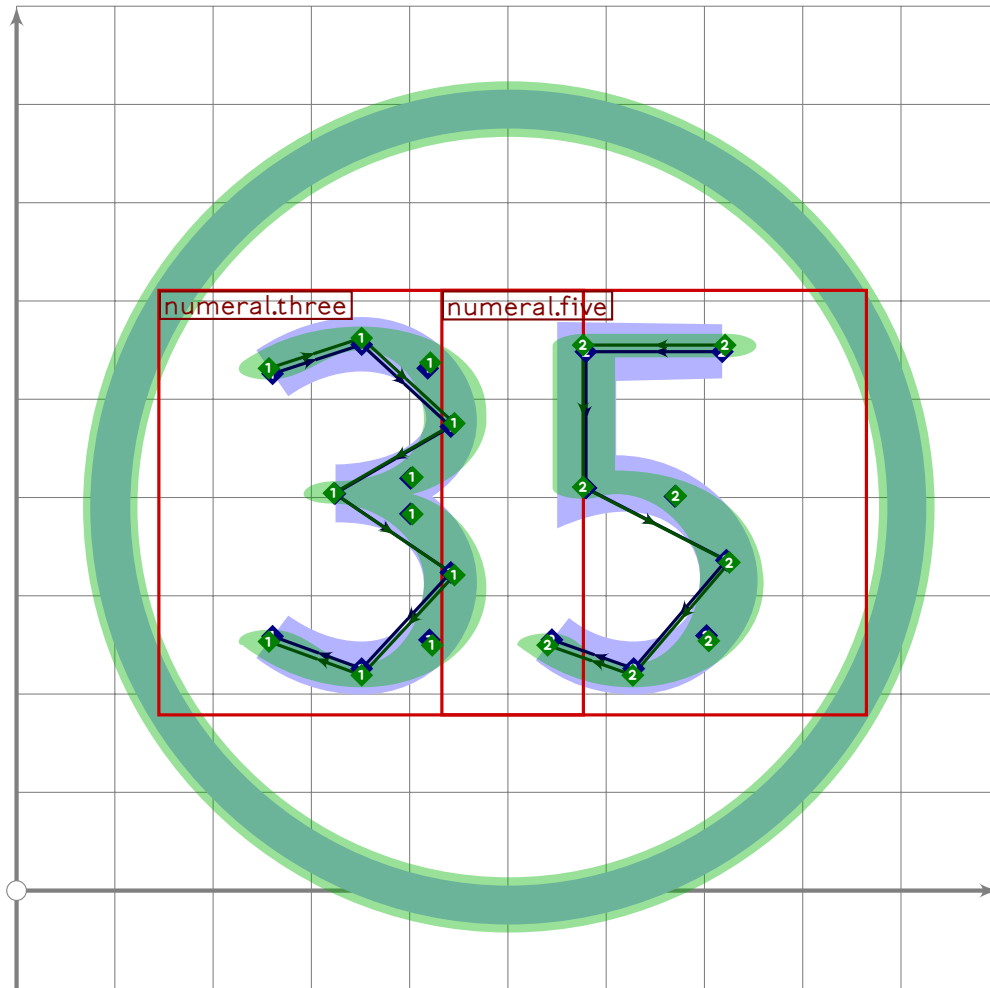
32



```

165 % 34
166 begint Suglyph("uni325E";94);
167   circle.single;
168   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.three);
169   numeric x[],y[];
170   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.four);
171   tsu_render;
172 endtsuglyph;
173

```



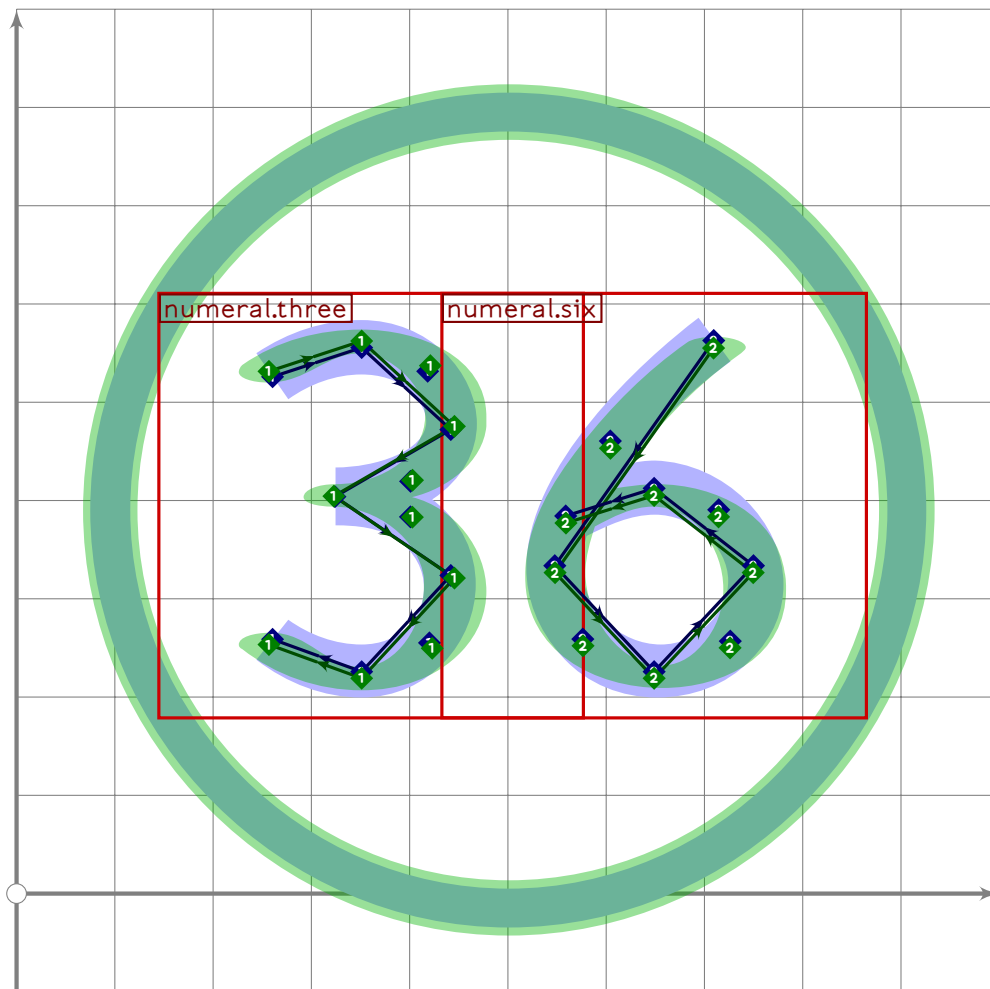
```

174 % 35
175 begint Suglyph("uni325F";95);
176   circle.single;
177   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.three);
178   numeric x[],y[];
179   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.five);
180   tsu_render;
181 endtsuglyph;
182
183 % WARNING discontinuous
184

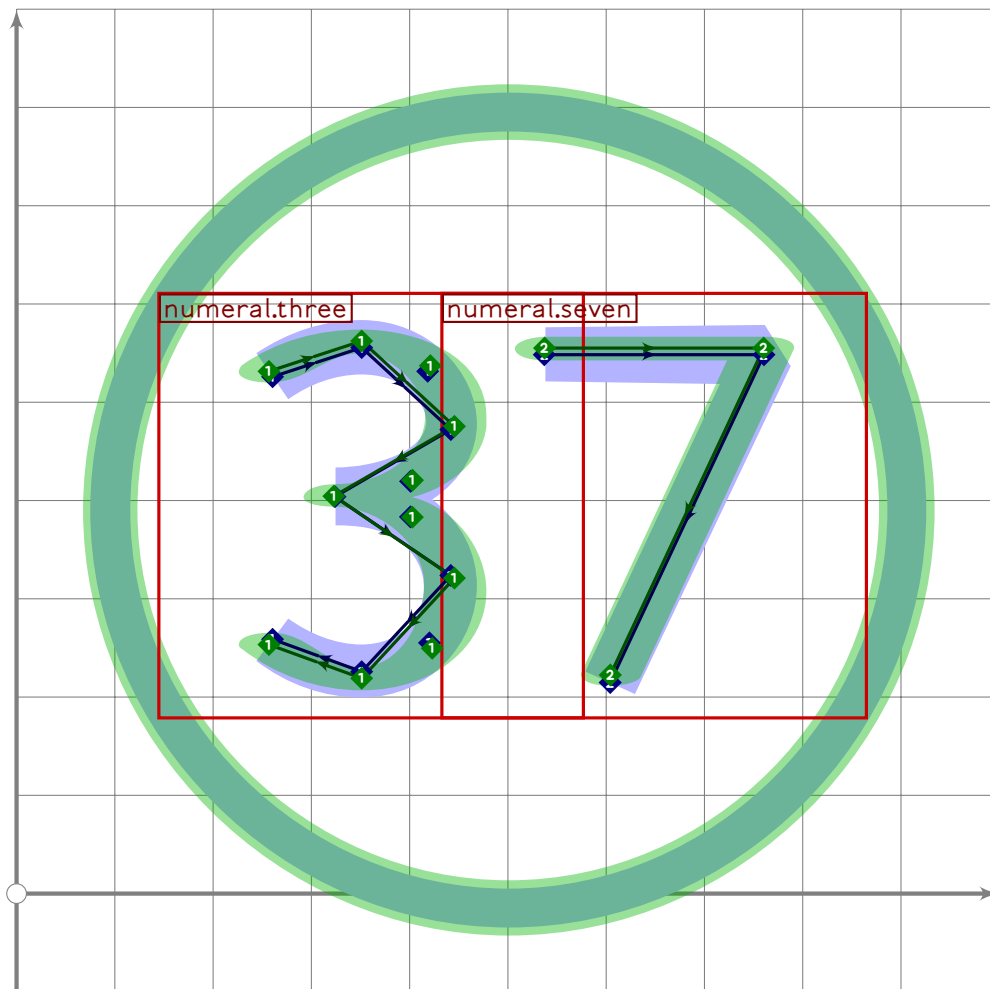
```

U+32B1
tsuku.uni32B1

32



```
185 % 36
186 begintsuglyph("uni32B1",177);
187   circle.single;
188   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.three);
189   numeric x[],y[];
190   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.six);
191   tsu_render;
192 endtsuglyph;
193
```

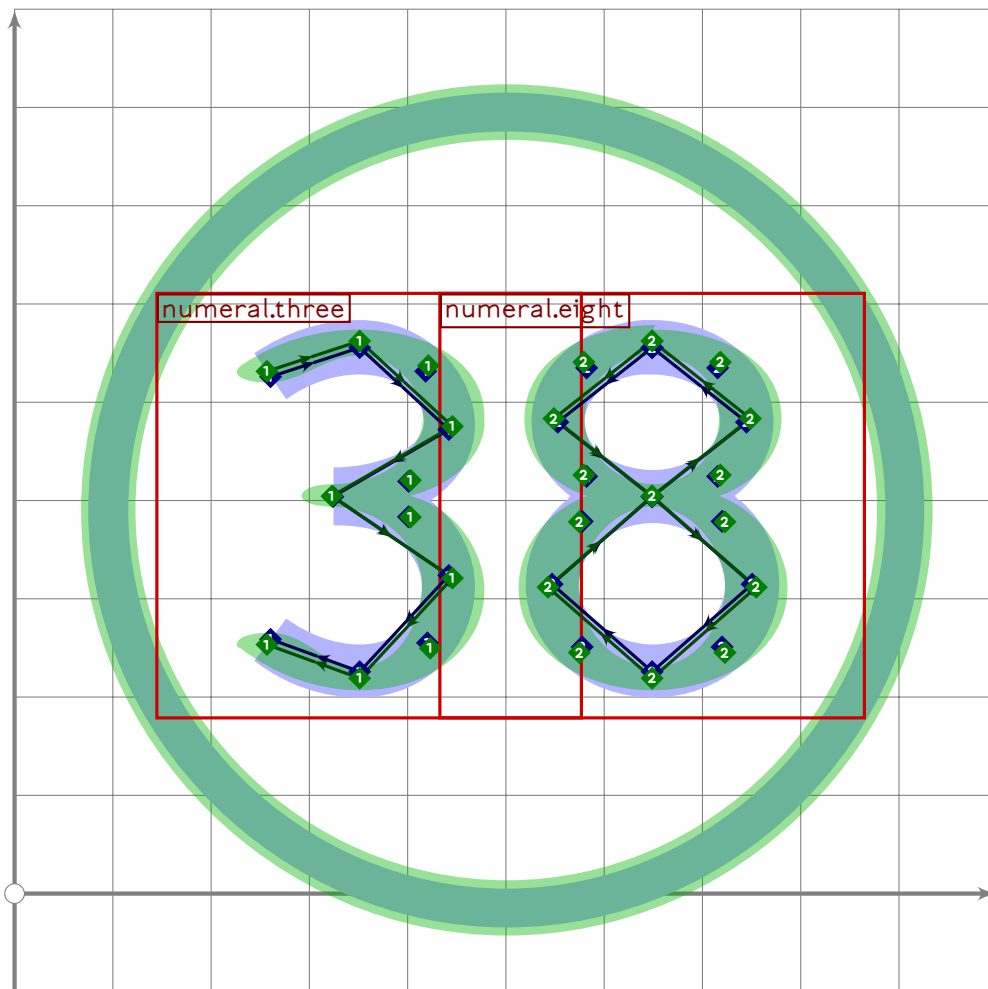
```

194 % 37
195 begint Suglyph("uni32B2";178);
196   circle.single;
197   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.three);
198   numeric x[],y[];
199   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.seven);
200   tsu_render;
201 endtsuglyph;
202

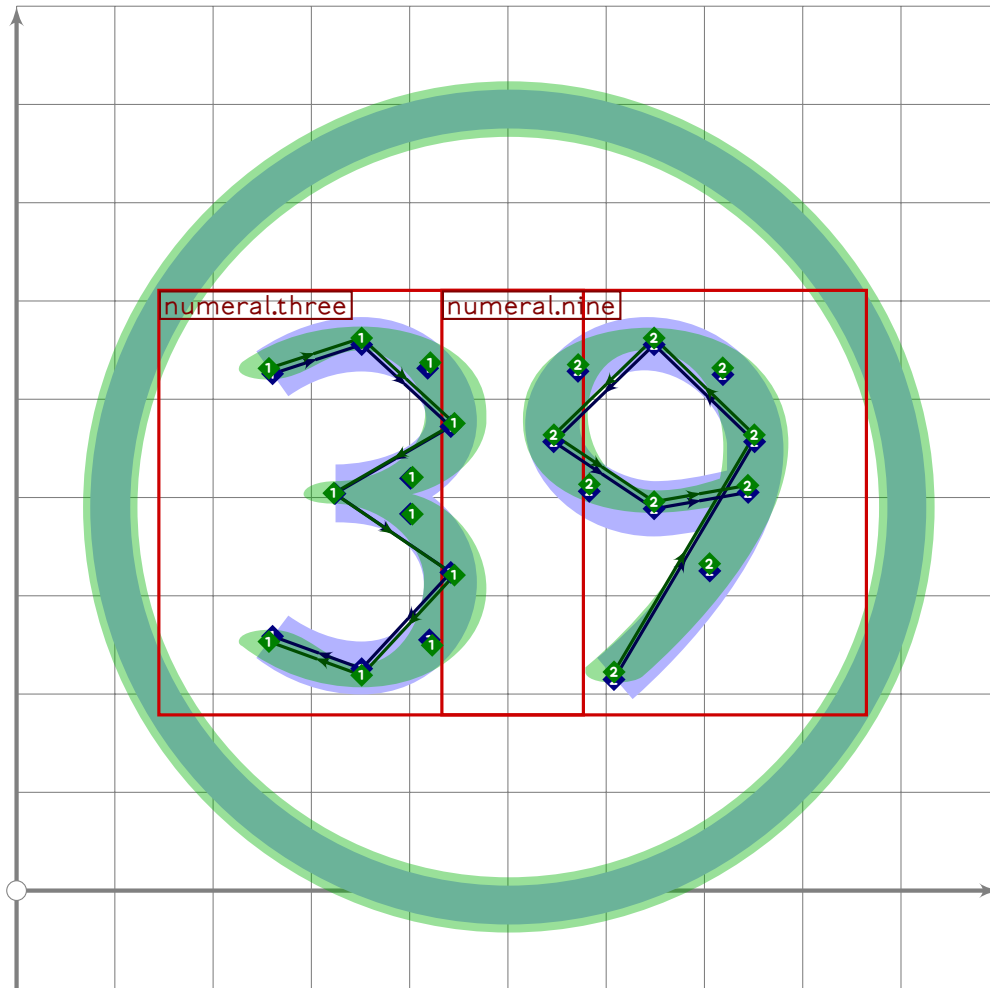
```

U+32B3
tsuku.uni32B3

32



```
203 % 38
204 begintsuglyph("uni32B3",179);
205   circle.single;
206   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.three);
207   numeric x[],y[];
208   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.eight);
209   tsu_render;
210 endtsuglyph;
211
```



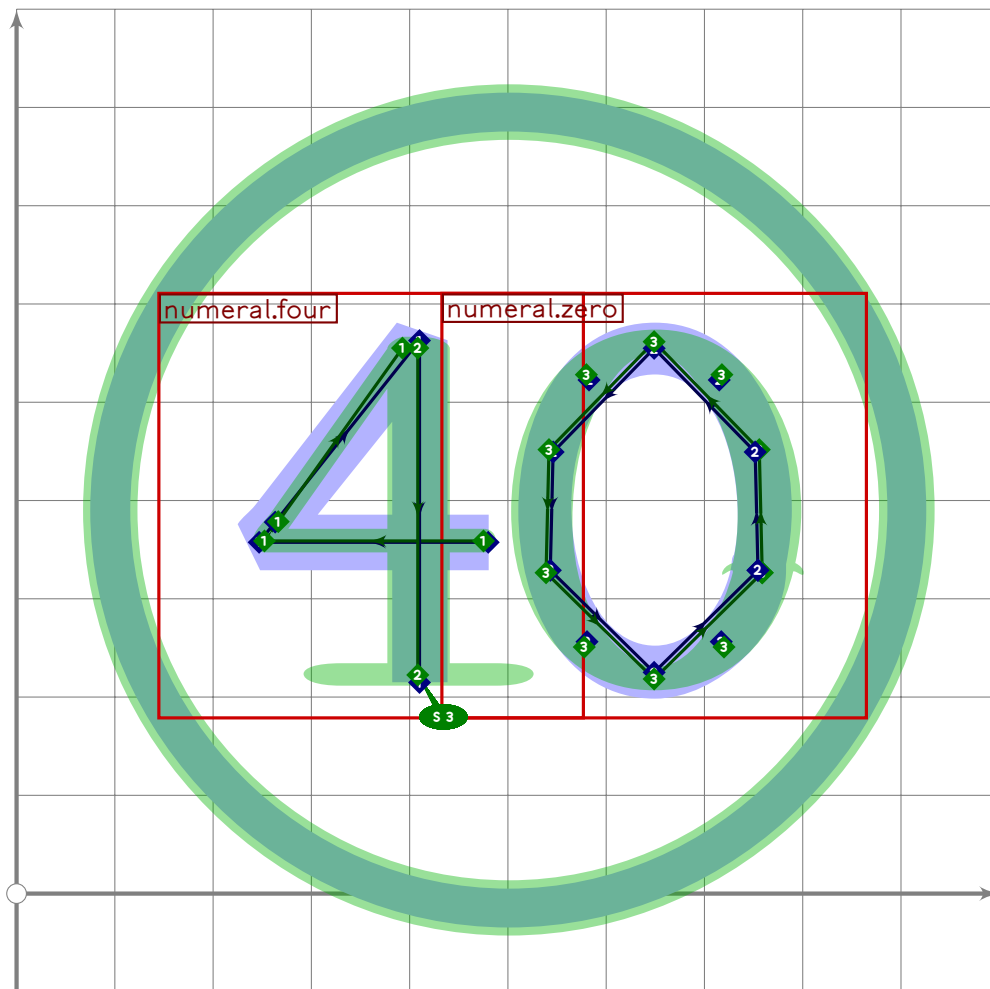
```

212 % 39
213 begint Suglyph("uni32B4";180);
214   circle.single;
215   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.three);
216   numeric x[],y[];
217   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.nine);
218   tsu_render;
219 endtsuglyph;
220

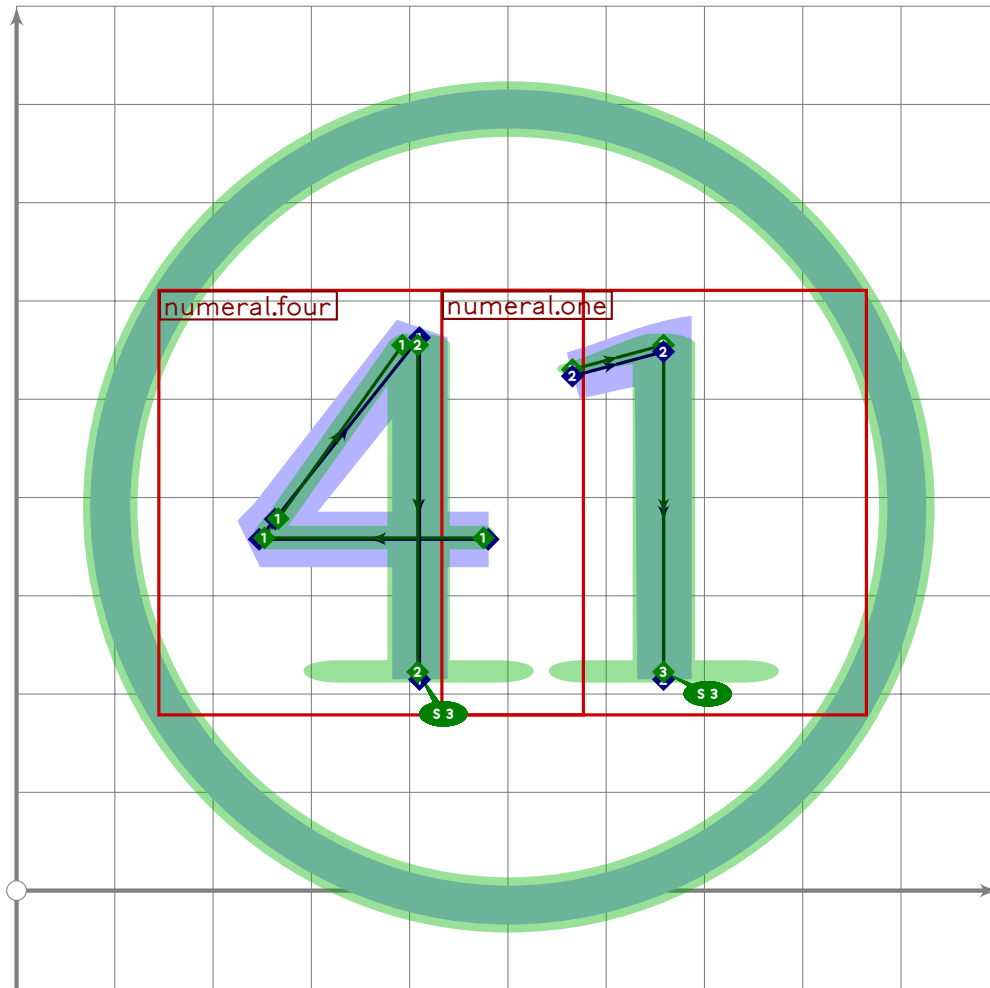
```

U+32B5
tsuku.uni32B5

32



```
221 % 40
222 beginsuglyph("uni32B5",181);
223   circle.single;
224   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.four);
225   numeric x[],y[];
226   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.zero);
227   tsu_render;
228 endtsuglyph;
229
```



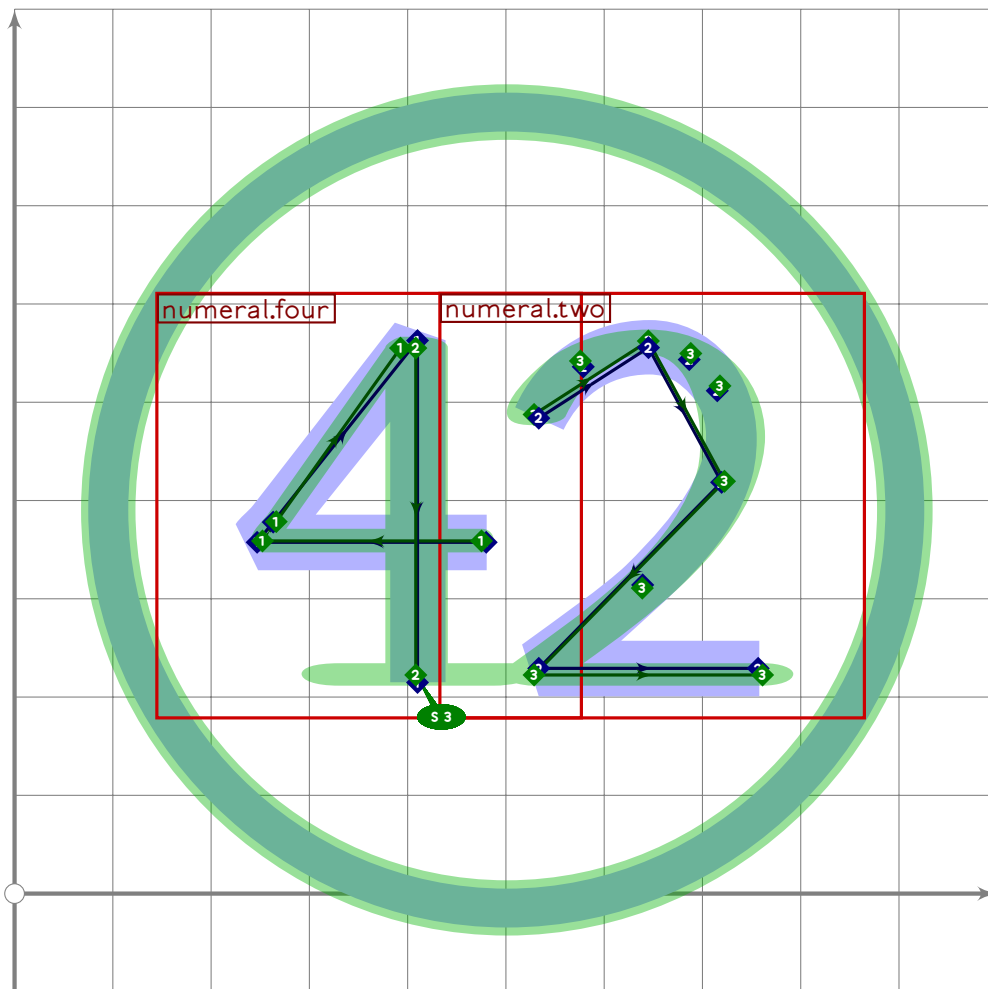
```

230 % 41
231 begint Suglyph("uni32B6",182);
232   circle.single;
233   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.four);
234   numeric x[],y[];
235   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.one);
236   tsu_render;
237 endtsuglyph;
238

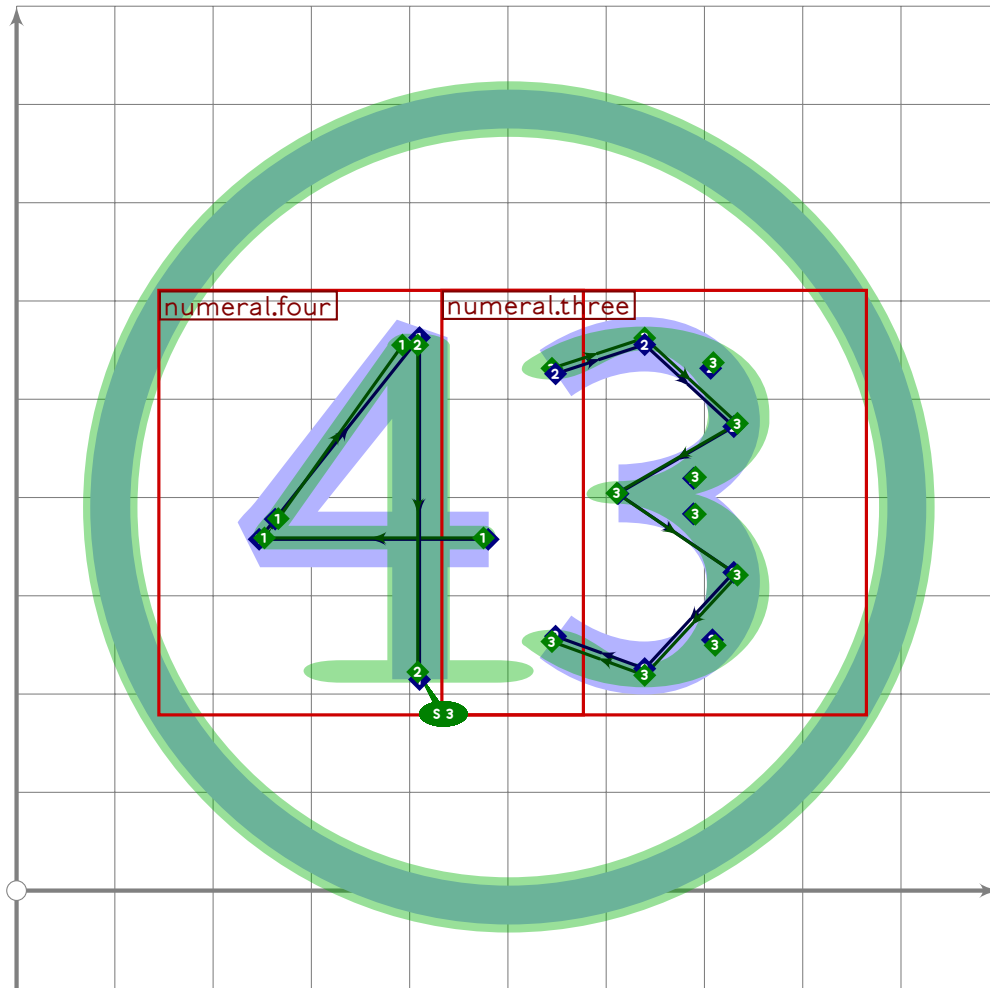
```

U+32B7
tsuku.uni32B7

32



```
239 % 42
240 begintsuglyph("uni32B7";183);
241   circle.single;
242   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.four);
243   numeric x[],y[];
244   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.two);
245   tsu_render;
246 endtsuglyph;
247
```



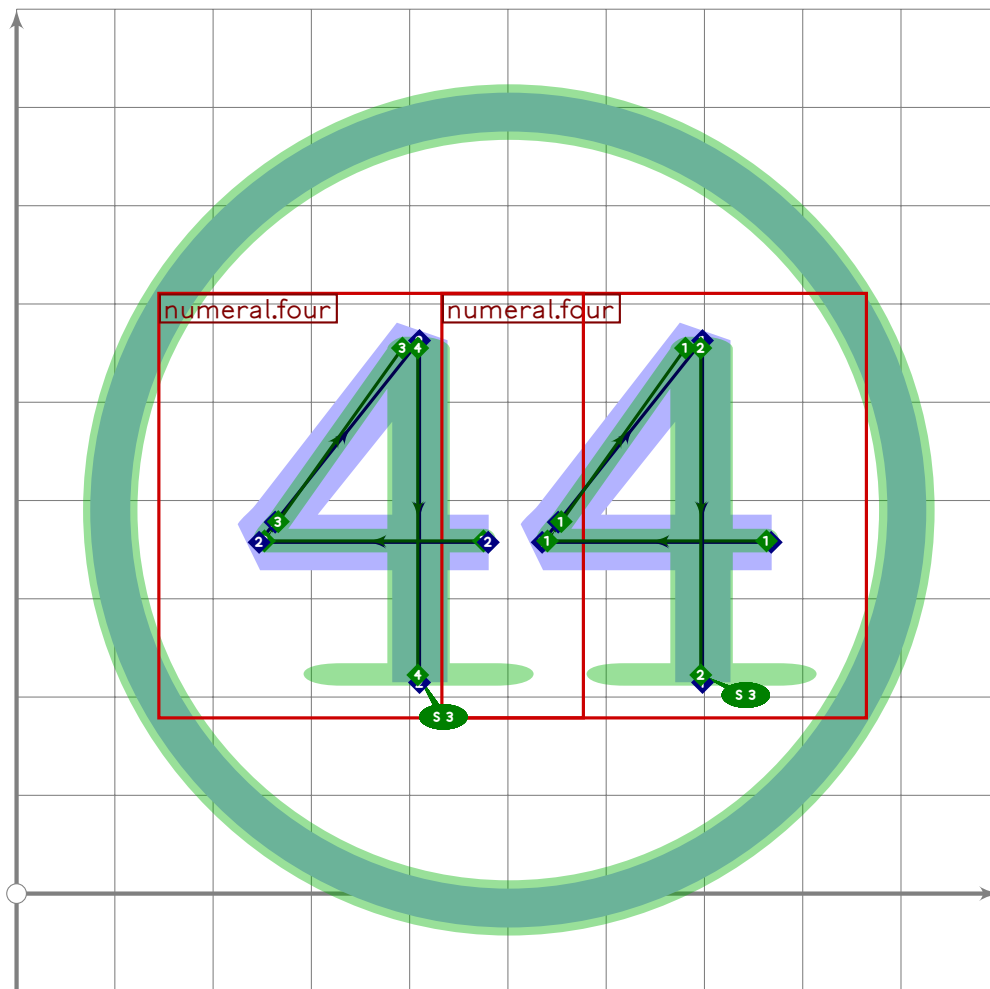
```

248 % 43
249 begint Suglyph("uni32B8",184);
250   circle.single;
251   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.four);
252   numeric x[],y[];
253   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.three);
254   tsu_render;
255 endtsuglyph;
256

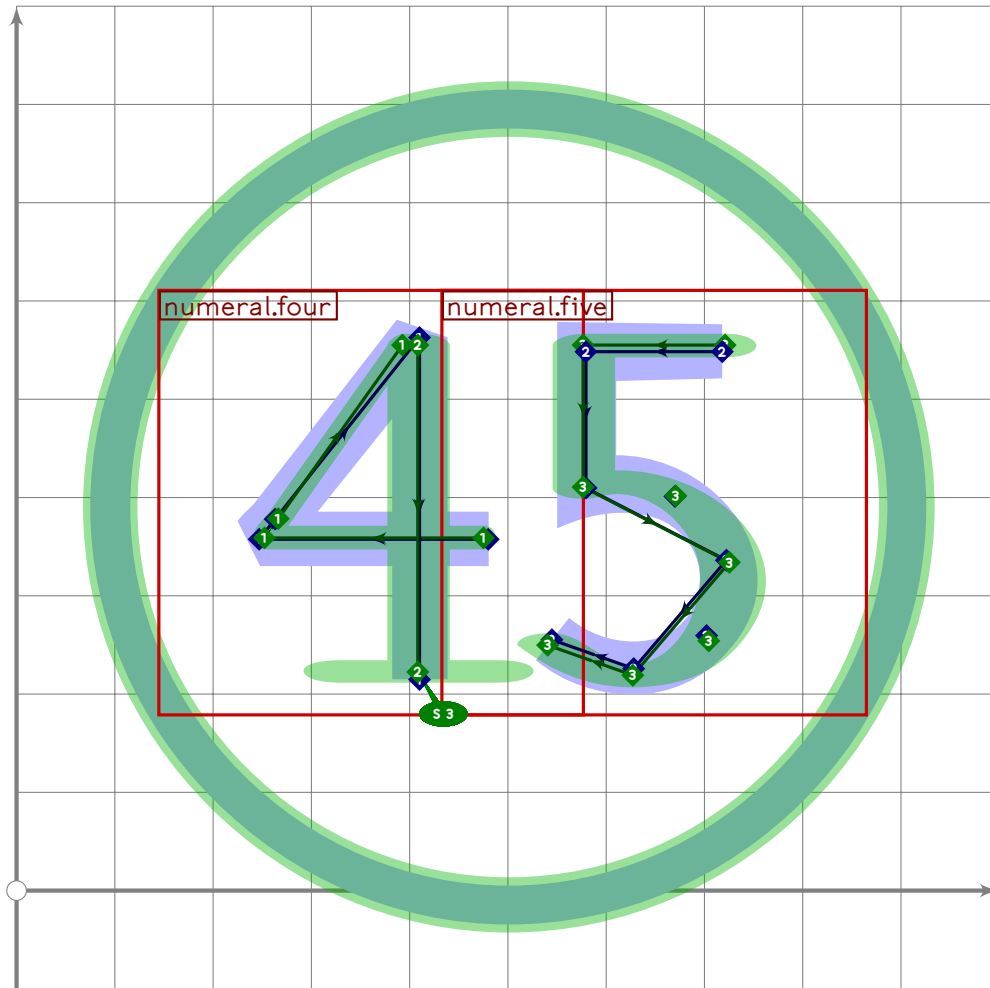
```

U+32B9
tsuku.uni32B9

32



```
257 % 44
258 begintsuglyph("uni32B9",185);
259   circle.single;
260   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.four);
261   numeric x[],y[];
262   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.four);
263   tsu_render;
264 endtsuglyph;
265
```

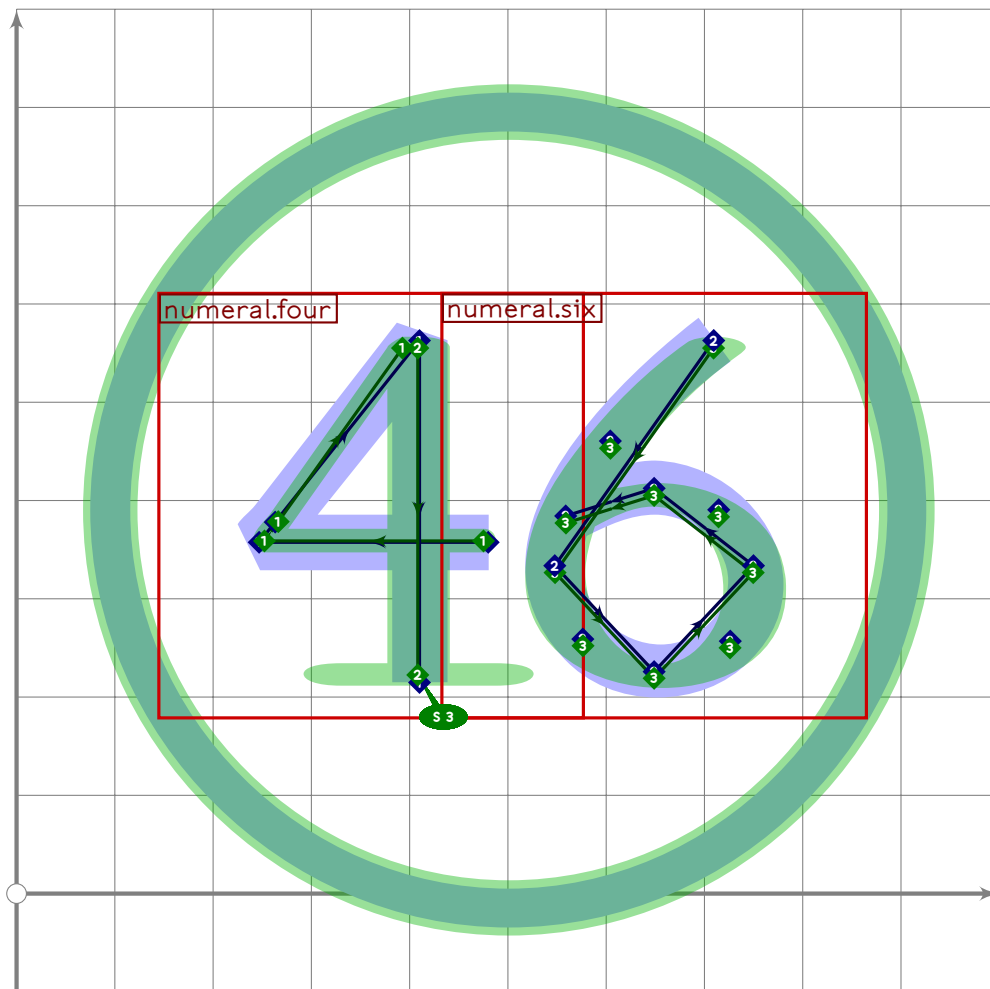
```

266 % 45
267 beginsuglyph("uni32BA",186);
268   circle.single;
269   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.four);
270   numeric x[],y[];
271   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.five);
272   tsu_render;
273 endsuglyph;
274

```

U+32BB
tsuku.uni32BB

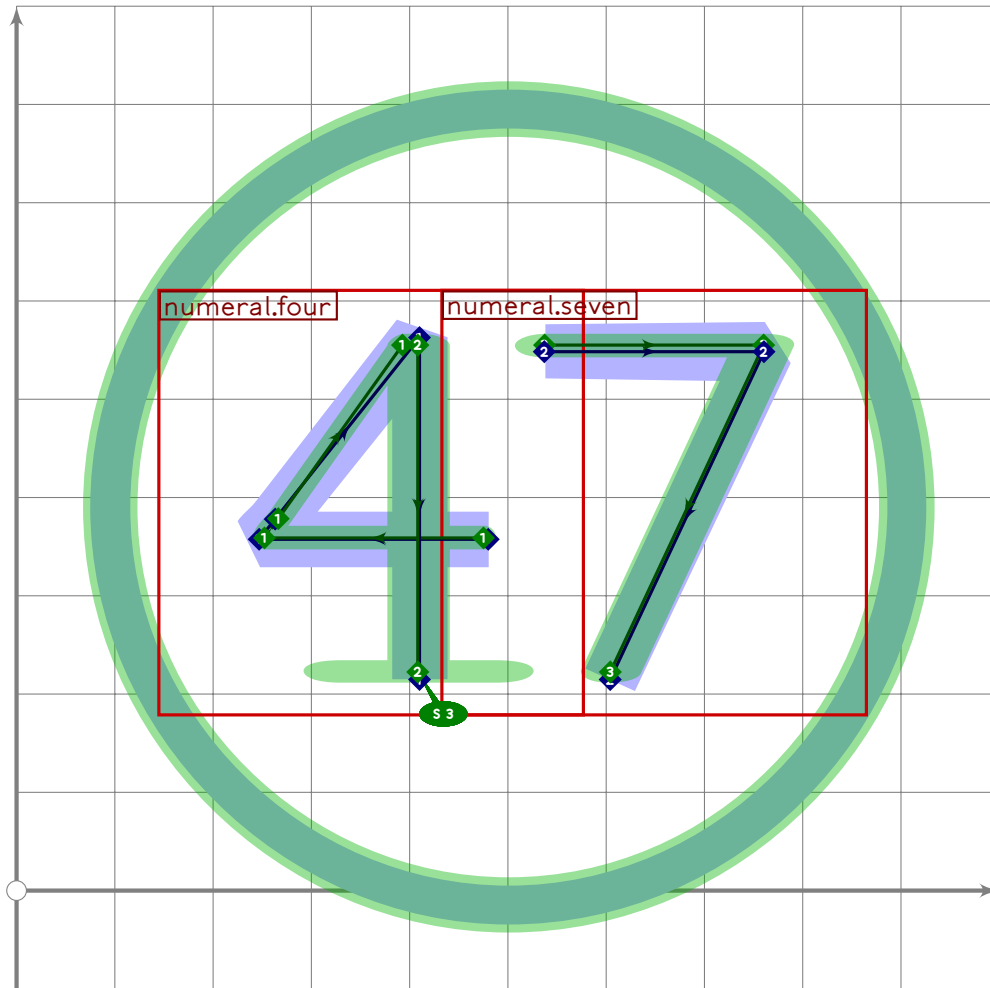
32



```

275 % 46
276 begintsuglyph("uni32BB",187);
277   circle.single;
278   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.four);
279   numeric x[],y[];
280   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.six);
281   tsu_render;
282 endtsuglyph;
283

```



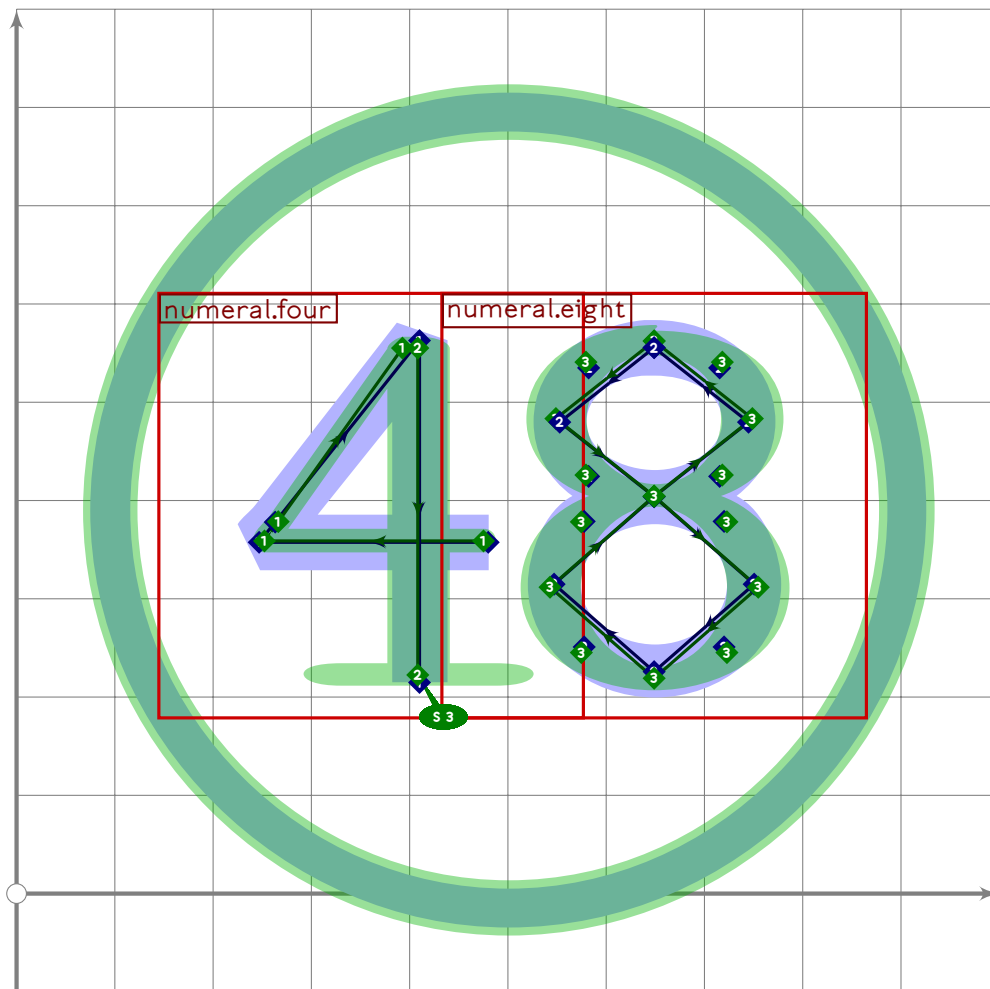
```

284 % 47
285 begint Suglyph("uni32BC",188);
286   circle.single;
287   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.four);
288   numeric x[],y[];
289   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.seven);
290   tsu_render;
291 endtsuglyph;
292

```

U+32BD
tsuku.uni32BD

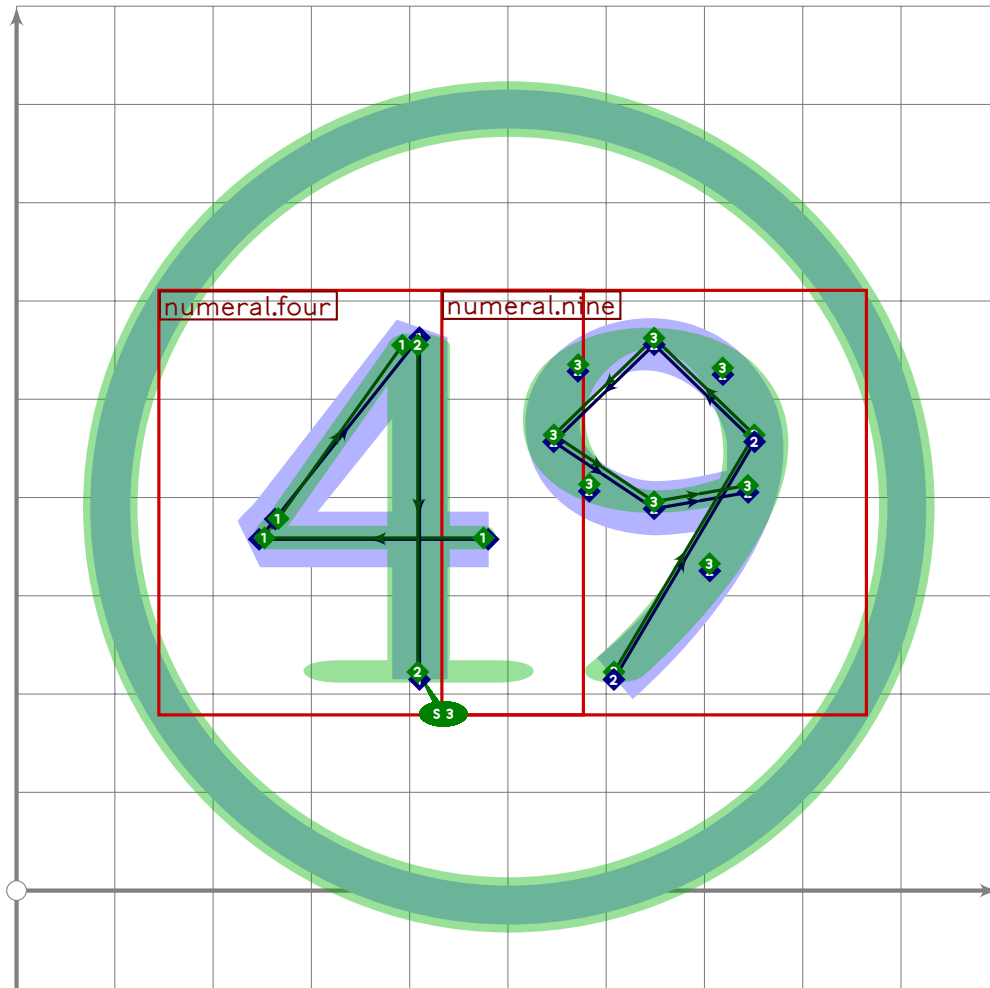
32



```

293 % 48
294 begint Suglyph("uni32BD";189);
295   circle.single;
296   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.four);
297   numeric x[],y[];
298   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.eight);
299   tsu_render;
300 endtsuglyph;
301

```



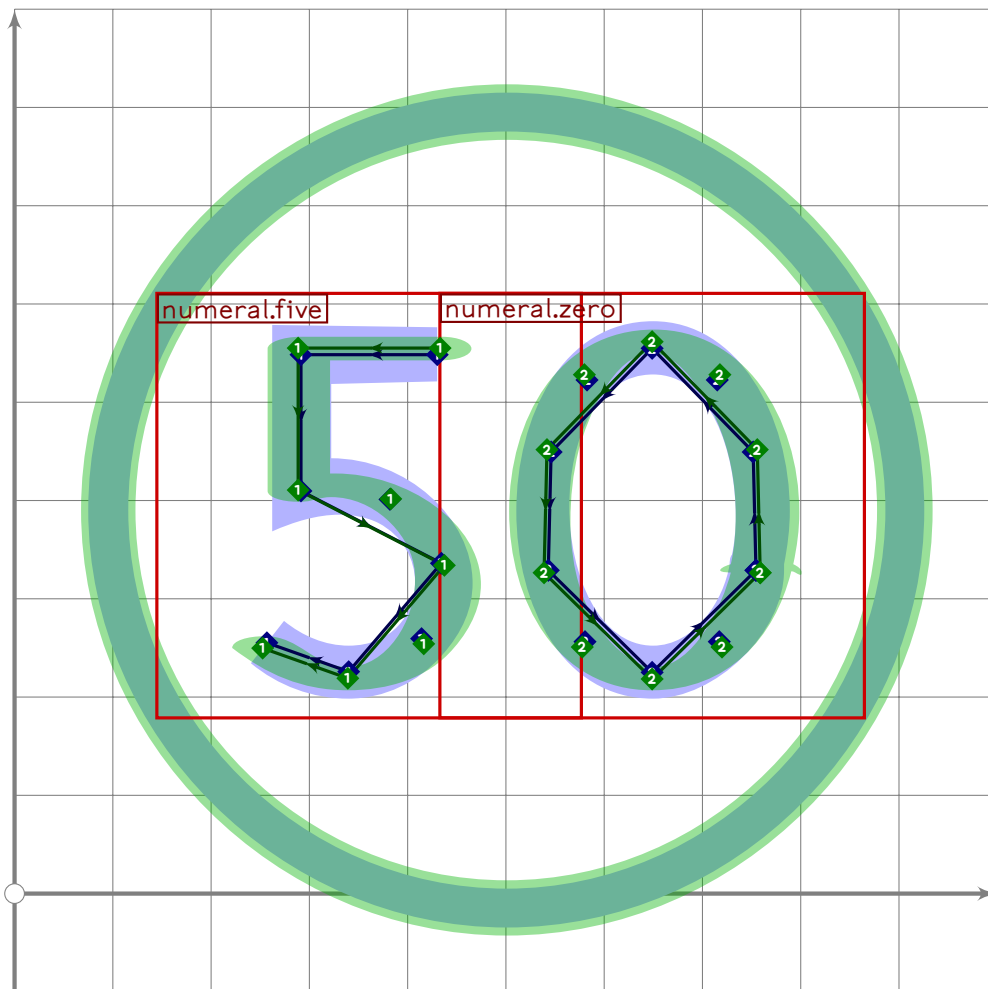
```

302 % 49
303 begint Suglyph("uni32BE";190);
304   circle.single;
305   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.four);
306   numeric x[],y[];
307   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.nine);
308   tsu_render;
309 endtsuglyph;
310

```

U+32BF
tsuku.uni32BF

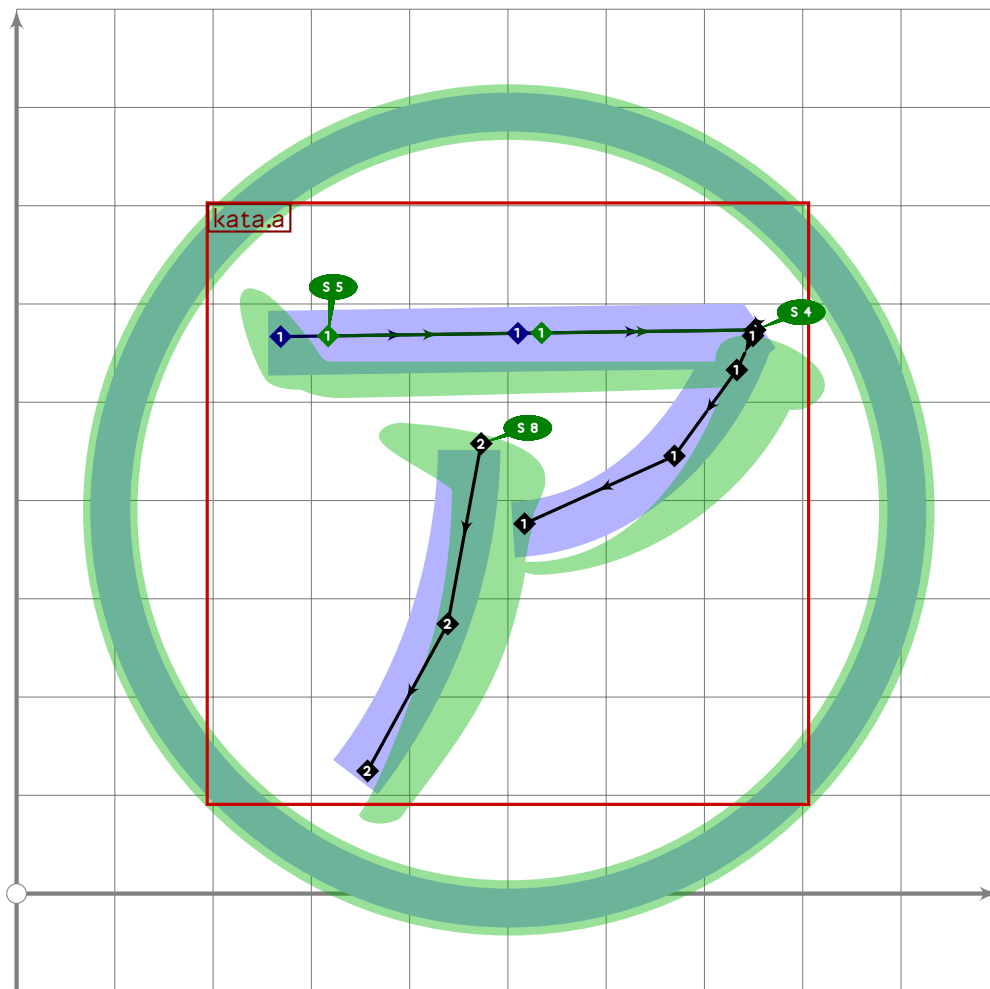
32



```
311 % 50
312 begintsuglyph("uni32BF";191);
313   circle.single;
314   tsu_xform(tsu_xf.ctwo.left shifted tsu_xf.circ_slant_shift)(numeral.five);
315   numeric x[],y[];
316   tsu_xform(tsu_xf.ctwo.right shifted tsu_xf.circ_slant_shift)(numeral.zero);
317   tsu_render;
318 endtsuglyph;
319
320
321
```

Circled Katakana

```
322 % CIRCLED KATAKANA
323
324 rescale_slant:=0;
325
```



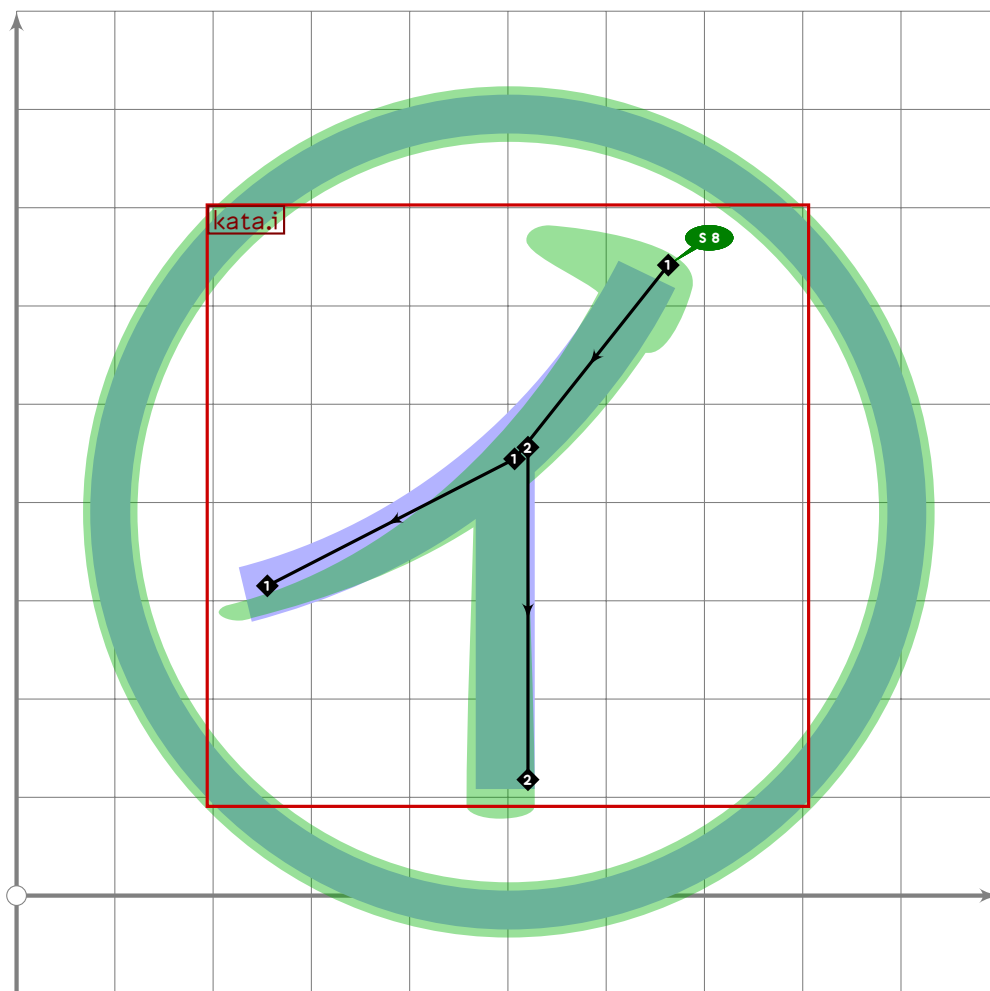
```

326 % circled "a"
327 begintsuglyph("uni32D0";208);
328   circle.single;
329   tsu_xform(tsu_xf.circled)(kata.a);
330   tsu_render_in_circle(tsu_xf.cbound);
331 endtsuglyph;
332

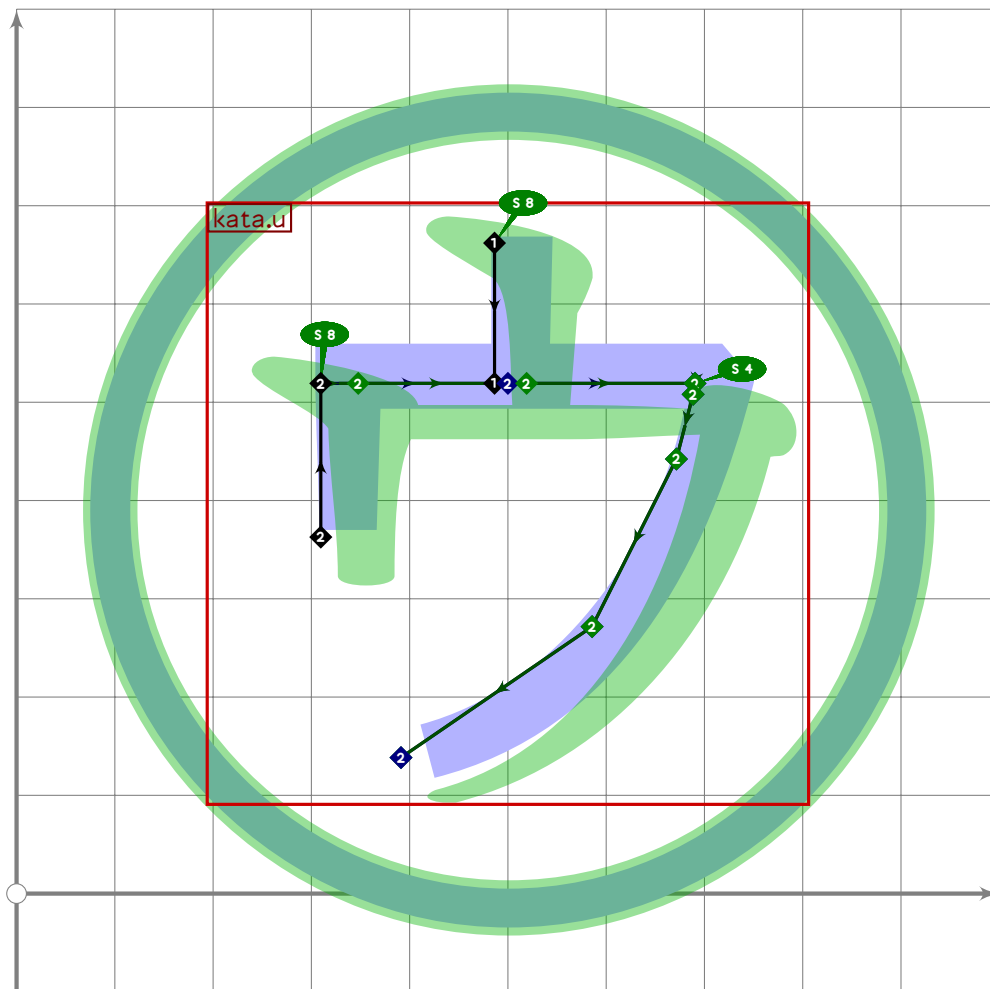
```

U+32D1
tsuku.uni32D1

32



```
333 % circled "i"
334 begintsuglyph("uni32D1";209);
335   circle.single;
336   tsu_xform(tsu_xf.circled)(kata.i);
337   tsu_render_in_circle(tsu_xf.cbound);
338 endtsuglyph;
339
```

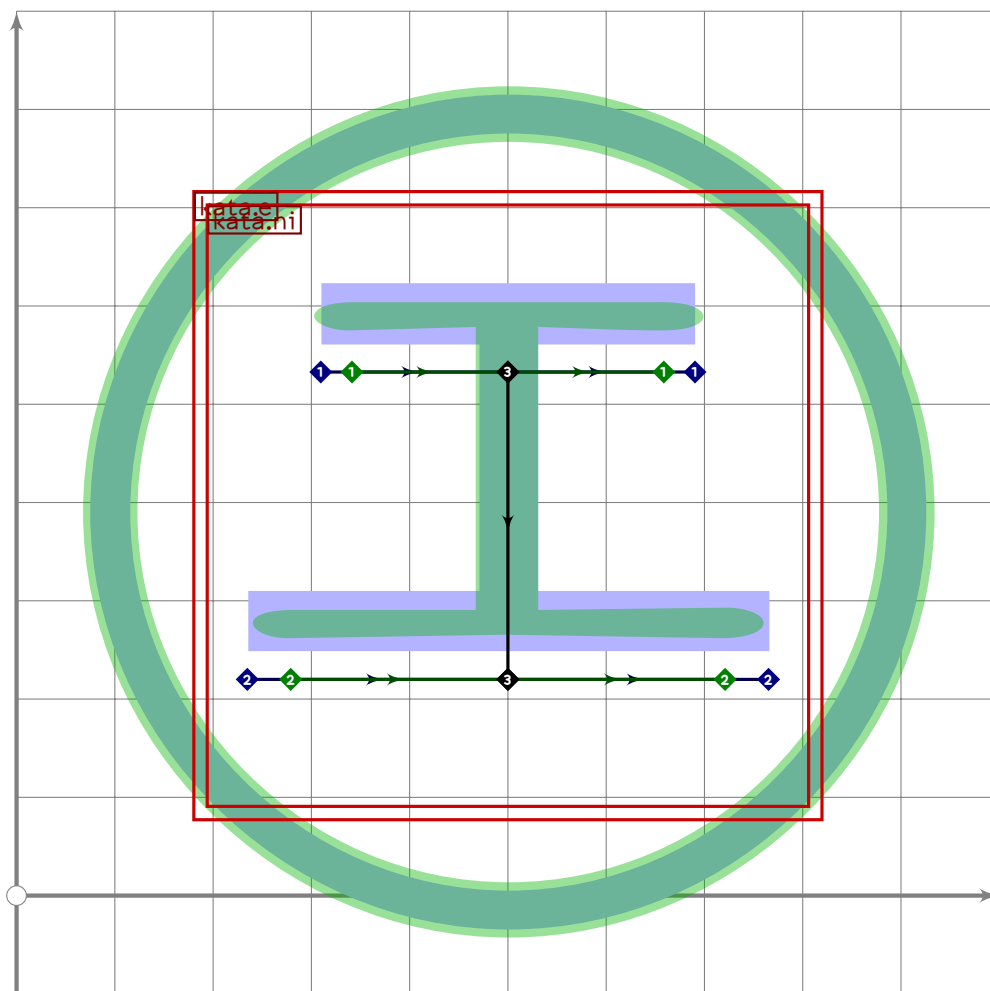
```

340 % circled "u"
341 begint Suglyph("uni32D2";210);
342   circle.single;
343   tsu_xform(tsu_xf.circled)(kata.u);
344   tsu_render_in_circle(tsu_xf.cbound);
345 endtsuglyph;
346

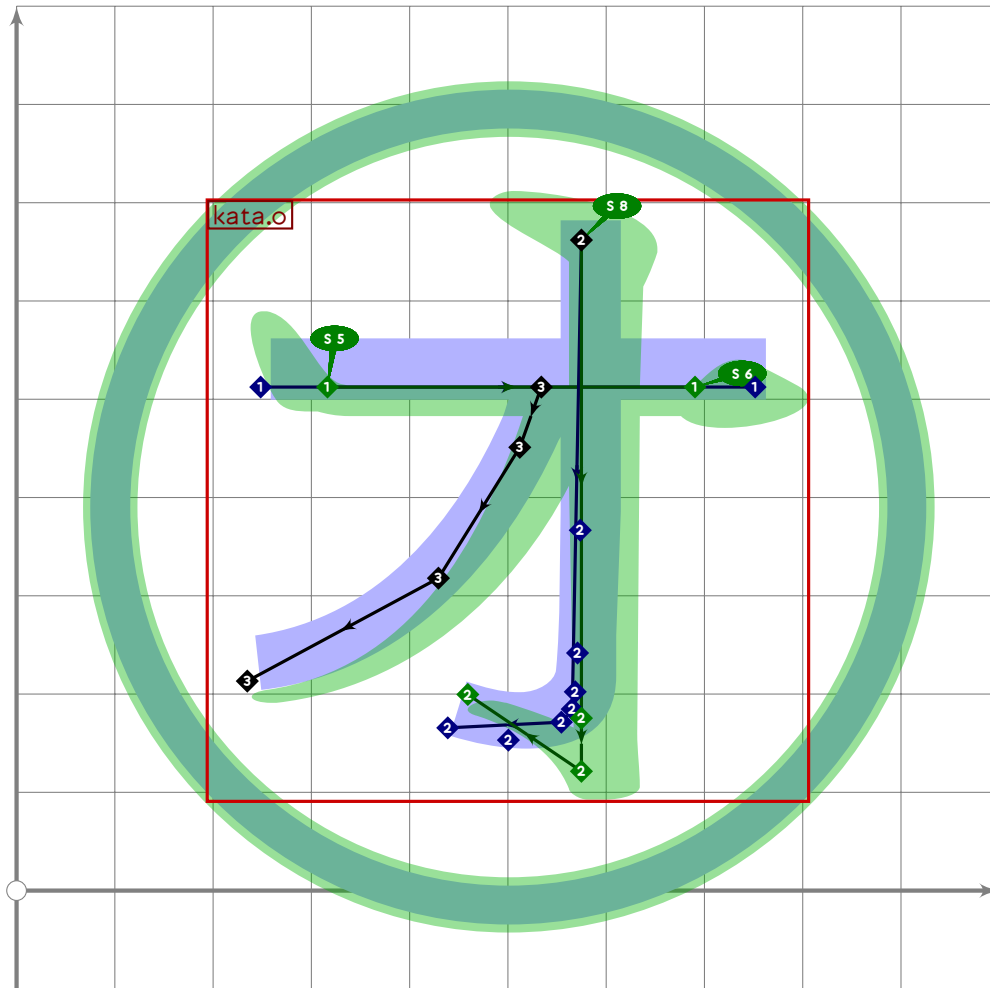
```

U+32D3
tsuku.uni32D3

32



```
347 % circled "e"  
348 begintuglyph("uni32D3";211);  
349   circle.single;  
350   tsu_xform(tsu_xf.circled)(kata.e);  
351   tsu_render_in_circle(tsu_xf.cbound);  
352 endtuglyph;  
353
```



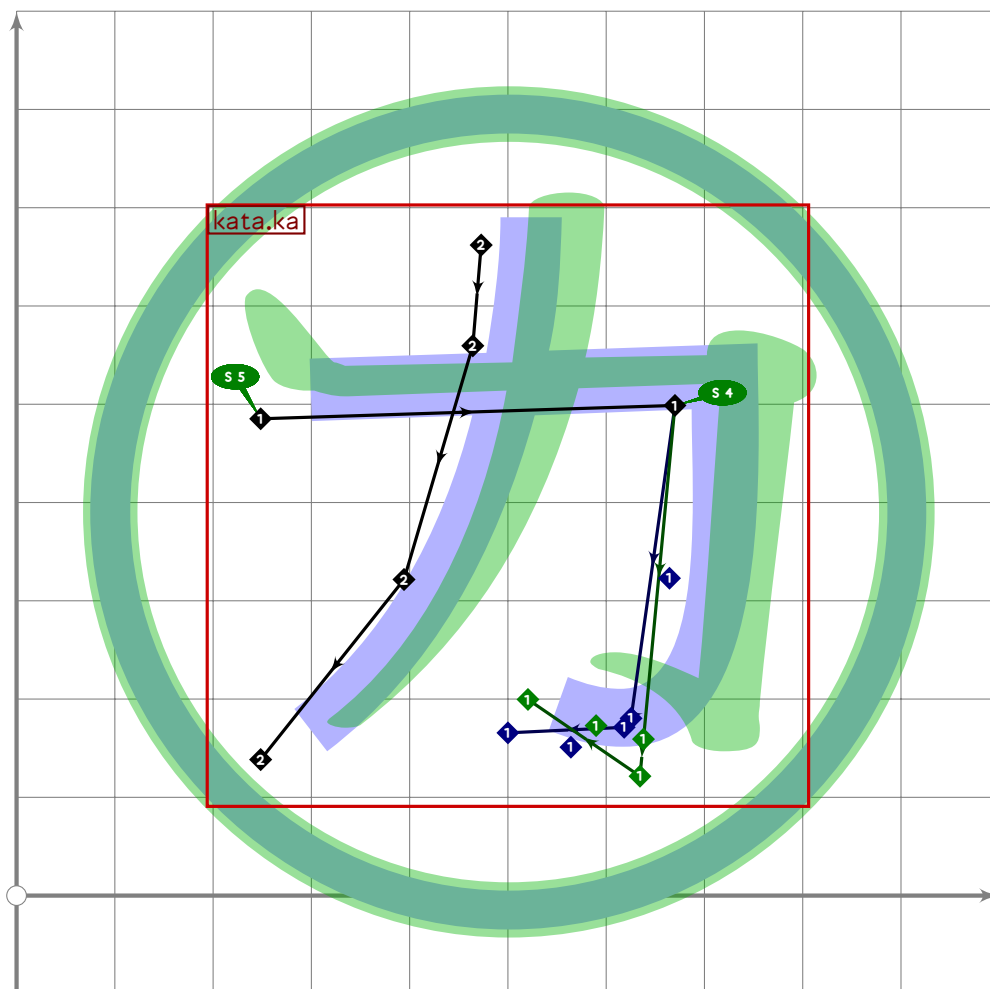
```

354 % circled "o"
355 begint Suglyph("uni32D4";212);
356   circle.single;
357   tsu_xform(tsu_xf.circled)(kata.o);
358   tsu_render_in_circle(tsu_xf.cbound);
359 endtsuglyph;
360

```

U+32D5
tsuku.uni32D5

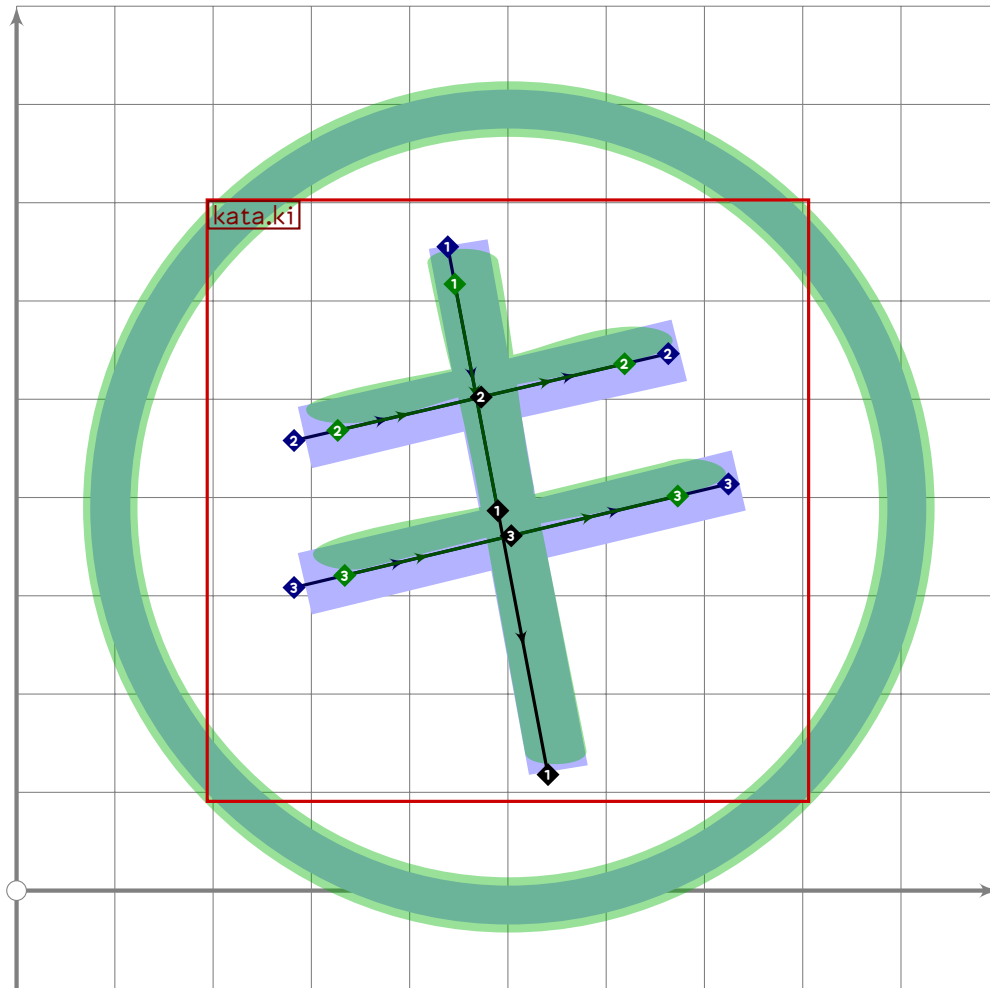
32



```

361 % circled "ka"
362 begint Suglyph("uni32D5";213);
363   circle.single;
364   tsu_xform(tsu_xf.circled)(kata.ka);
365   tsu_render_in_circle(tsu_xf.cbound);
366 endtsuglyph;
367

```



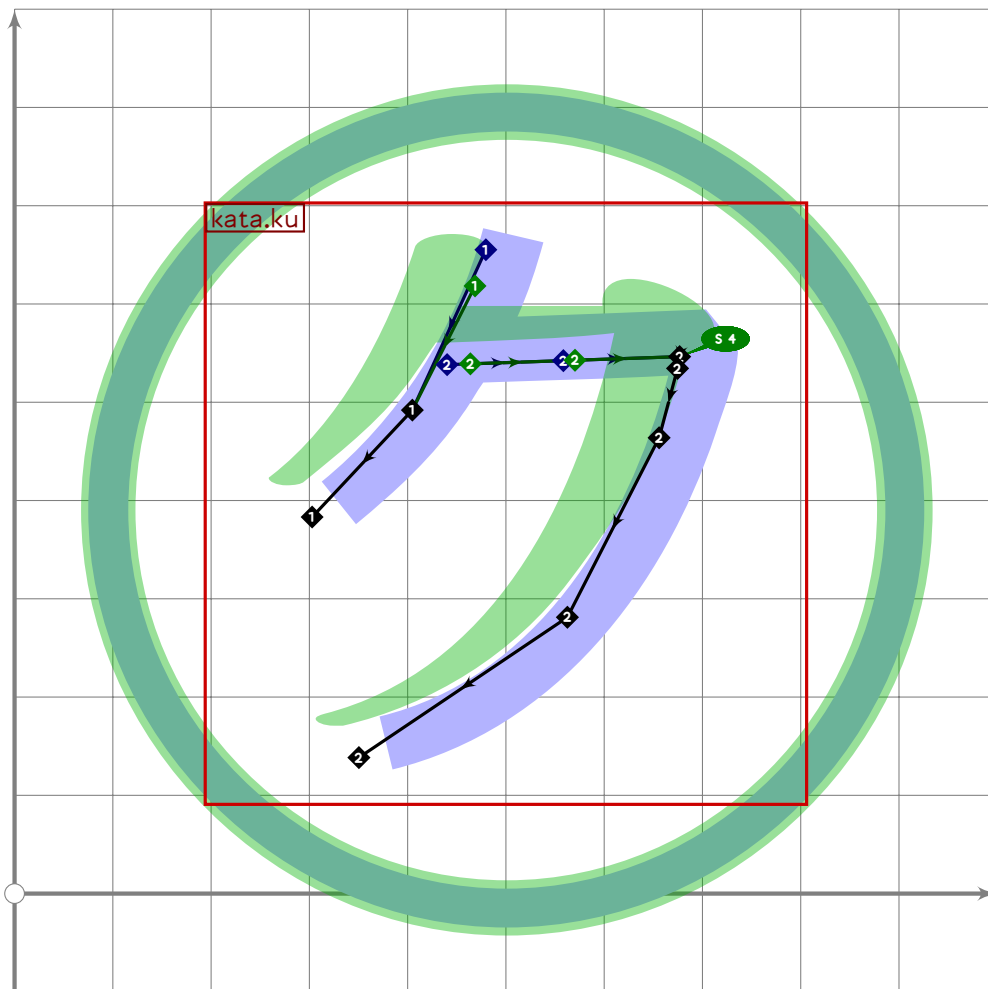
```

368 % circled "ki"
369 begint Suglyph("uni32D6";214);
370   circle.single;
371   tsu_xform(tsu_xf.circled)(kata.ki);
372   tsu_render_in_circle(tsu_xf.cbound);
373 endtsuglyph;
374

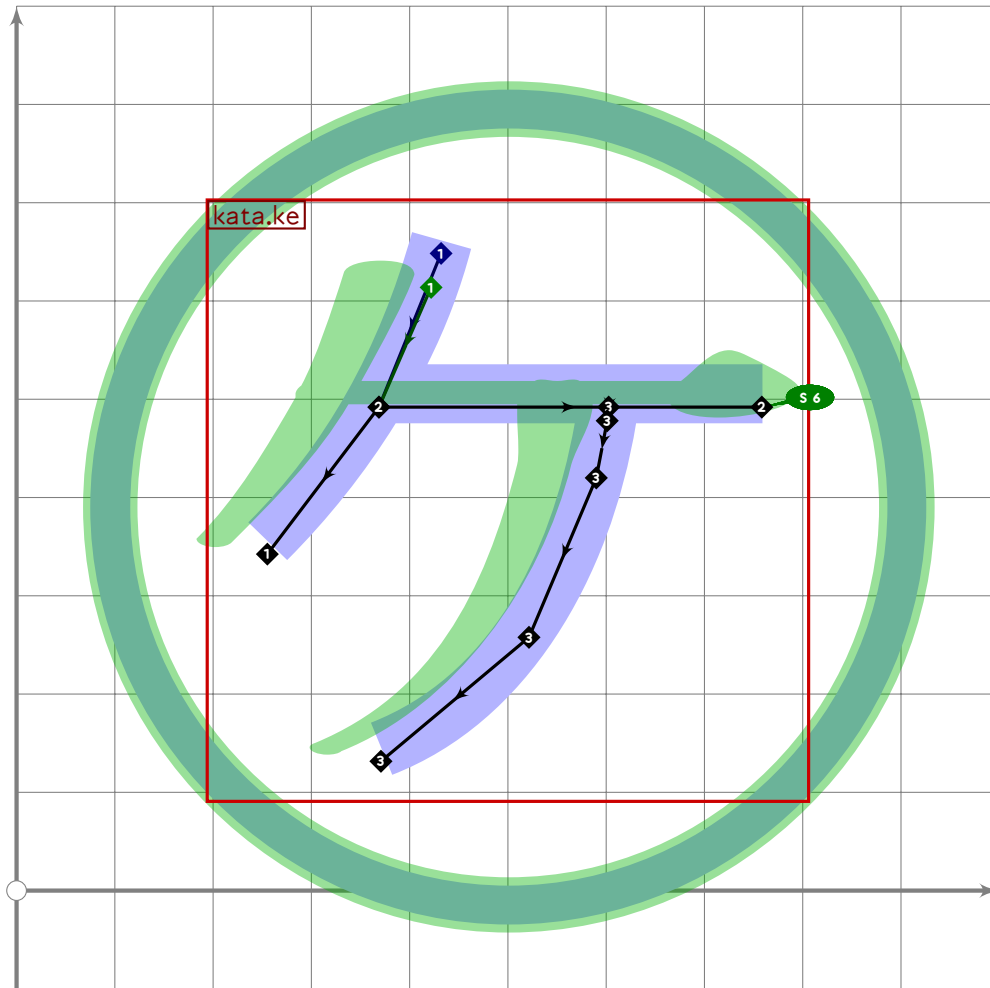
```

kata.ku

kata.ku



kata.ku



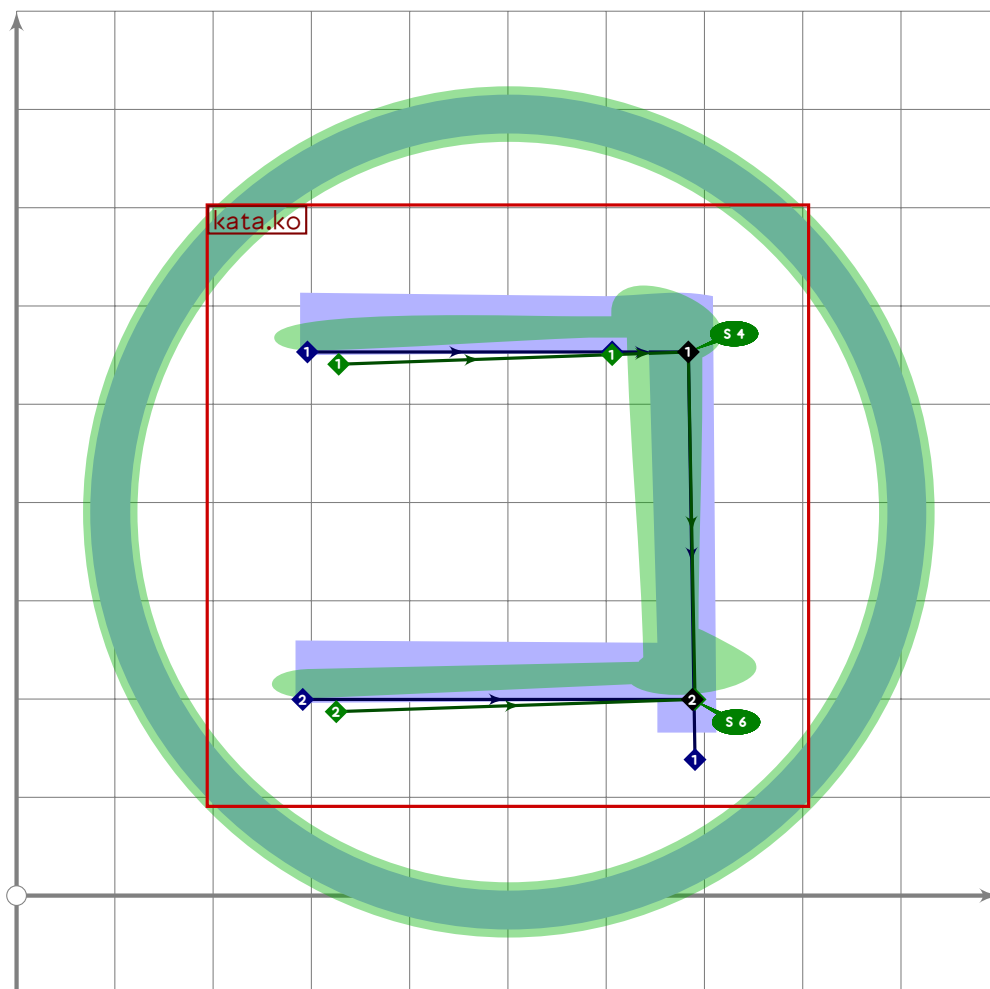
```

382 % circled "ke"
383 begint Suglyph("uni32D8";216);
384   circle.single;
385   tsu_xform(tsu_xf.circled)(kata.ke);
386   tsu_render_in_circle(tsu_xf.cbound);
387 endtsuglyph;
388

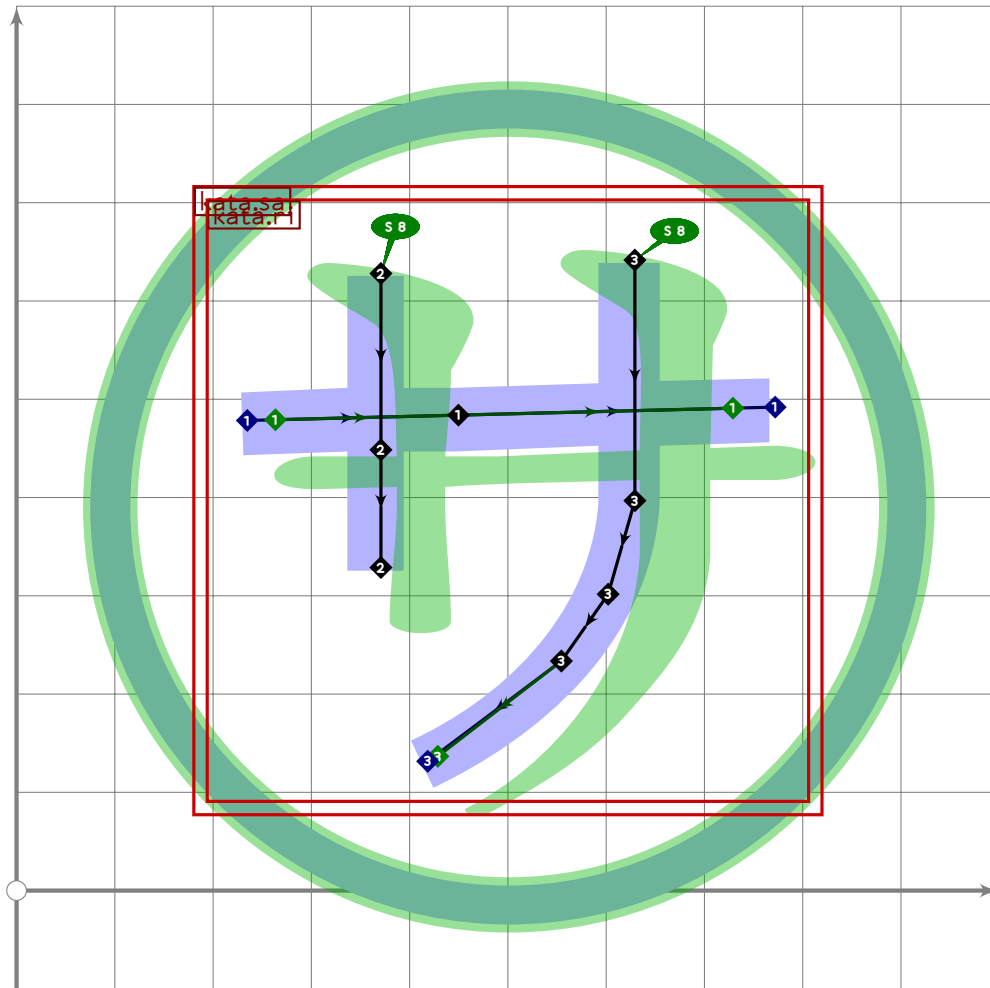
```

U+32D9
tsuku.uni32D9

32



```
389 % circled "ko"
390 begintuglyph("uni32D9";217);
391   circle.single;
392   tsu_xform(tsu_xf.circled)(kata.ko);
393   tsu_render_in_circle(tsu_xf.cbound);
394 endtuglyph;
395
```

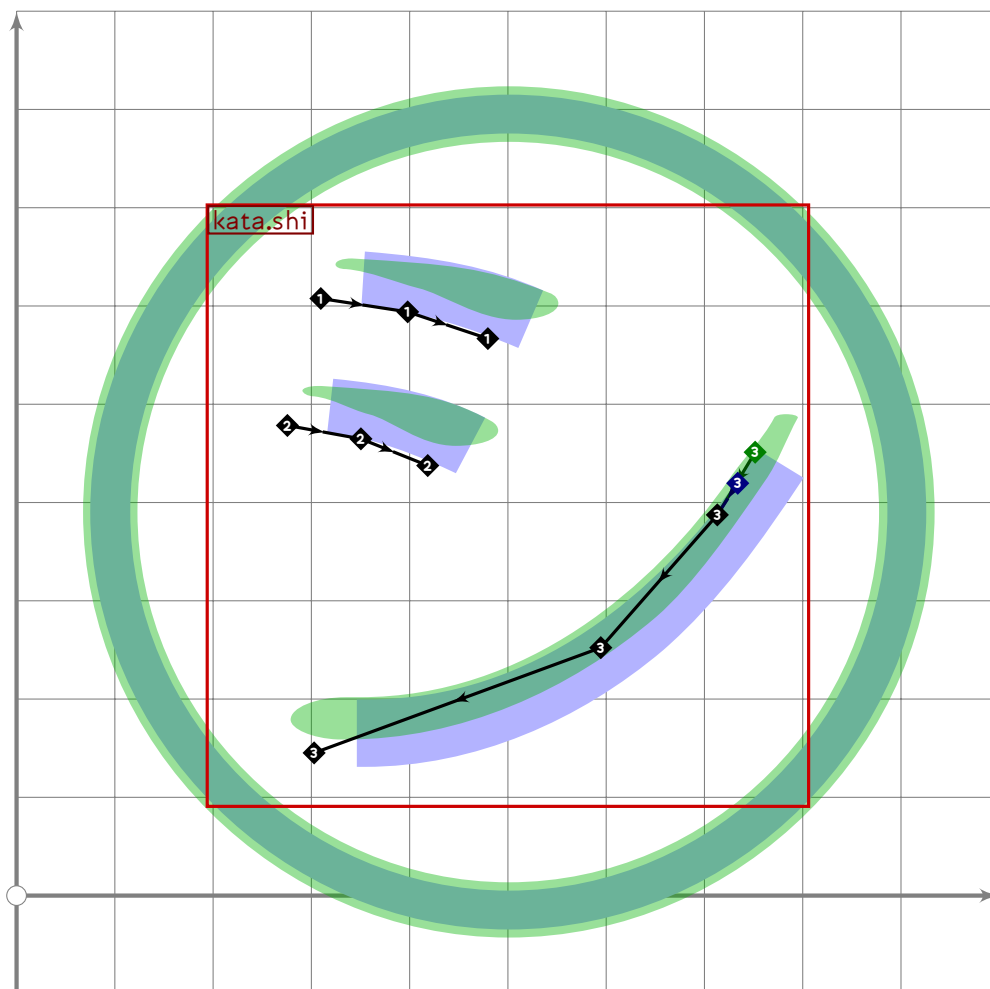
```

396 % circled "sa"
397 begint Suglyph("uni32DA";218);
398   circle.single;
399   tsu_xform(tsu_xf.circled)(kata.sa);
400   tsu_render_in_circle(tsu_xf.cbound);
401 endtsuglyph;
402

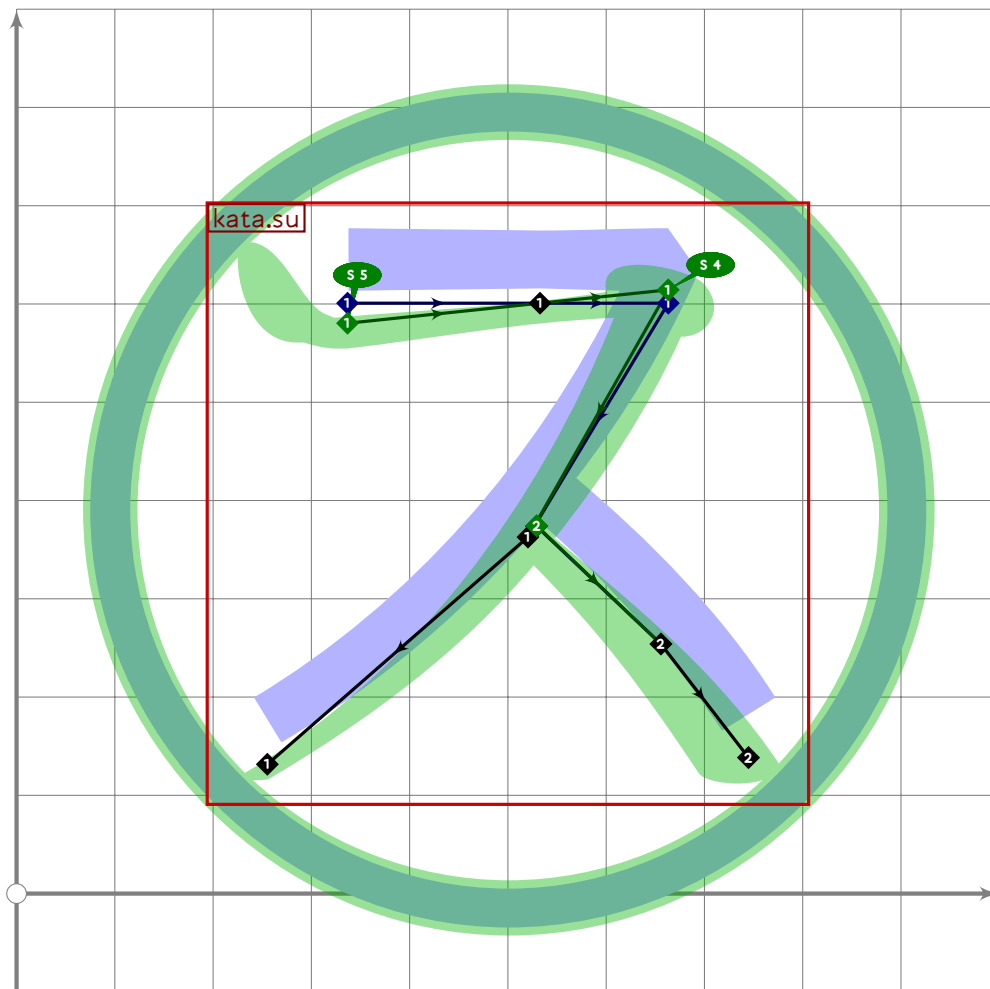
```

U+32DB
tsuku.uni32DB

32



```
403 % circled "shi"  
404 begintsuglyph("uni32DB";219);  
405   circle.single;  
406   tsu_xform(tsu_xf.circled)(kata.shi);  
407   tsu_render_in_circle(tsu_xf.cbound);  
408 endtsuglyph;  
409
```



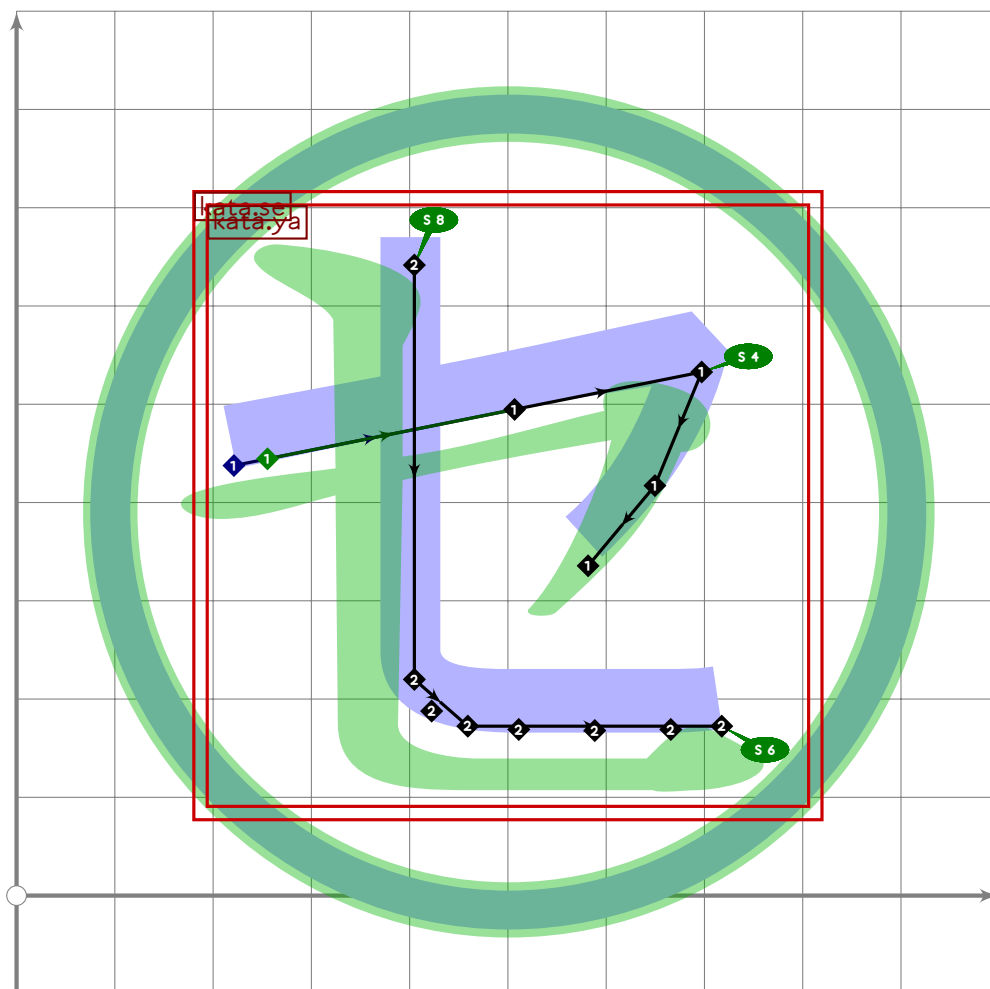
```

410 % circled "su"
411 begintsuglyph("uni32DC";220);
412   circle.single;
413   tsu_xform(tsu_xf.circled)(kata.su);
414   tsu_render_in_circle(tsu_xf.cbound);
415 endtsuglyph;
416

```

U+32DD
tsuku.uni32DD

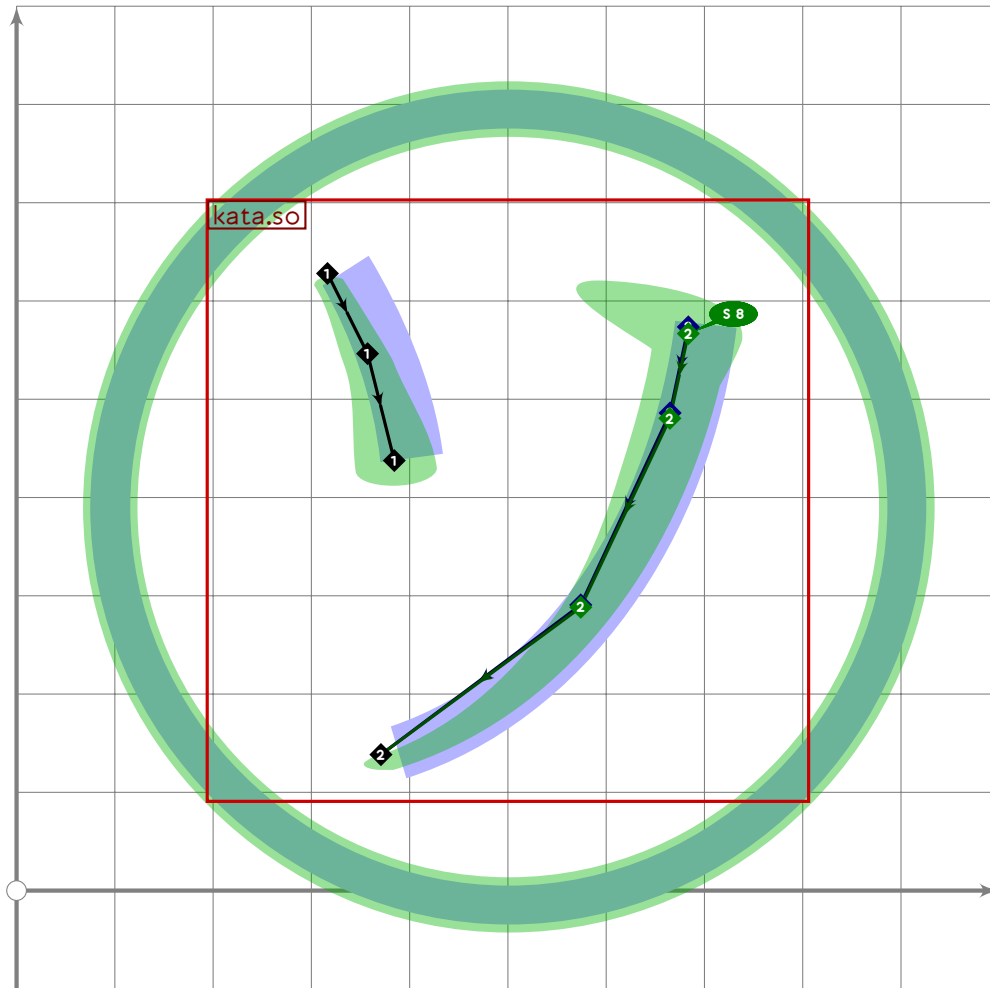
32



```

417 % circled "se"
418 begint Suglyph("uni32DD";221);
419   circle.single;
420   tsu_xform(tsu_xf.circled)(kata.se);
421   tsu_render_in_circle(tsu_xf.cbound);
422 endtsuglyph;
423

```



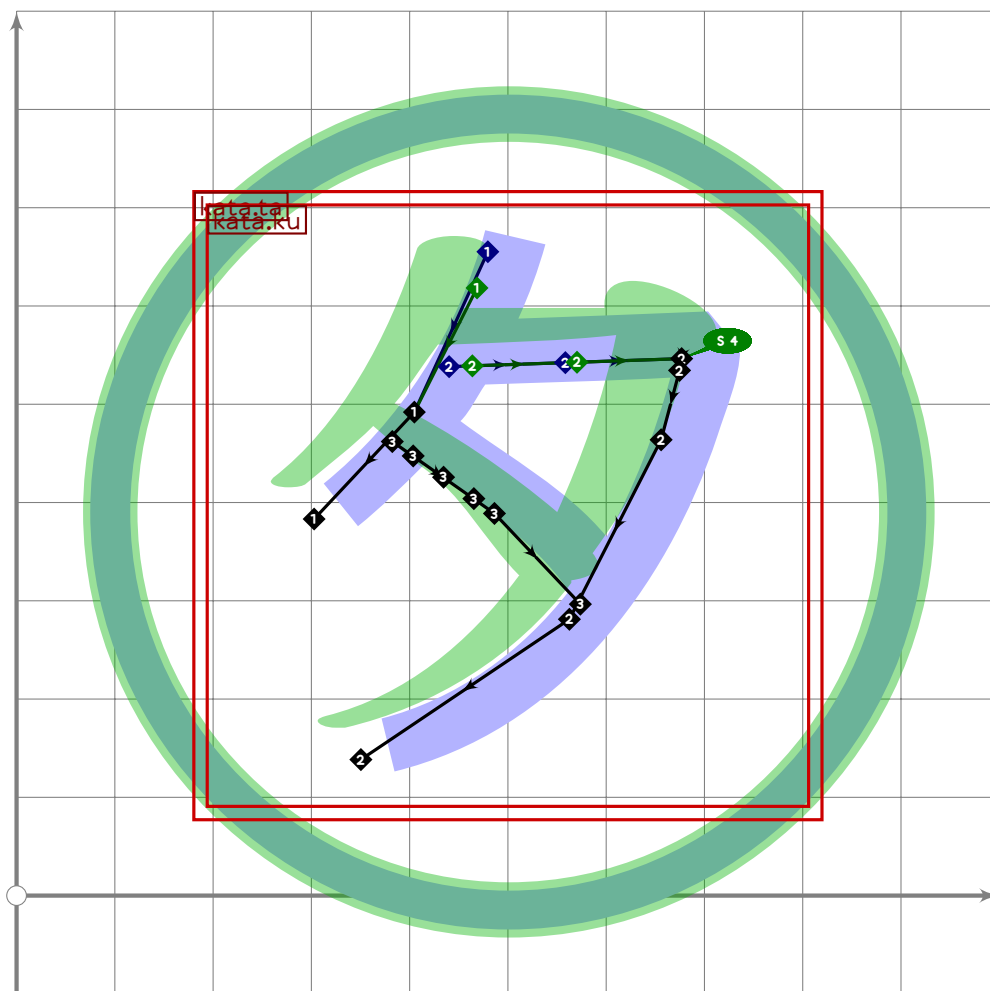
```

424 % circled "so"
425 begintuglyph("uni32DE";222);
426   circle.single;
427   tsu_xform(tsu_xf.circled)(kata.so);
428   tsu_render_in_circle(tsu_xf.cbound);
429 endtuglyph;
430

```

U+32DF
tsuku.uni32DF

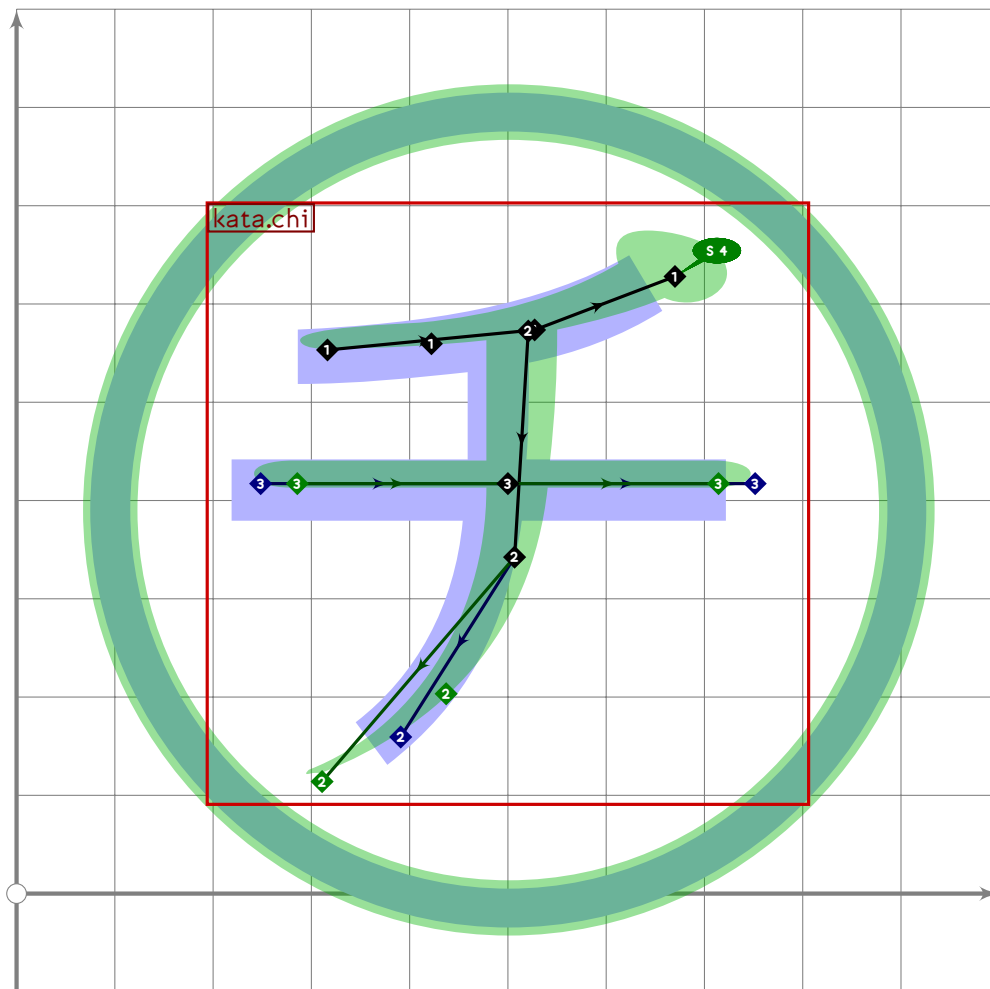
32



```

431 % circled "ta"
432 begint Suglyph("uni32DF";223);
433   circle.single;
434   tsu_xform(tsu_xf.circled)(kata.ta);
435   tsu_render_in_circle(tsu_xf.cbound);
436 endtsuglyph;
437

```



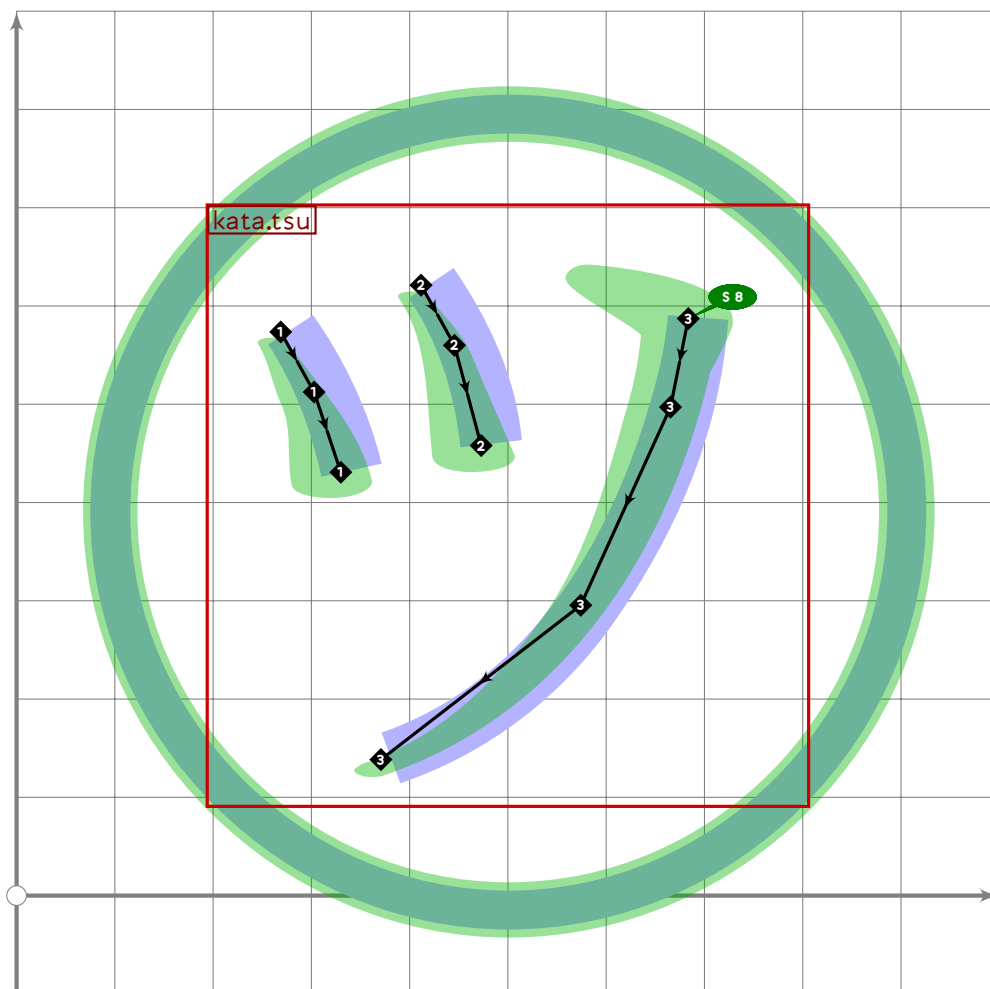
```

438 % circled "chi"
439 begint Suglyph("uni32E0";224);
440   circle.single;
441   tsu_xform(tsu_xf.circled)(kata.chi);
442   tsu_render_in_circle(tsu_xf.cbound);
443 endtsuglyph;
444

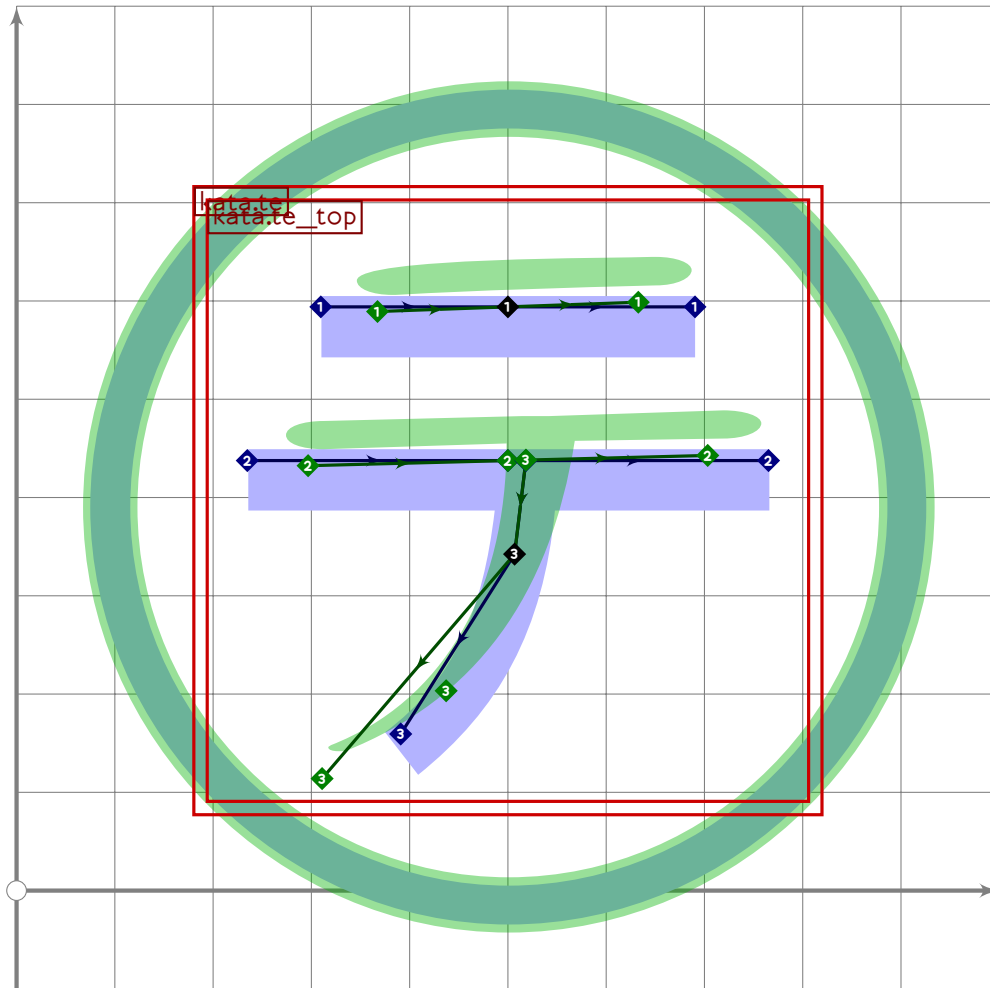
```

U+32E1
tsuku.uni32E1

32



```
445 % circled "tsu"
446 begintsuglyph("uni32E1";225);
447   circle.single;
448   tsu_xform(tsu_xf.circled)(kata.tsu);
449   tsu_render_in_circle(tsu_xf.cbound);
450 endtsuglyph;
451
```

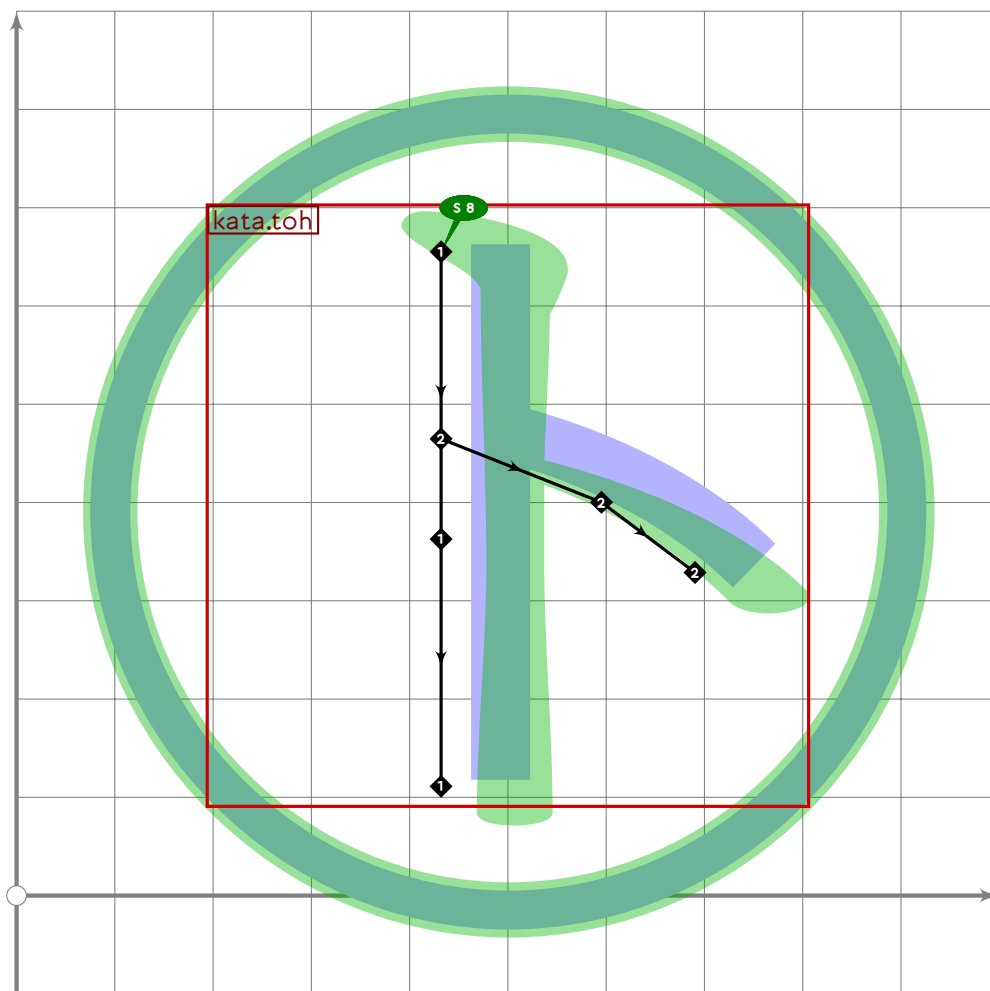
```

452 % circled "te"
453 begint Suglyph("uni32E2";226);
454   circle.single;
455   tsu_xform(tsu_xf.circled)(kata.te);
456   tsu_render_in_circle(tsu_xf.cbound);
457 endtsuglyph;
458

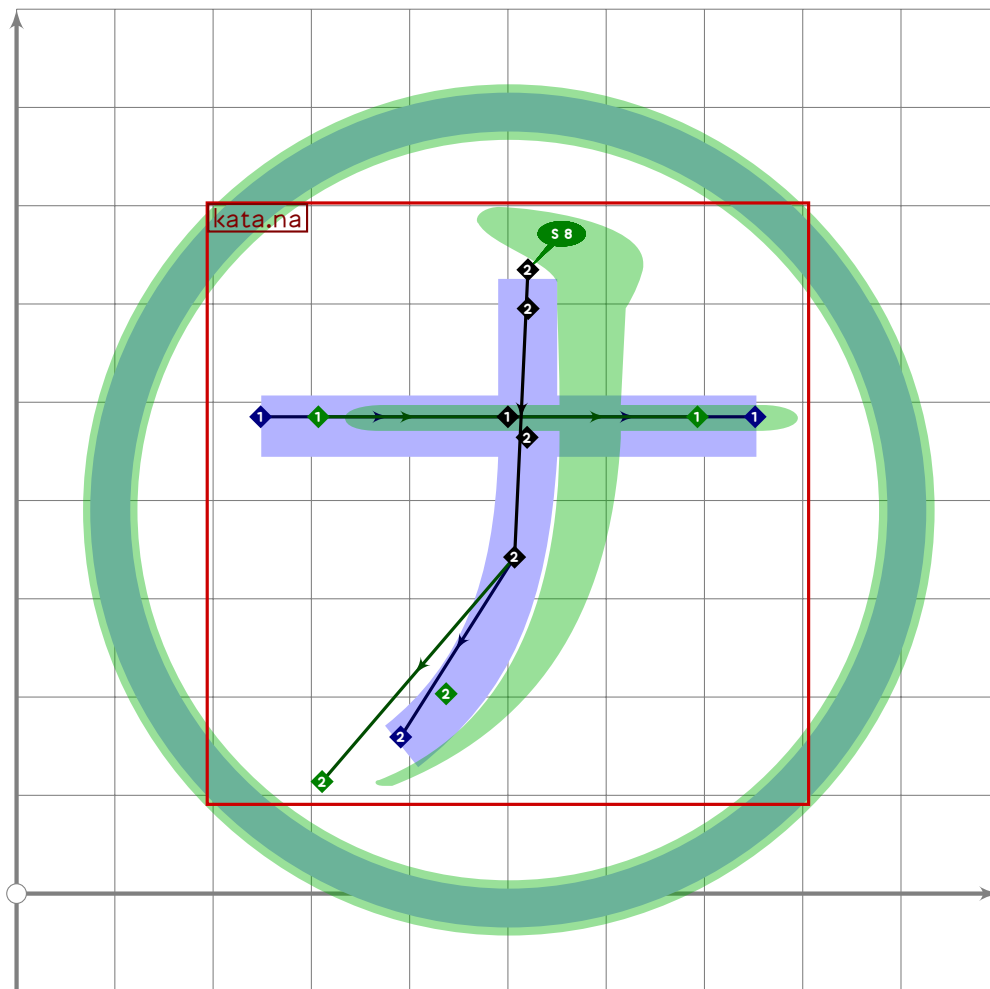
```

U+32E3
tsuku.uni32E3

32



```
459 % circled "to"
460 begint Suglyph("uni32E3",227);
461   circle.single;
462   tsu_xform(tsu_xf.circled)(kata.toh);
463   tsu_render_in_circle(tsu_xf.cbound);
464 endtsuglyph;
465
```



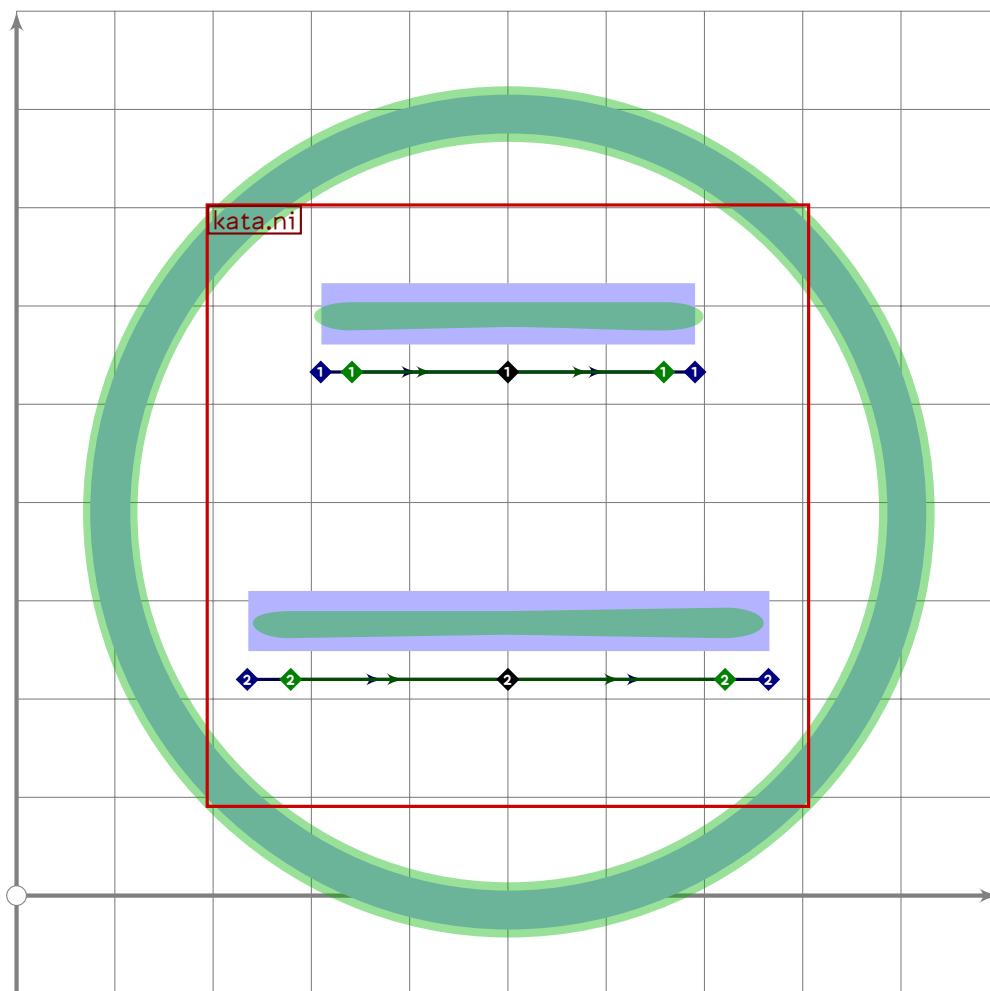
```

466 % circled "na"
467 begint Suglyph("uni32E4";228);
468   circle.single;
469   tsu_xform(tsu_xf.circled)(kata.na);
470   tsu_render_in_circle(tsu_xf.cbound);
471 endtsuglyph;
472

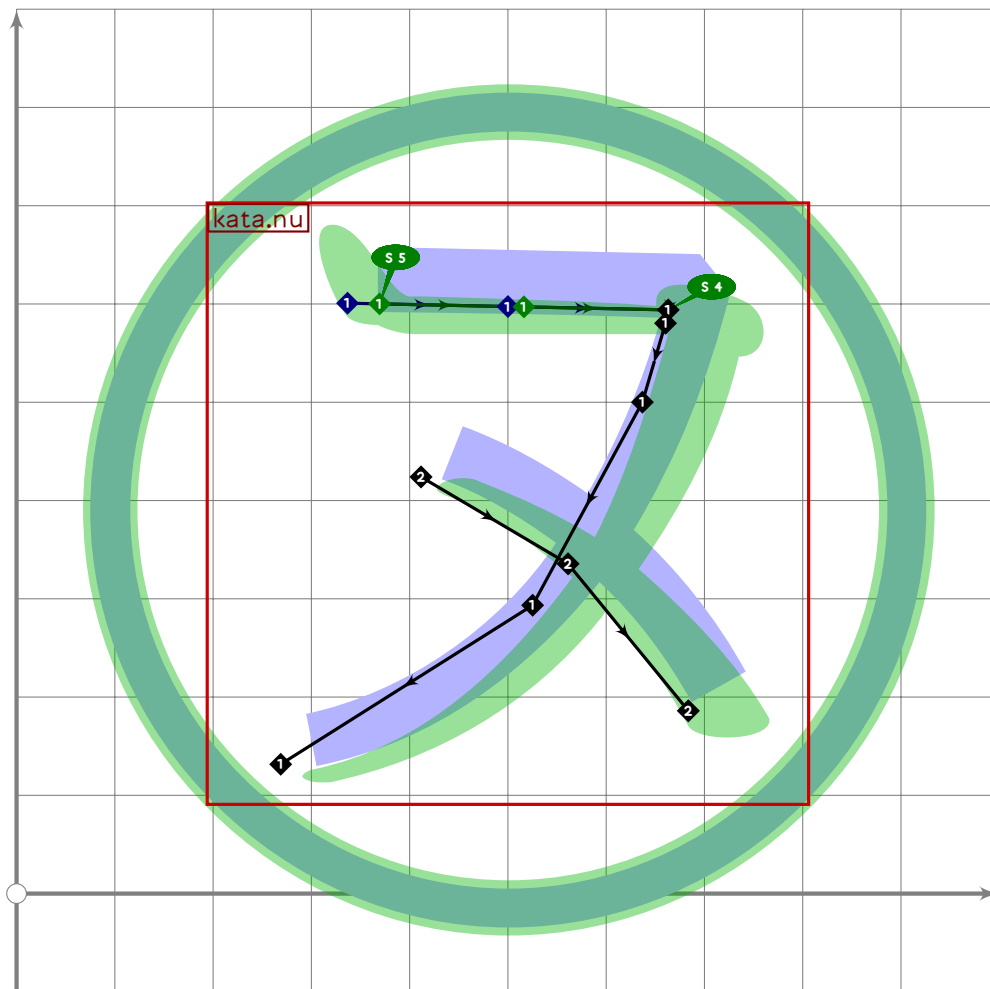
```

U+32E5
tsuku.uni32E5

32



```
473 % circled "ni"  
474 begintsuglyph("uni32E5",229);  
475   circle.single;  
476   tsu_xform(tsu_xf.circled)(kata.ni);  
477   tsu_render_in_circle(tsu_xf.cbound);  
478 endtsuglyph;  
479
```



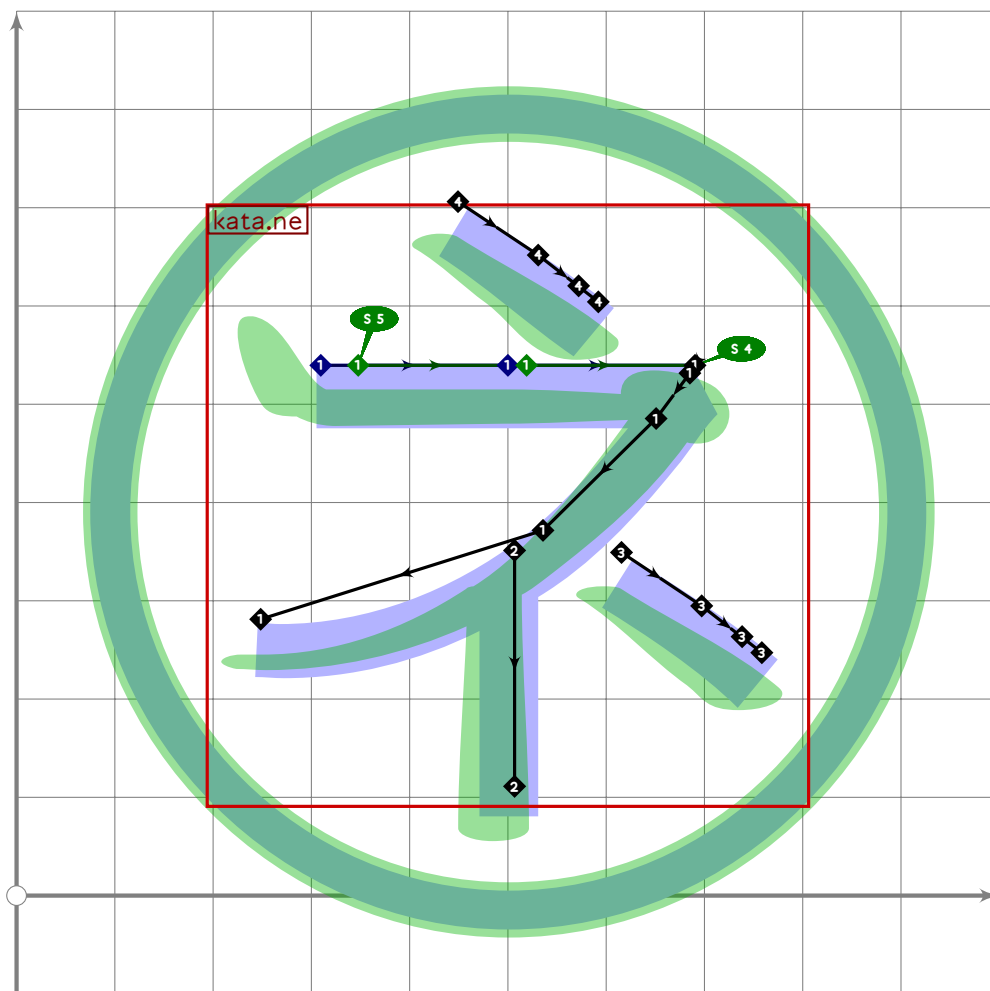
```

480 % circled "nu"
481 begintsuglyph("uni32E6",230);
482   circle.single;
483   tsu_xform(tsu_xf.circled)(kata.nu);
484   tsu_render_in_circle(tsu_xf.cbound);
485 endtsuglyph;
486

```

U+32E7
tsuku.uni32E7

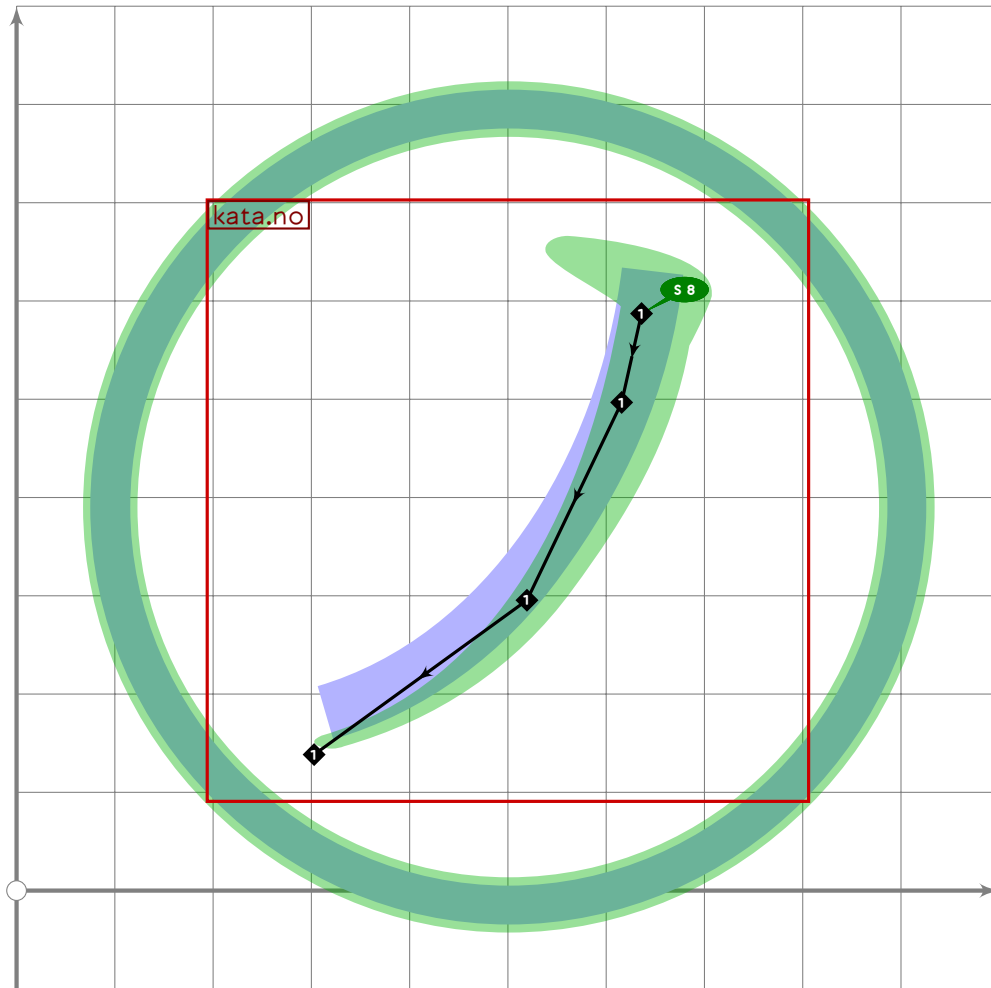
32



```

487 % circled "ne"
488 begintsuglyph("uni32E7";231);
489   circle.single;
490   tsu_xform(tsu_xf.circled)(kata.ne);
491   tsu_render_in_circle(tsu_xf.cbound);
492 endtsuglyph;
493

```



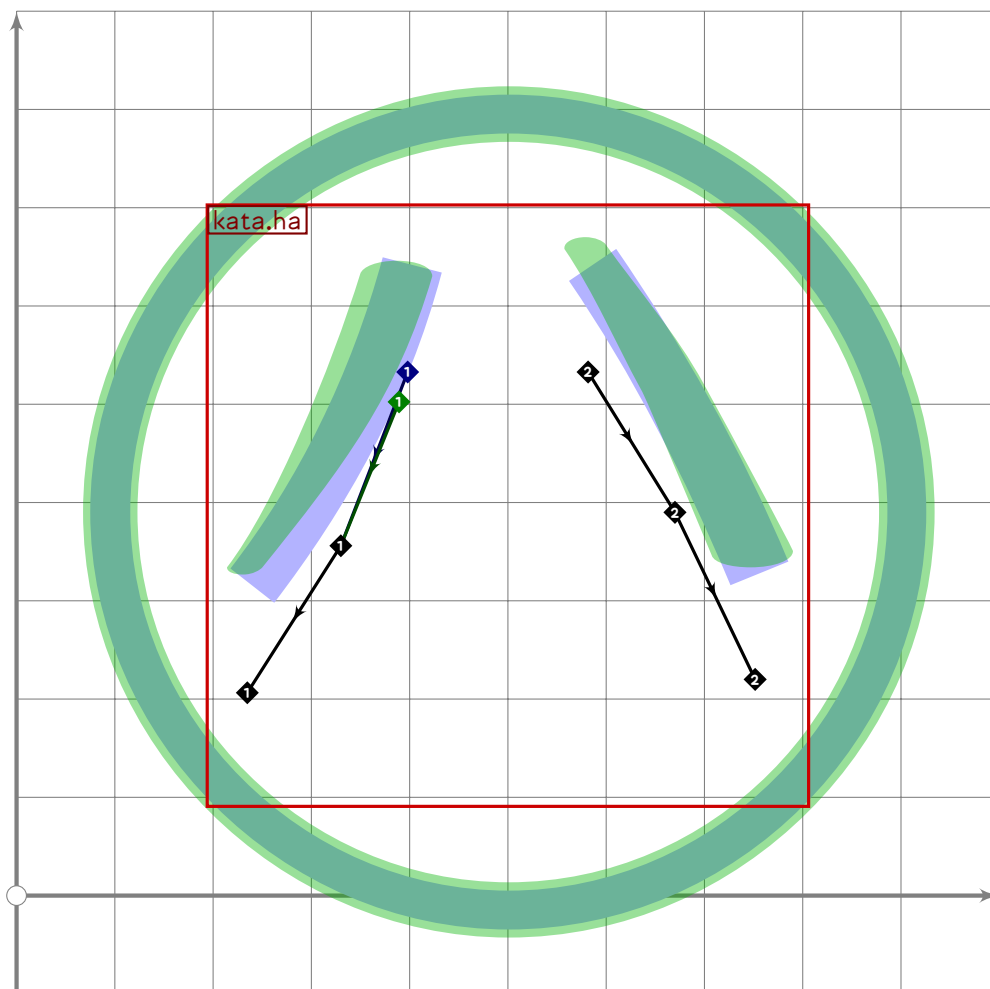
```

494 % circled "no"
495 begint Suglyph("uni32E8",232);
496   circle.single;
497   tsu_xform(tsu_xf.circled)(kata.no);
498   tsu_render_in_circle(tsu_xf.cbound);
499 endtsuglyph;
500

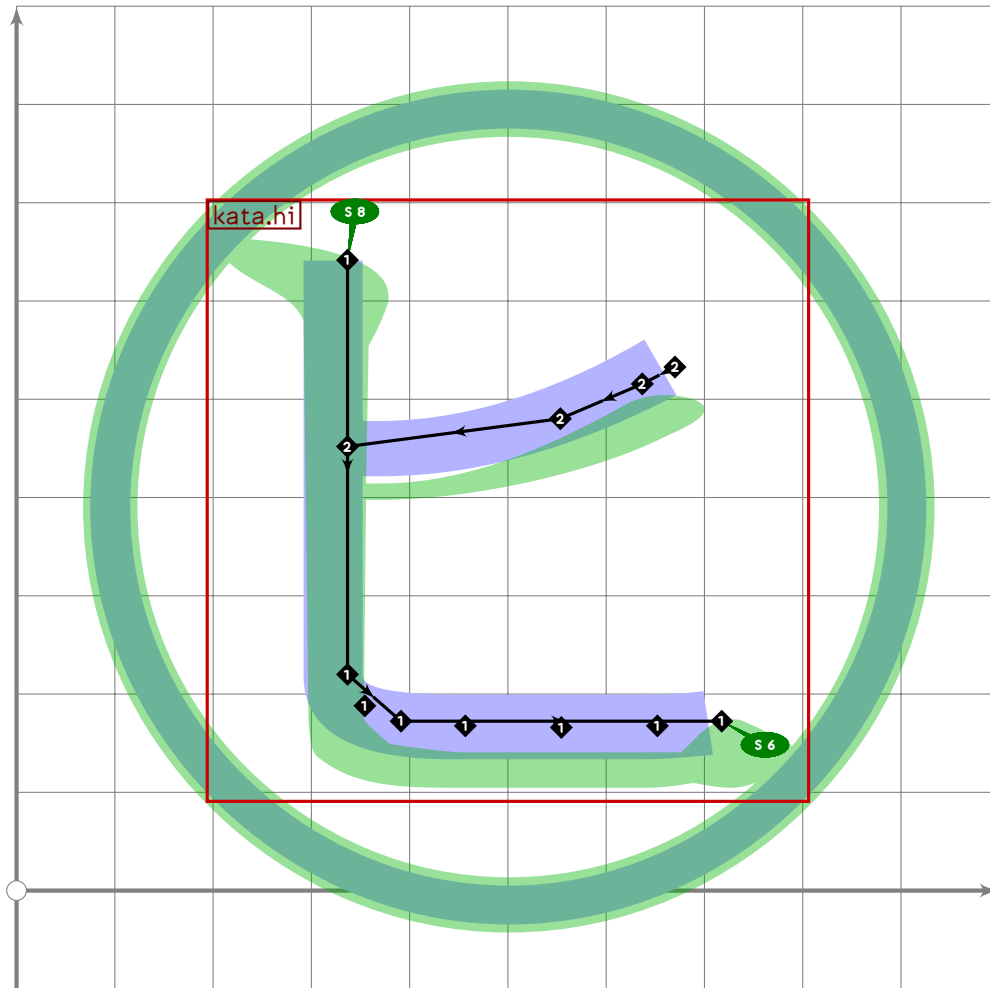
```

U+32E9
tsuku.uni32E9

32



```
501 % circled "ha"  
502 begintsuglyph("uni32E9";233);  
503   circle.single;  
504   tsu_xform(tsu_xf.circled)(kata.ha);  
505   tsu_render_in_circle(tsu_xf.cbound);  
506 endtsuglyph;  
507
```

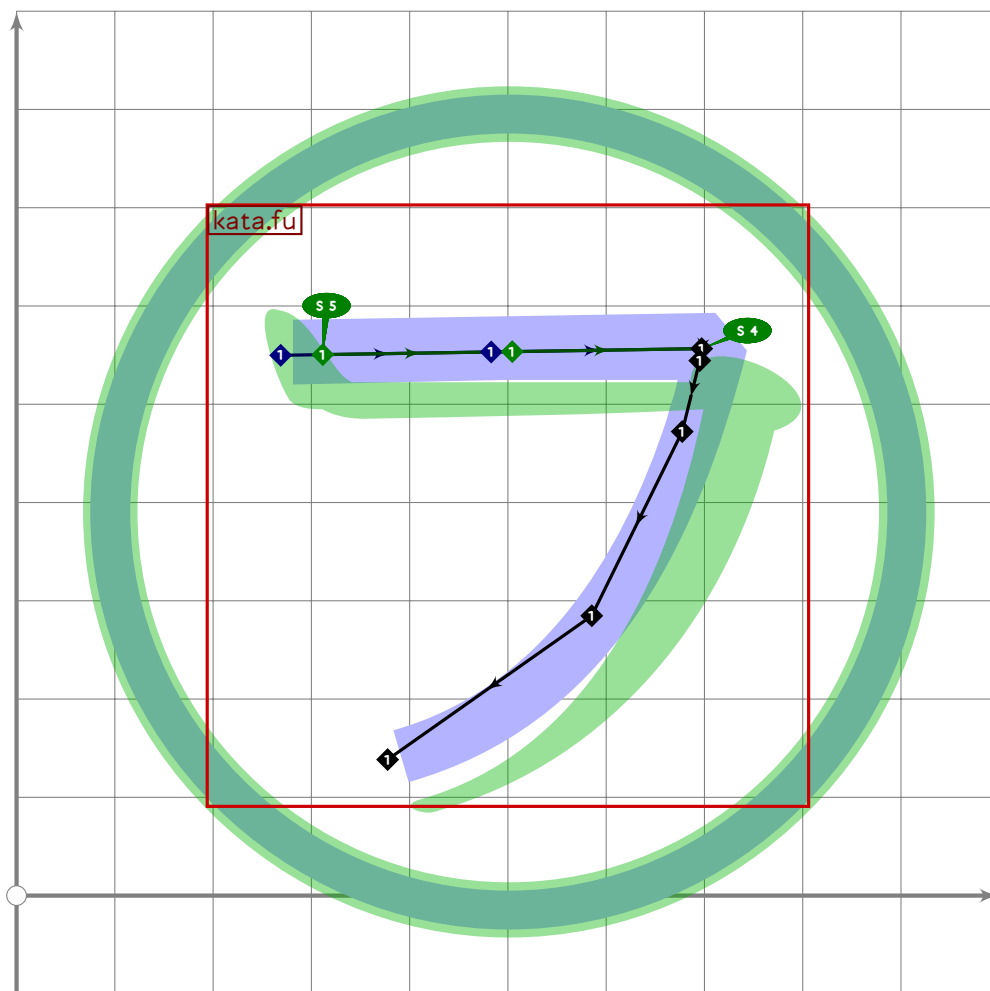
```

508 % circled "hi"
509 begintuglyph("uni32EA";234);
510   circle.single;
511   tsu_xform(tsu_xf.circled)(kata.hi);
512   tsu_render_in_circle(tsu_xf.cbound);
513 endtuglyph;
514

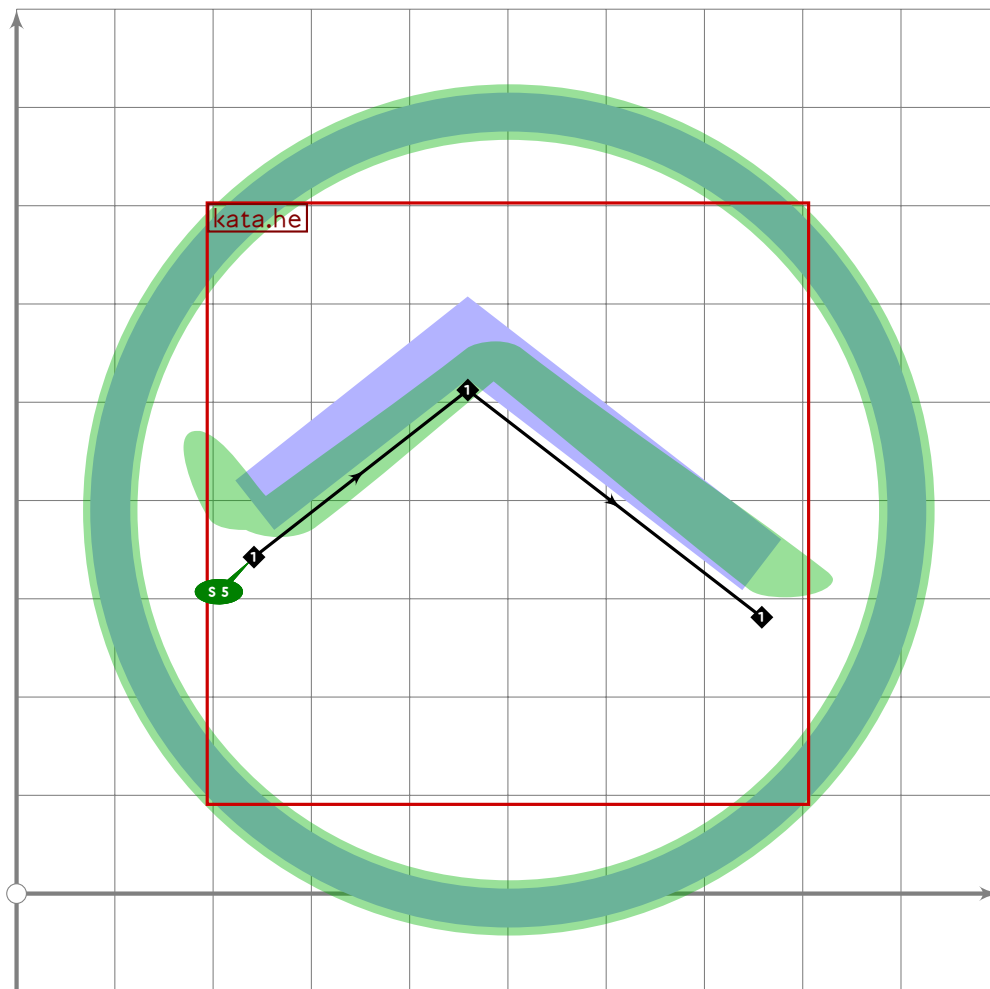
```

U+32EB
tsuku.uni32EB

32



```
515 % circled "fu"
516 begint Suglyph("uni32EB",235);
517   circle.single;
518   tsu_xform(tsu_xf.circled)(kata.fu);
519   tsu_render_in_circle(tsu_xf.cbound);
520 endtsuglyph;
521
```



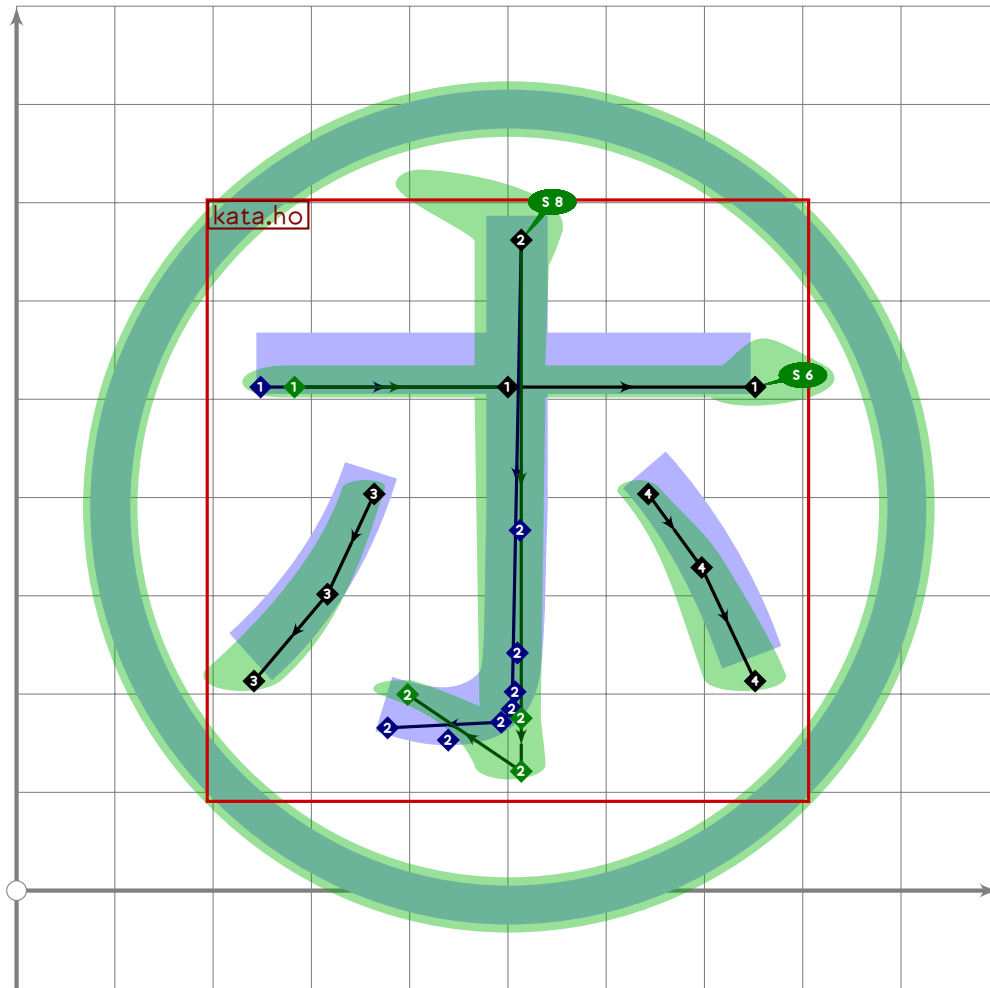
```

522 % circled "he"
523 begint Suglyph("uni32EC";236);
524   circle.single;
525   tsu_xform(tsu_xf.circled)(kata.he);
526   tsu_render_in_circle(tsu_xf.cbound);
527 endtsuglyph;
528

```

U+32ED
tsuku.uni32ED

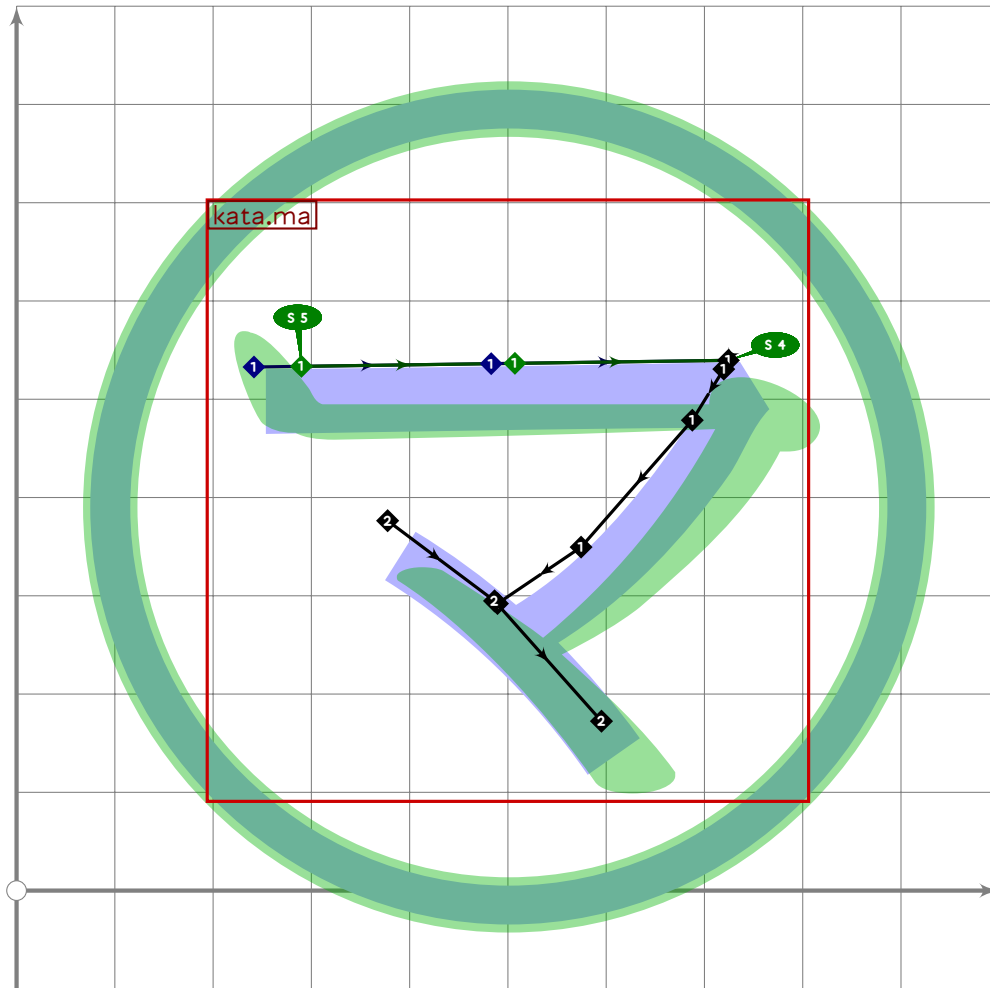
32



```

529 % circled "ho"
530 begint Suglyph("uni32ED";237);
531   circle.single;
532   tsu_xform(tsu_xf.circled)(kata.ho);
533   tsu_render_in_circle(tsu_xf.cbound);
534 endtsuglyph;
535

```



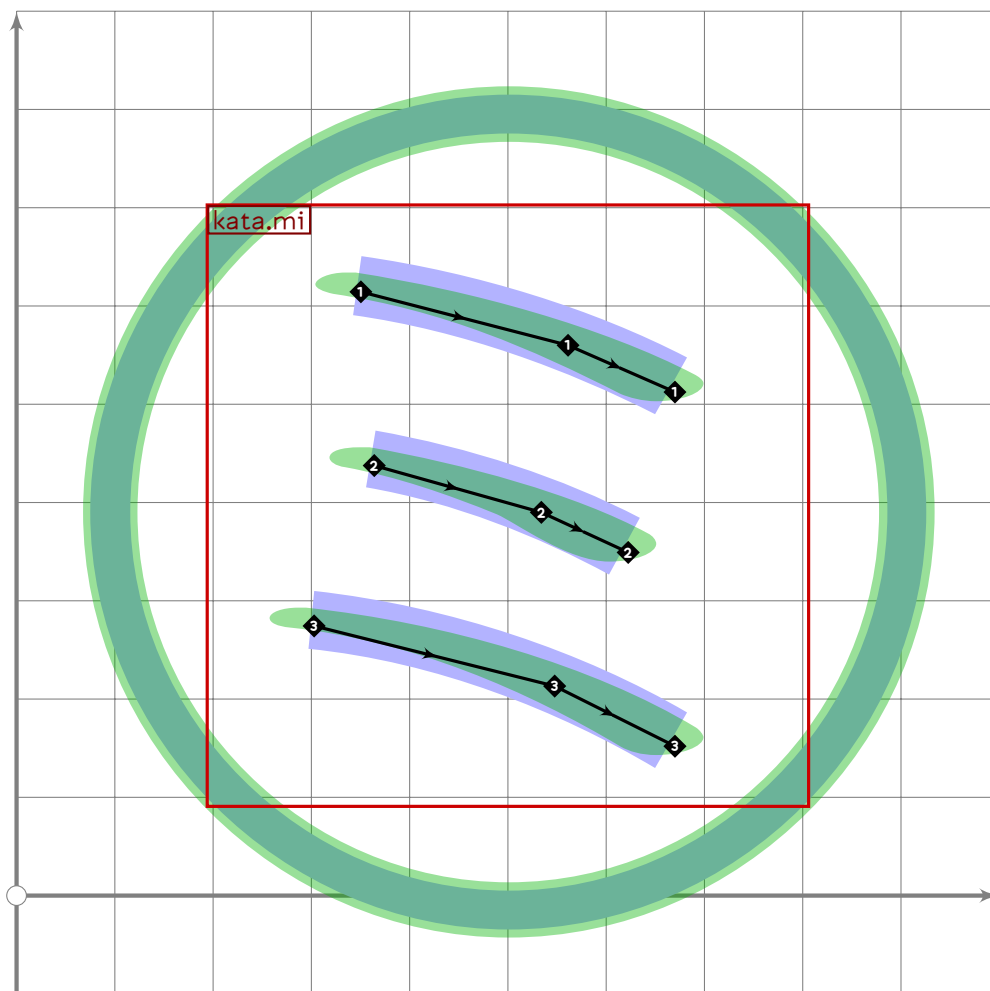
```

536 % circled "ma"
537 begint Suglyph("uni32EE";238);
538   circle.single;
539   tsu_xform(tsu_xf.circled)(kata.ma);
540   tsu_render_in_circle(tsu_xf.cbound);
541 endtsuglyph;
542

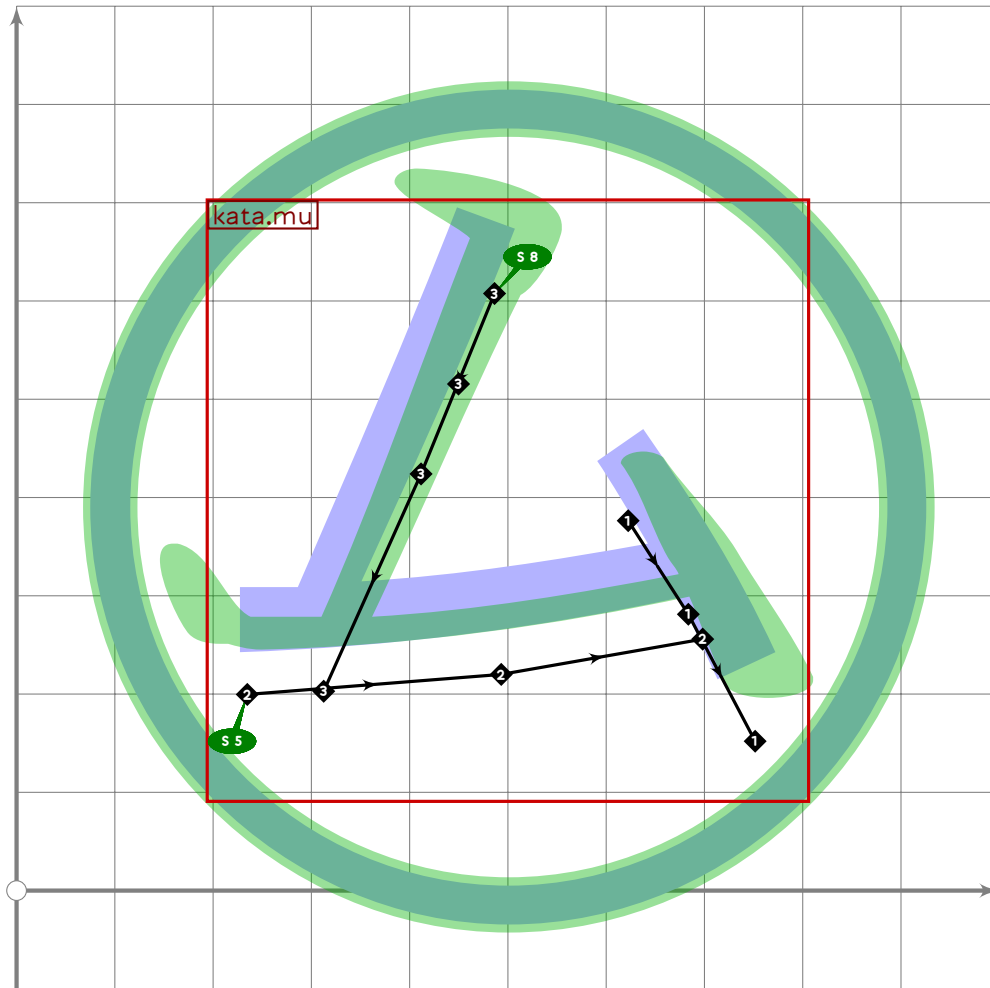
```

U+32EF
tsuku.uni32EF

32



```
543 % circled "mi"
544 begint Suglyph("uni32EF";239);
545   circle.single;
546   tsu_xform(tsu_xf.circled)(kata.mi);
547   tsu_render_in_circle(tsu_xf.cbound);
548 endtsuglyph;
549
```



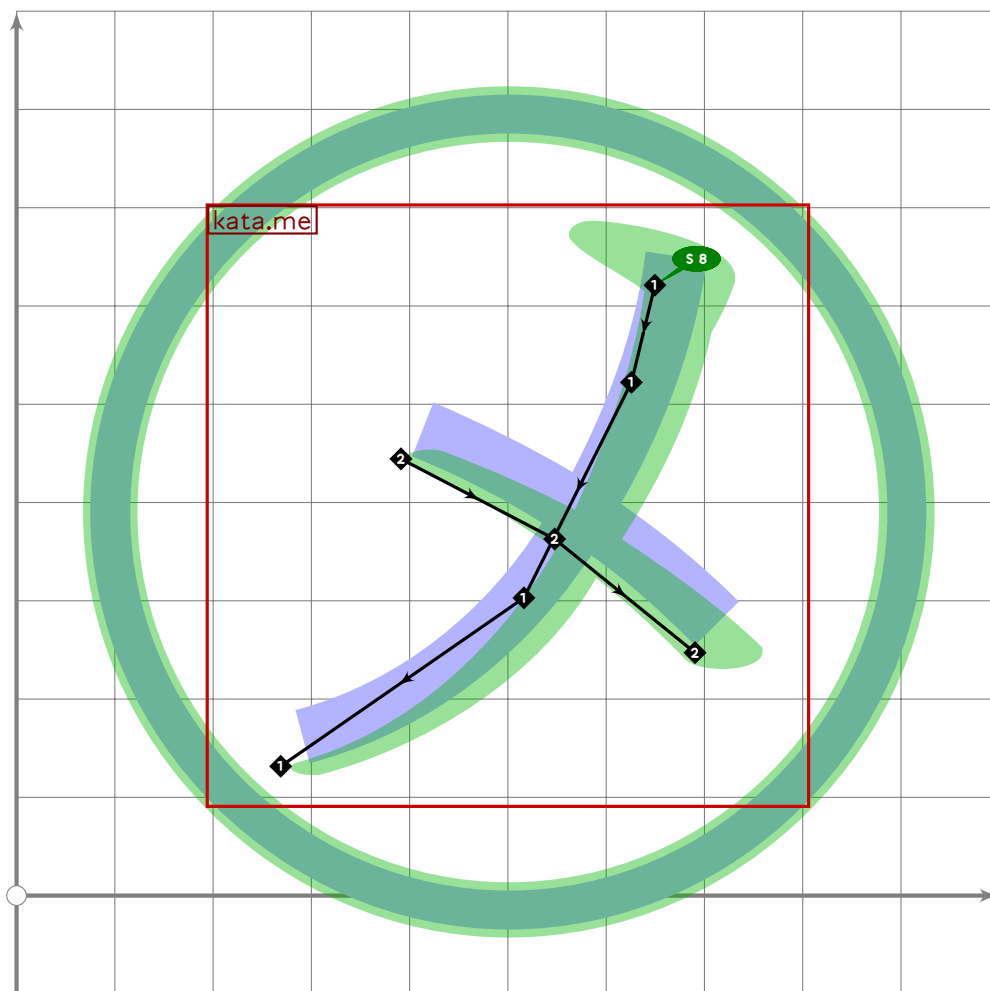
```

550 % circled "mu"
551 begint Suglyph("uni32F0",240);
552   circle.single;
553   tsu_xform(tsu_xf.circled)(kata.mu);
554   tsu_render_in_circle(tsu_xf.cbound);
555 endtsuglyph;
556

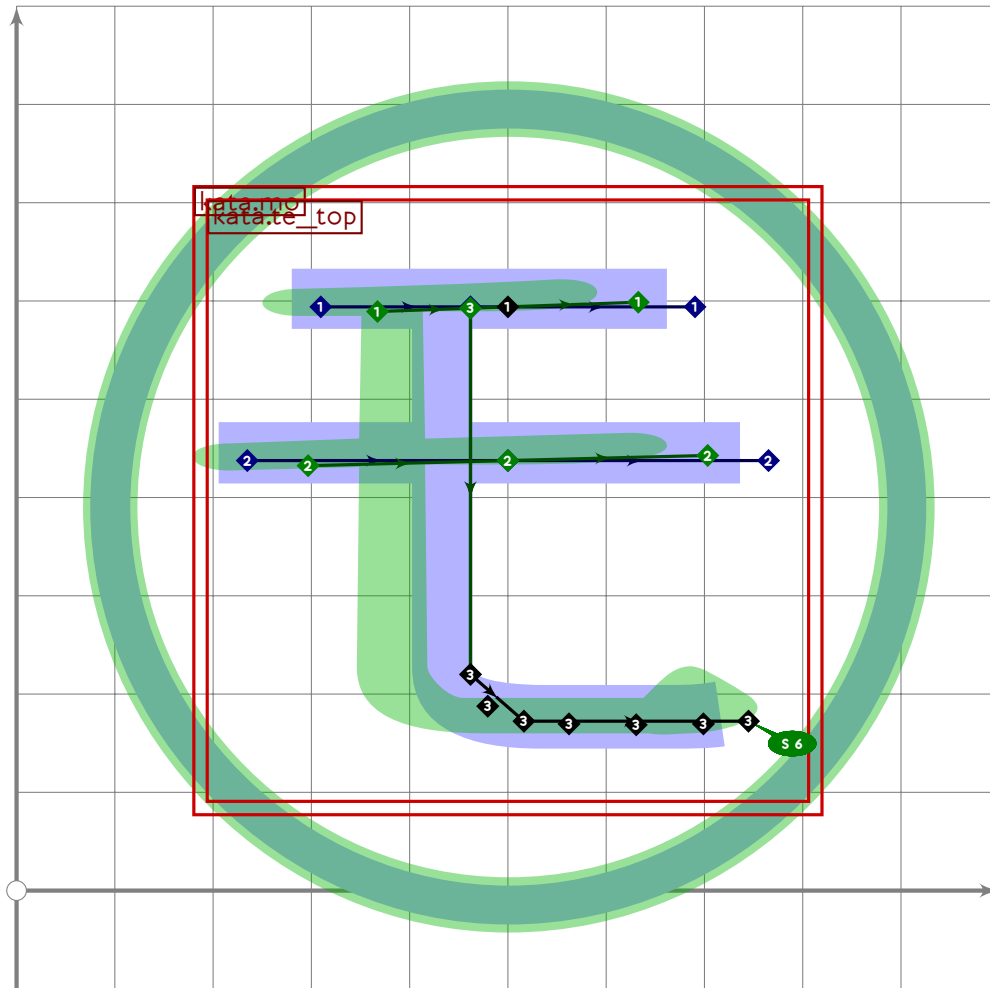
```

U+32F1
tsuku.uni32F1

32



```
557 % circled "me"
558 begint Suglyph("uni32F1";241);
559   circle.single;
560   tsu_xform(tsu_xf.circled)(kata.me);
561   tsu_render_in_circle(tsu_xf.cbound);
562 endtsuglyph;
563
```

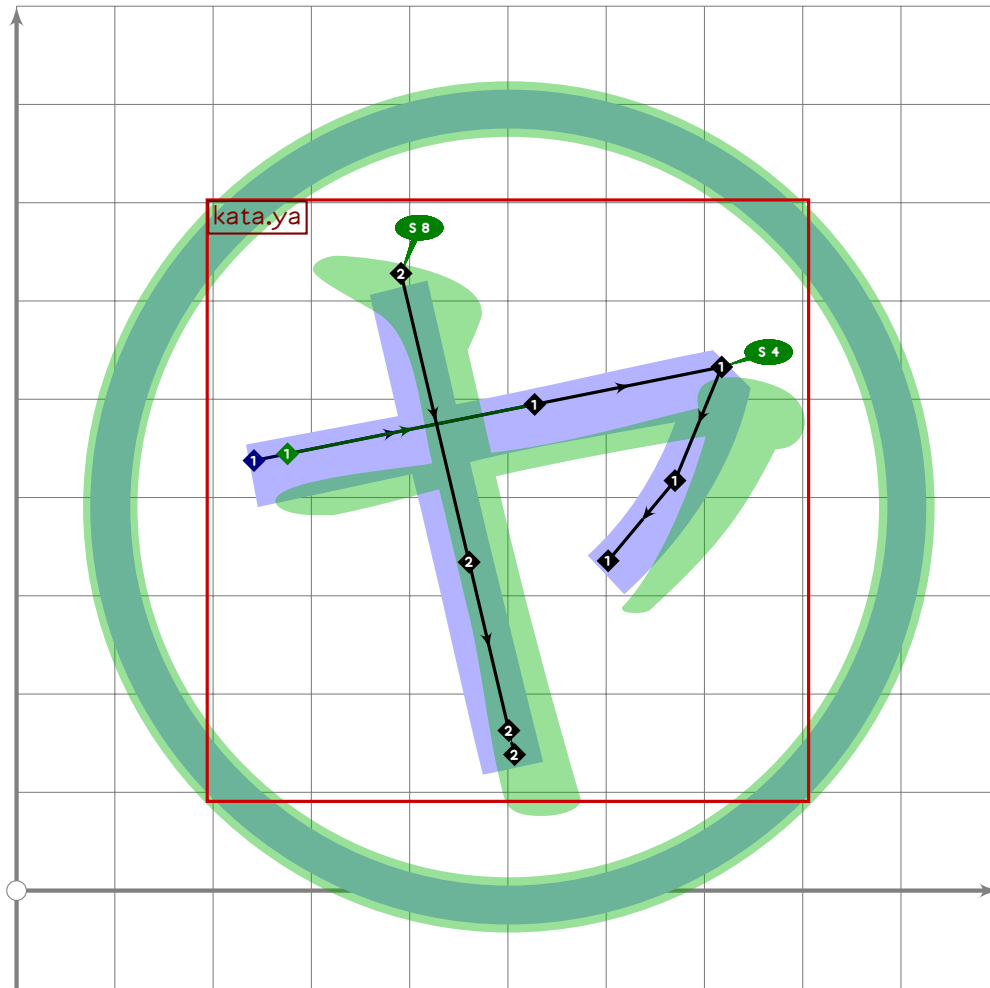
```

564 % circled "mo"
565 begint Suglyph("uni32F2";242);
566   circle.single;
567   tsu_xform(tsu_xf.circled)(kata.mo);
568   tsu_render_in_circle(tsu_xf.cbound);
569 endtsuglyph;
570

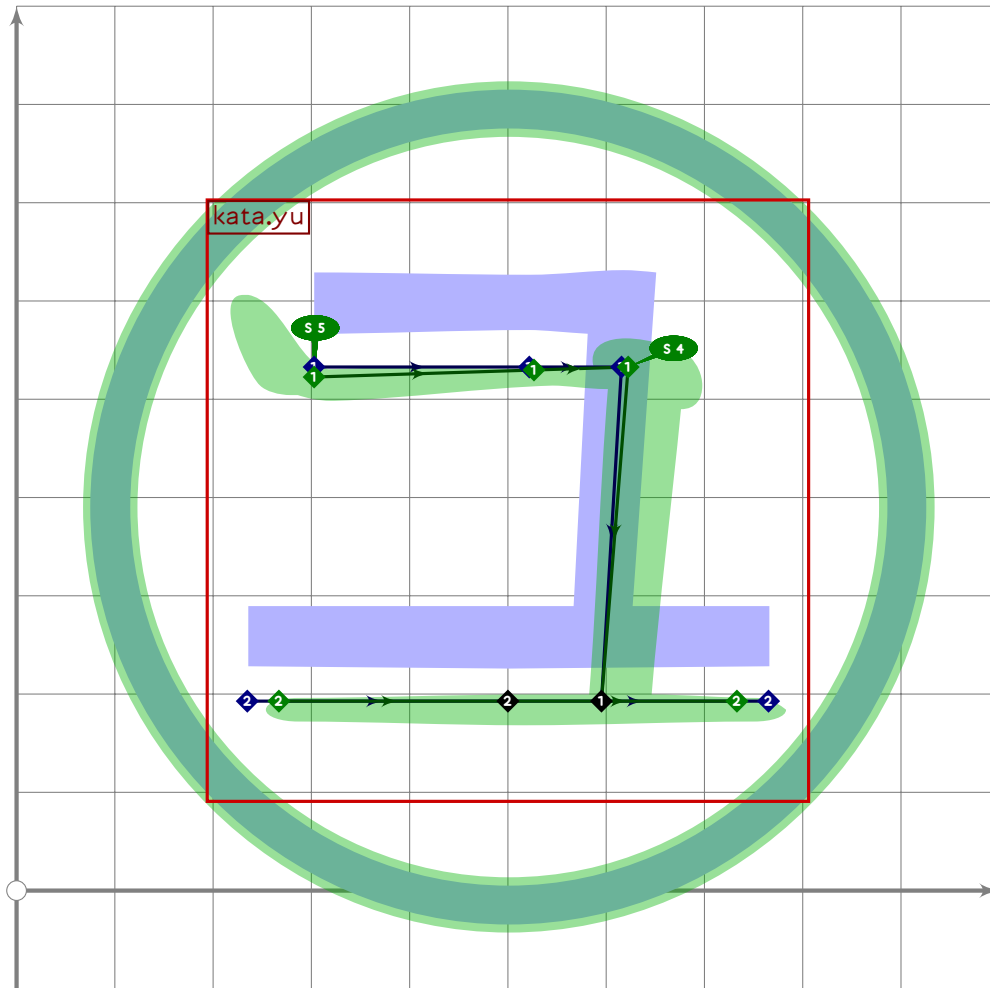
```

U+32F3
tsuku.uni32F3

32



```
571 % circled "ya"  
572 begint Suglyph("uni32F3",243);  
573   circle.single;  
574   tsu_xform(tsu_xf.circled)(kata.ya);  
575   tsu_render_in_circle(tsu_xf.cbound);  
576 endtsuglyph;  
577
```



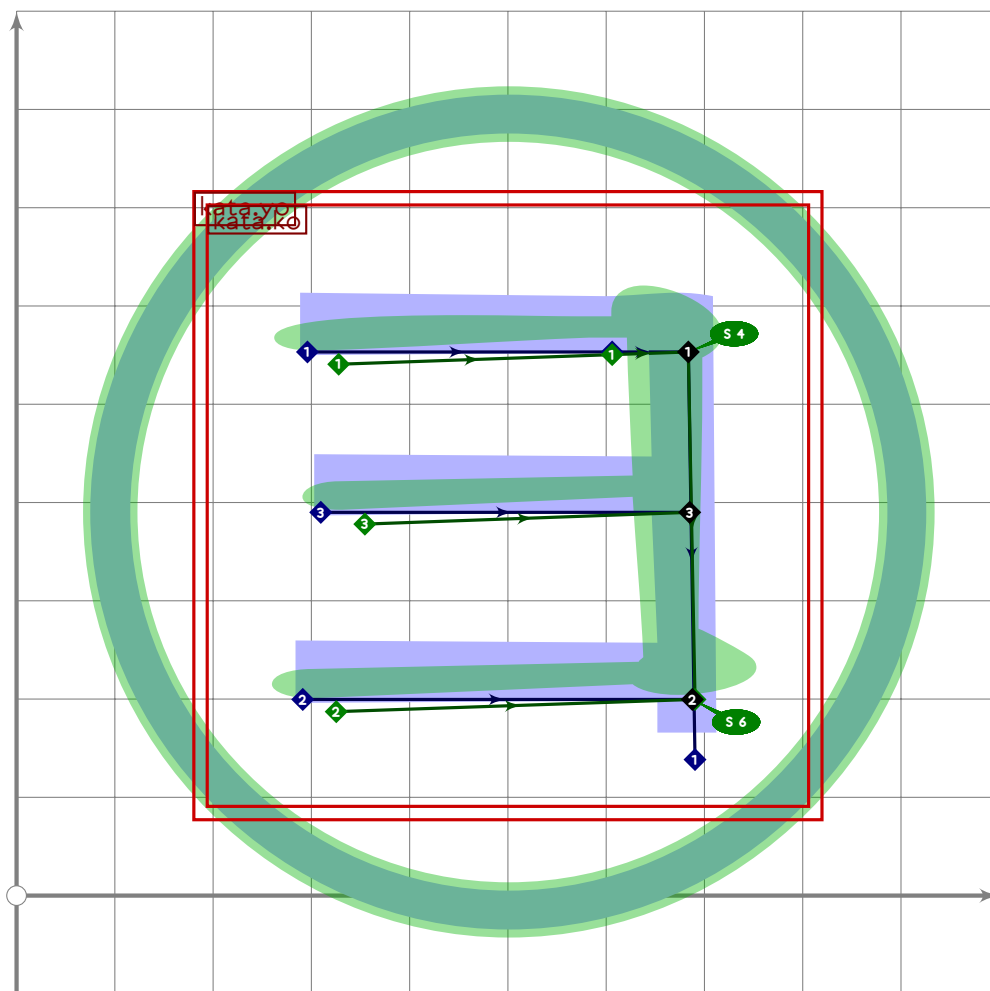
```

578 % circled "yu"
579 begint Suglyph("uni32F4";244);
580   circle.single;
581   tsu_xform(tsu_xf.circled)(kata.yu);
582   tsu_render_in_circle(tsu_xf.cbound);
583 endtsuglyph;
584

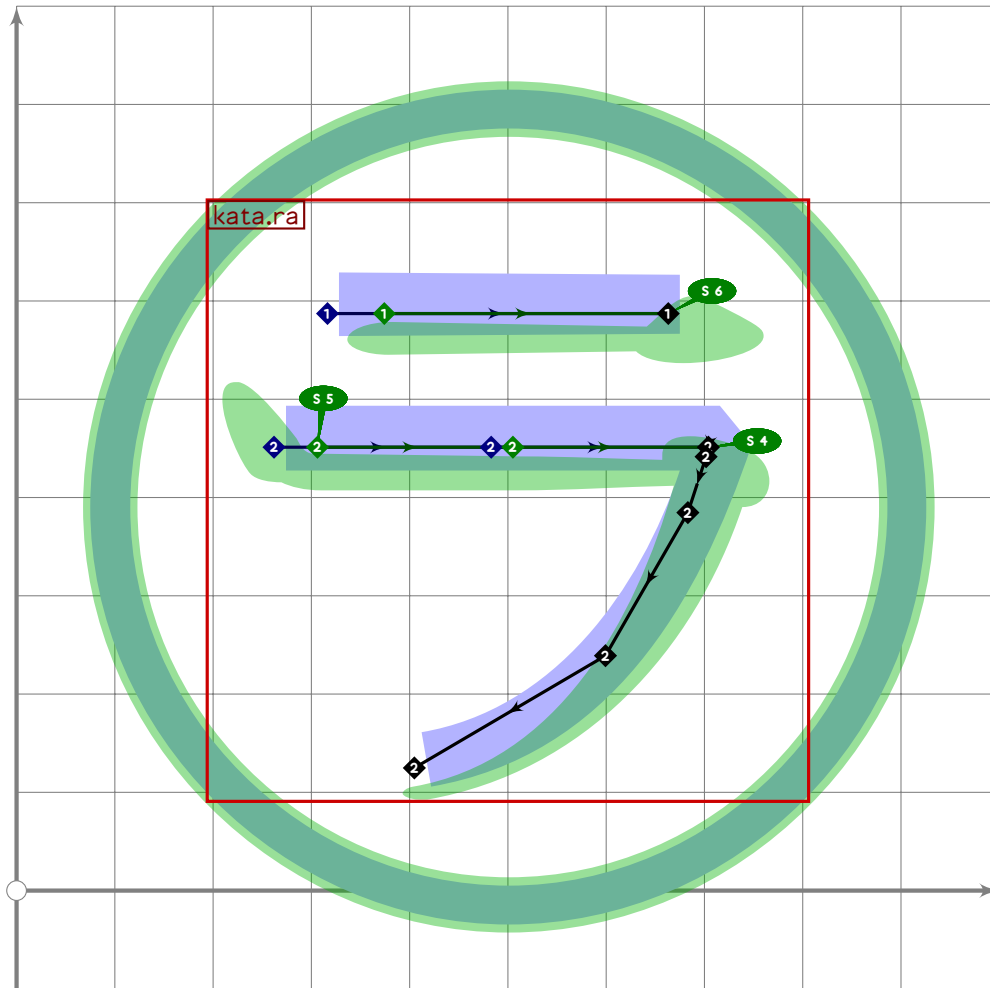
```

U+32F5
tsuku.uni32F5

32



```
585 % circled "yo"
586 begint Suglyph("uni32F5",245);
587   circle.single;
588   tsu_xform(tsu_xf.circled)(kata.yo);
589   tsu_render_in_circle(tsu_xf.cbound);
590 endtsuglyph;
591
```



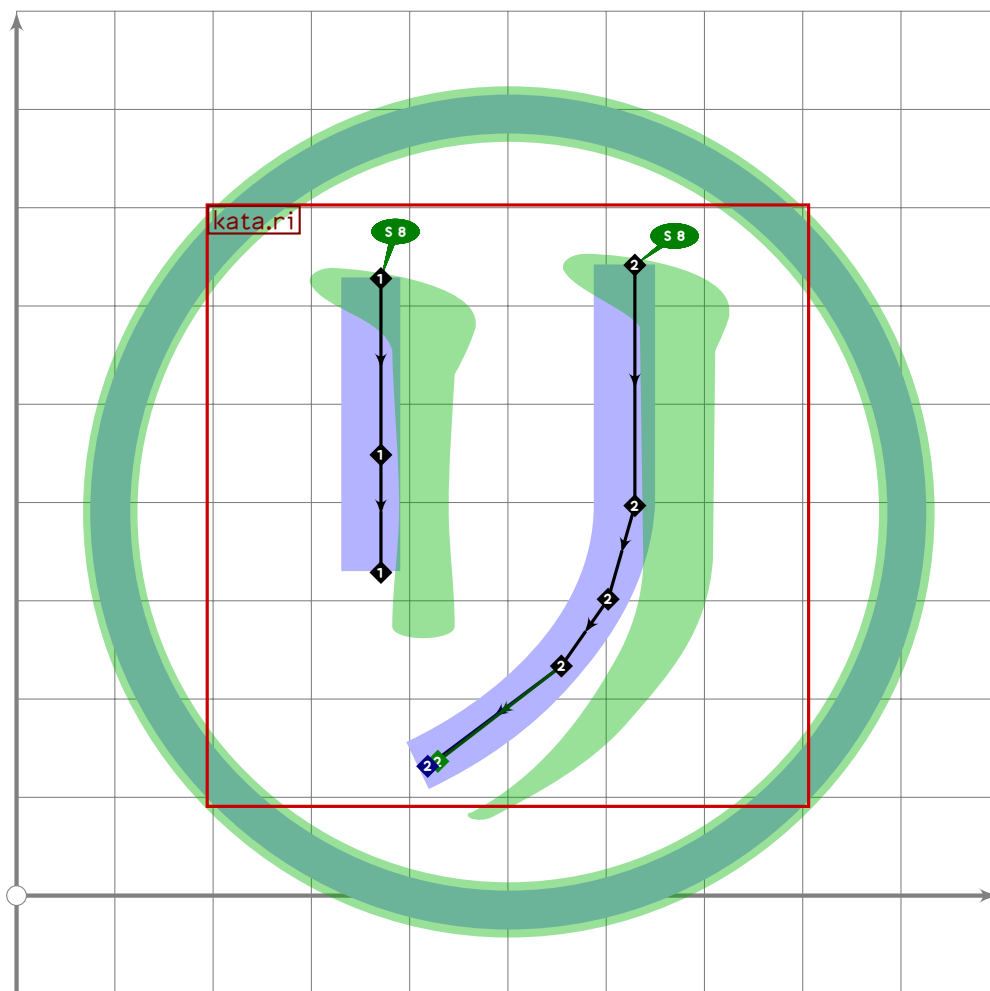
```

592 % circled "ra"
593 begint Suglyph("uni32F6";246);
594   circle.single;
595   tsu_xform(tsu_xf.circled)(kata.ra);
596   tsu_render_in_circle(tsu_xf.cbound);
597 endtsuglyph;
598

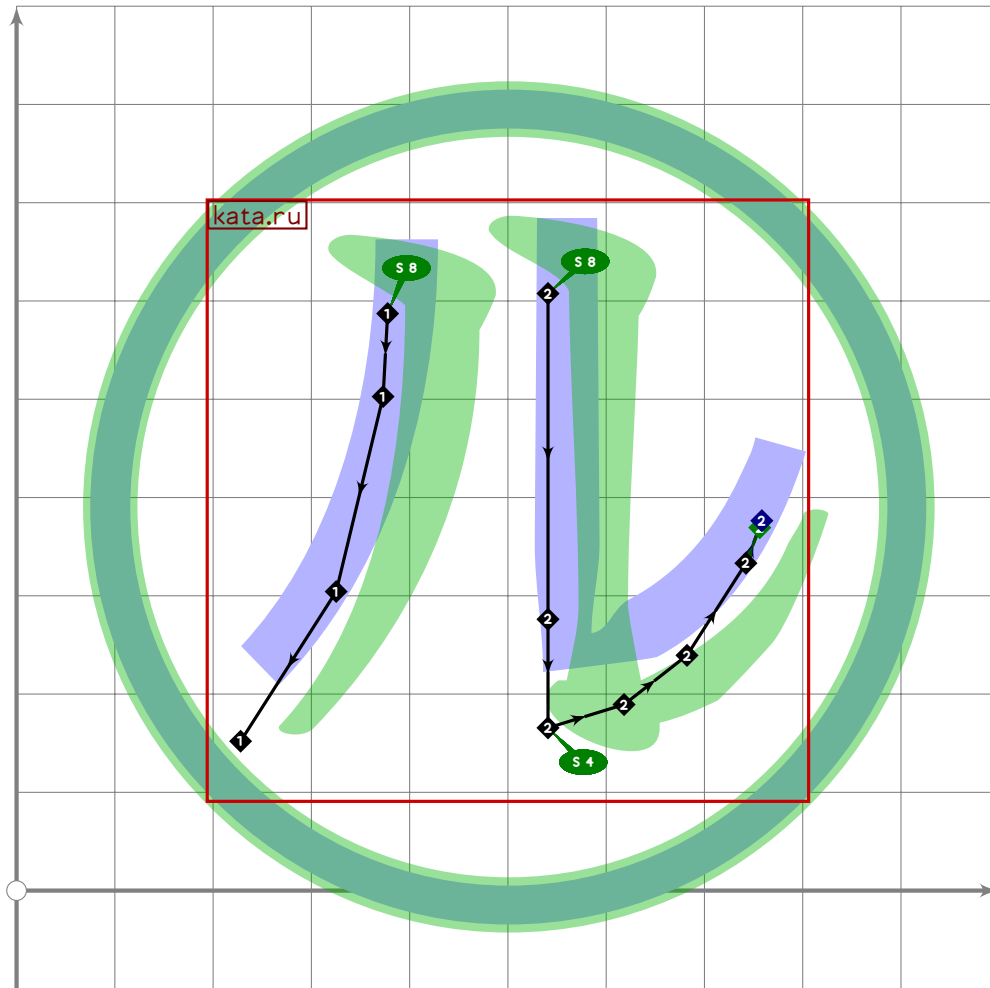
```

U+32F7
tsuku.uni32F7

32



```
599 % circled "ri"  
600 begint Suglyph("uni32F7";247);  
601   circle.single;  
602   tsu_xform(tsu_xf.circled)(kata.ri);  
603   tsu_render_in_circle(tsu_xf.cbound);  
604 endtsuglyph;  
605
```



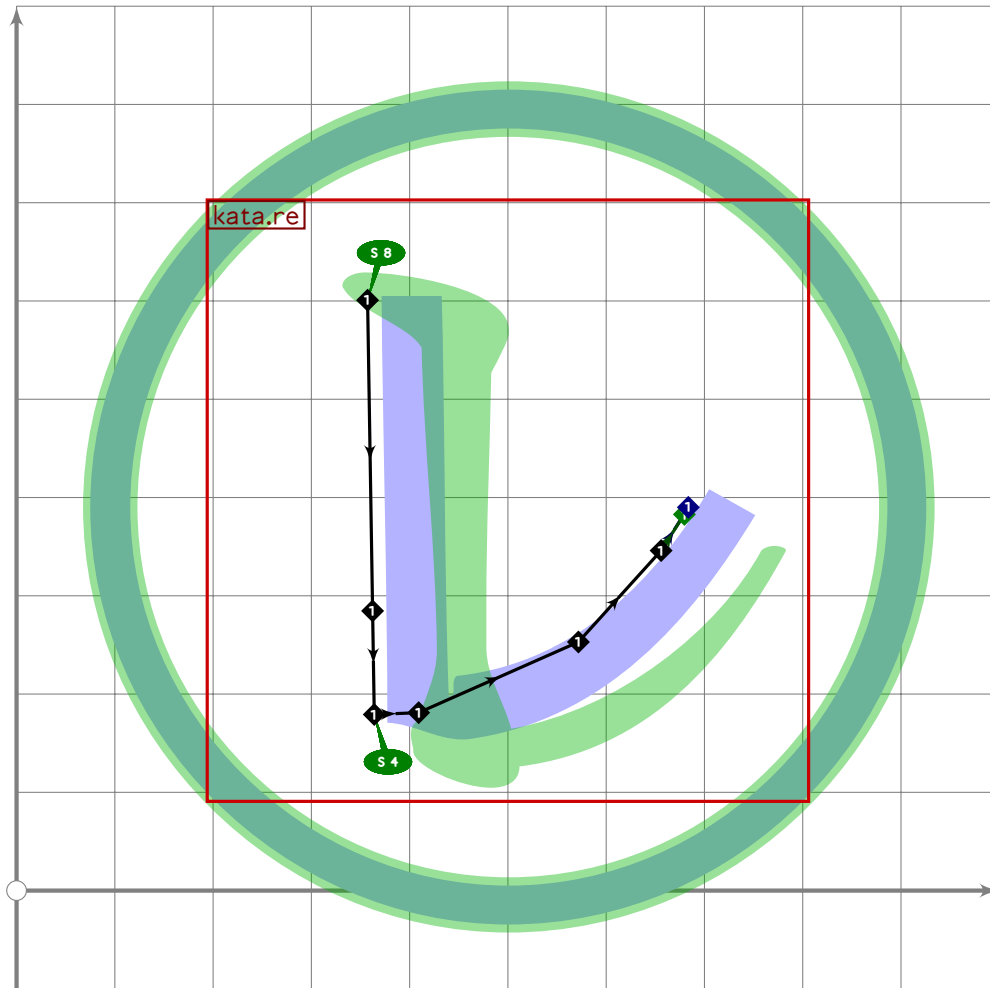
```

606 % circled "ru"
607 begintsuglyph("uni32F8",248);
608   circle.single;
609   tsu_xform(tsu_xf.circled)(kata.ru);
610   tsu_render_in_circle(tsu_xf.cbound);
611 endtsuglyph;
612

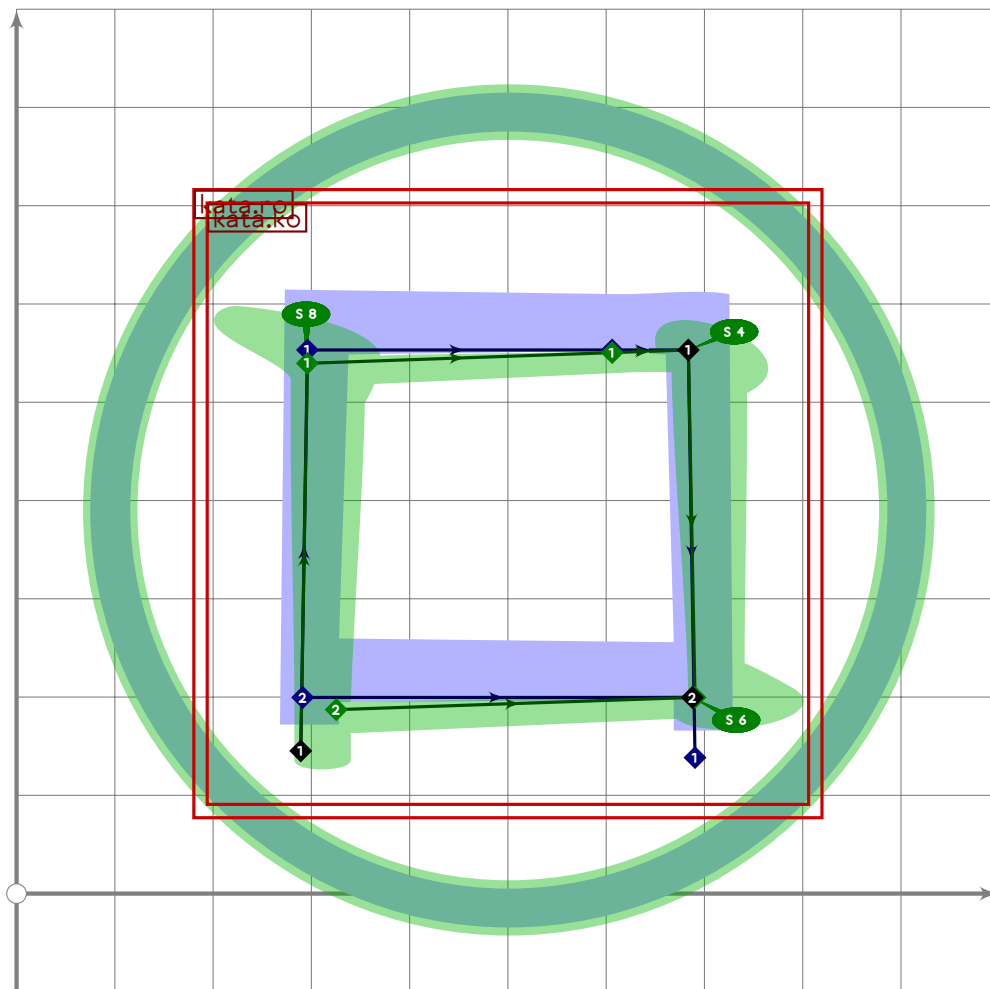
```

U+32F9
tsuku.uni32F9

32



```
613 % circled "re"  
614 begint Suglyph("uni32F9";249);  
615   circle.single;  
616   tsu_xform(tsu_xf.circled)(kata.re);  
617   tsu_render_in_circle(tsu_xf.cbound);  
618 endtsuglyph;  
619
```

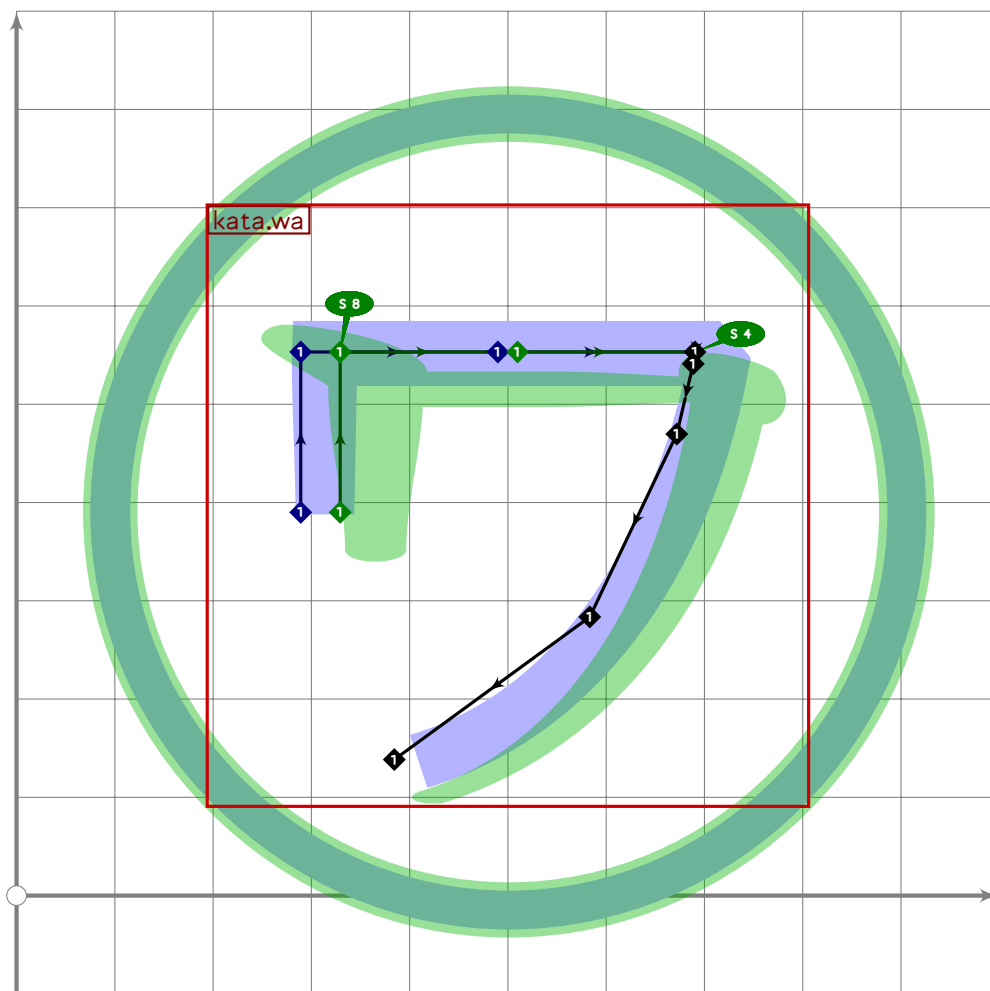
```

620 % circled "ro"
621 begint Suglyph("uni32FA",250);
622   circle.single;
623   tsu_xform(tsu_xf.circled)(kata.ro);
624   tsu_render_in_circle(tsu_xf.cbound);
625 endtsuglyph;
626

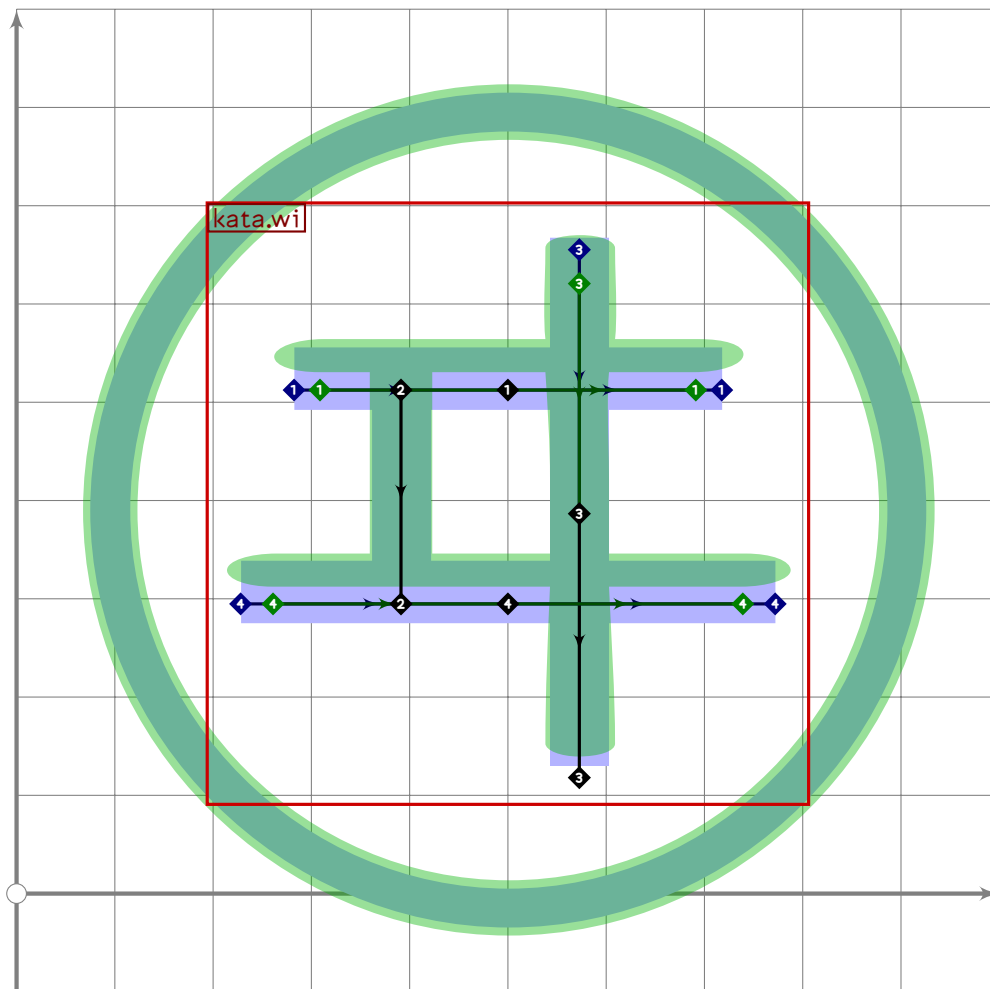
```

U+32FB
tsuku.uni32FB

32



```
627 % circled "wa"
628 begint Suglyph("uni32FB",251);
629   circle.single;
630   tsu_xform(tsu_xf.circled)(kata.wa);
631   tsu_render_in_circle(tsu_xf.cbound);
632 endtsuglyph;
633
```



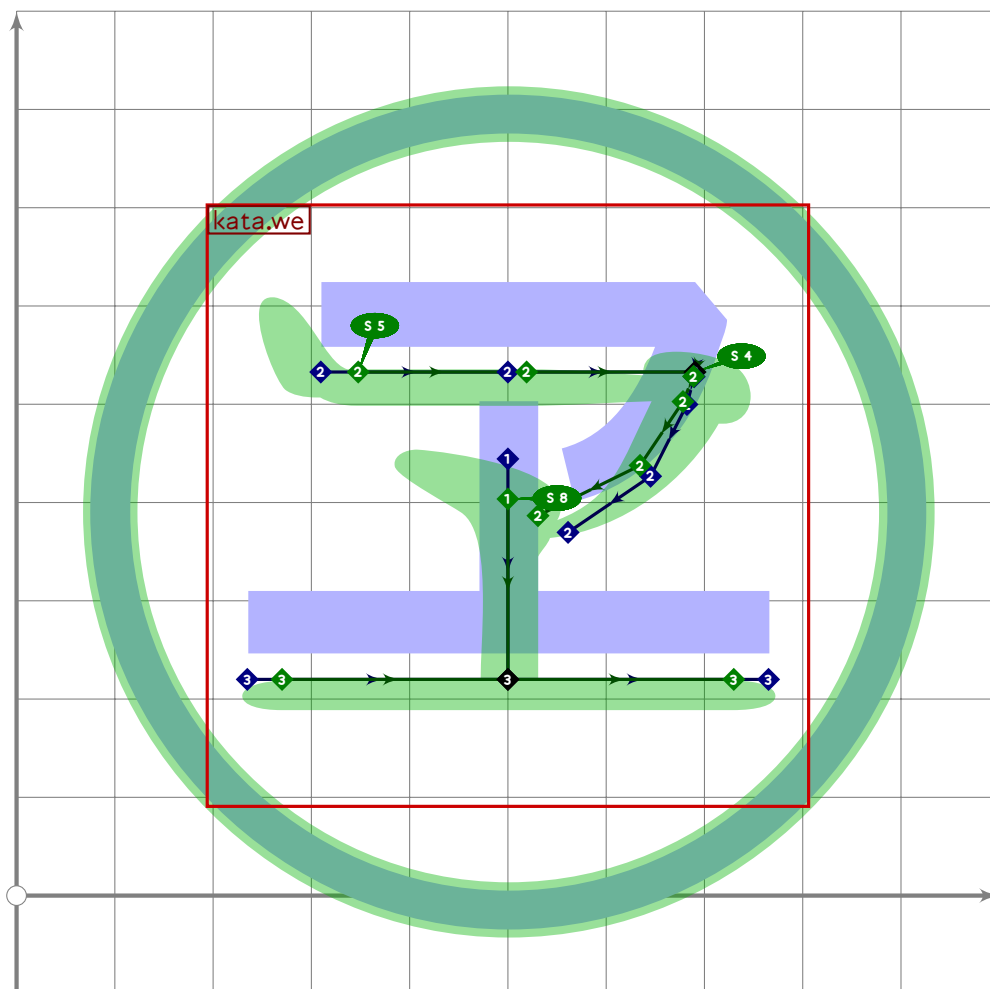
```

634 % circled "wi"
635 begint Suglyph("uni32FC";252);
636   circle.single;
637   tsu_xform(tsu_xf.circled)(kata.wi);
638   tsu_render_in_circle(tsu_xf.cbound);
639 endtsuglyph;
640

```

U+32FD
tsuku.uni32FD

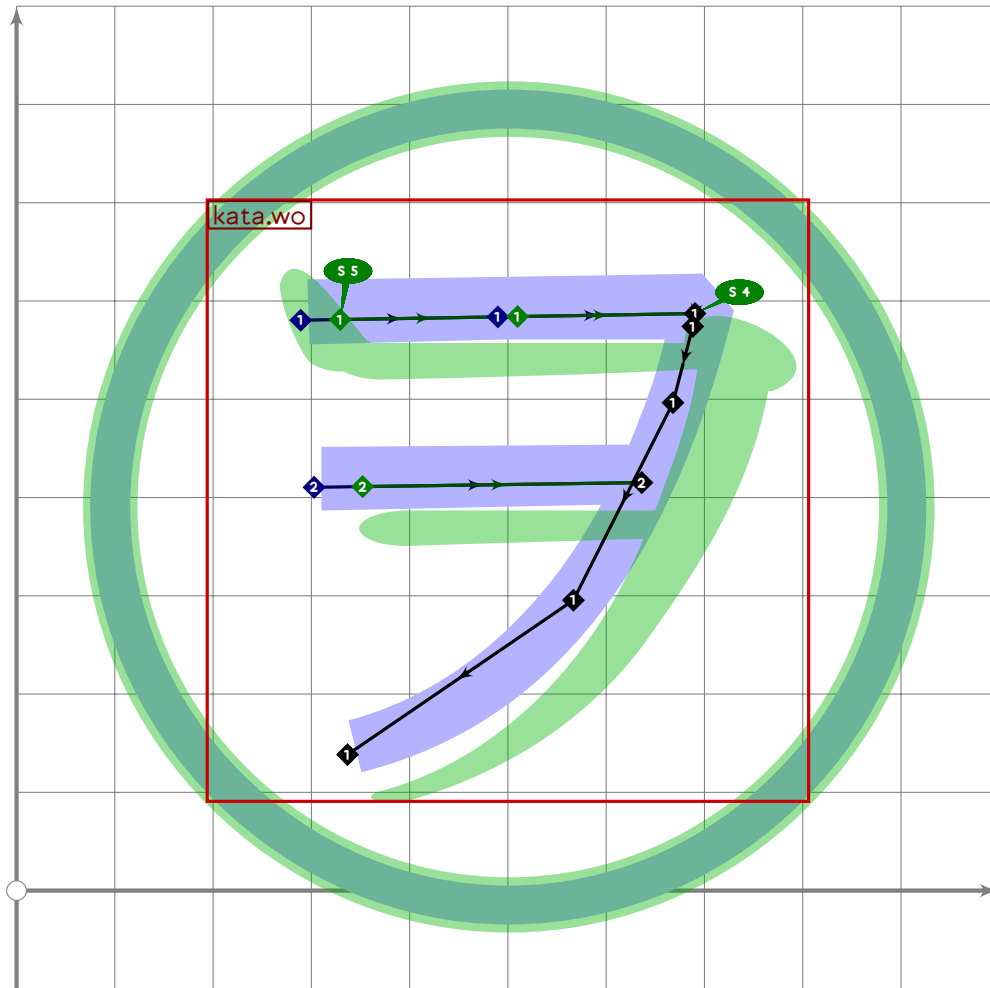
32



```

641 % circled "we"
642 begint Suglyph("uni32FD";253);
643   circle.single;
644   tsu_xform(tsu_xf.circled)(kata.we);
645   tsu_render_in_circle(tsu_xf.cbound);
646 endtsuglyph;
647

```



```

648 % circled "wo"
649 begintsuglyph("uni32FE";254);
650   circle.single;
651   tsu_xform(tsu_xf.circled)(kata.wo);
652   tsu_render_in_circle(tsu_xf.cbound);
653 endtsuglyph;
654
655
656
657 endfont;
658
659

```

tsuku-34.mp

```
1 %
2 % Unicode page 34 (Kanji) for Tsukurimashou
3 % Copyright (C) 2012 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradeone.mp;
38 input radical.mp;
39 input rare.mp;
40
41 do_late_includes;
42
43 

---


44
45 % extra "uncultivated"
46 begintsuglyph("uni342C"44); [see page 792]
47   kanji.rare.uncultivated;
48   tsu_render;
49 endtsuglyph;
50
51 

---


52
53 endfont;
54
55 

---


```

tsuku-4d.mp

```
1 %
2 % Unicode page 4D (I Ching/Yijing) for Tsukurimashou
3 % Copyright (C) 2011, 2012 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input iching.mp;
39
40 do_late_includes;
41
42 

---

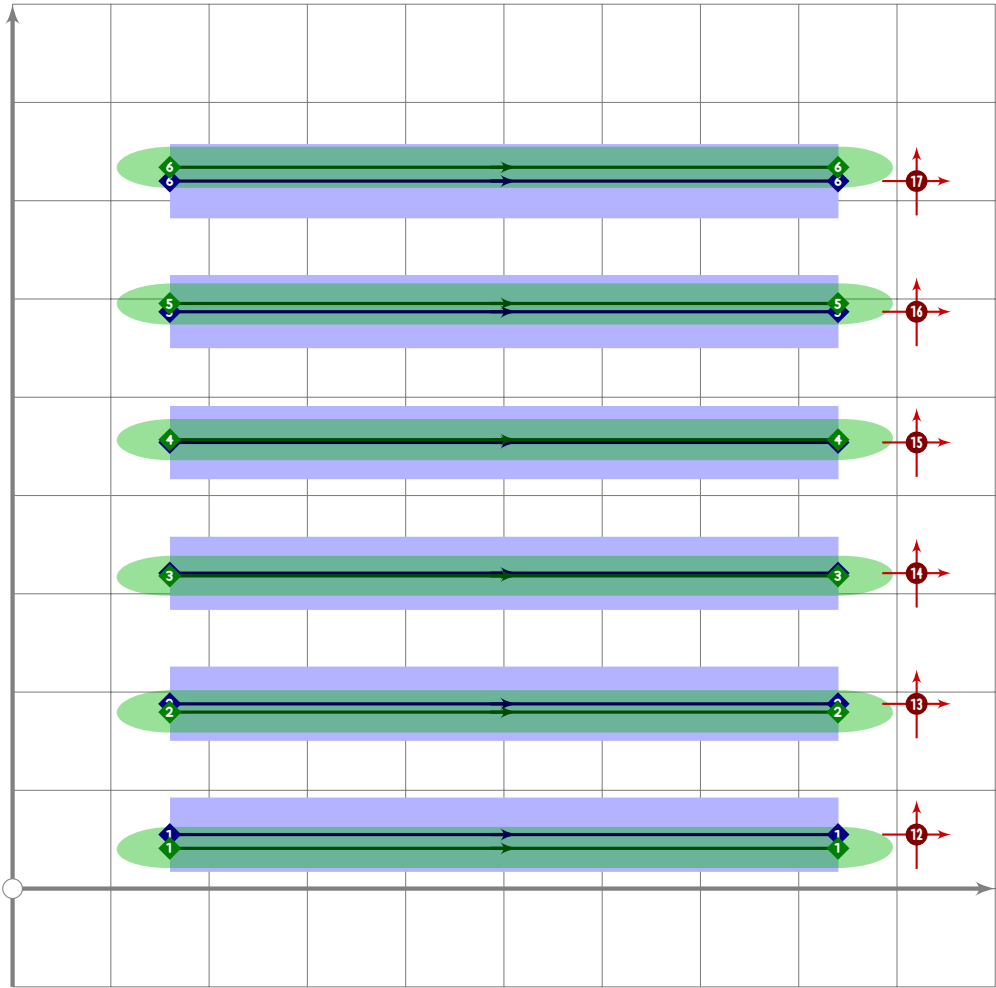

43
```

4D

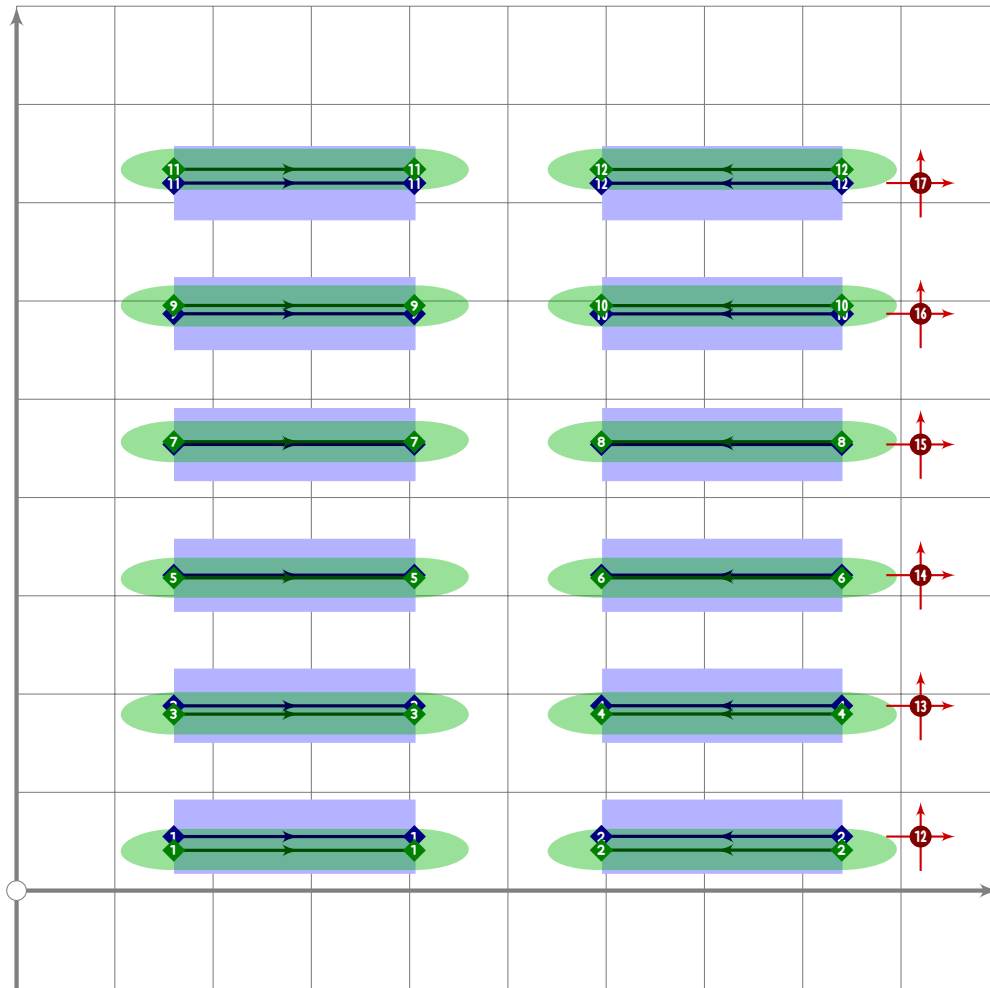
I Ching

```
44 % I CHING
45
46 vardef make_hexagram(expr i,la,lb,lc,ld,le,lf) =
47   string hexname;
48   hexname:=if i<10: "iching0" else: "iching" fi & decimal i;
49   begintsuglyph(hexname,i+191);
50   iching.line(1,6,la);
51   iching.line(2,6,lb);
52   iching.line(3,6,lc);
53   iching.line(4,6,ld);
54   iching.line(5,6,le);
55   iching.line(6,6,lf);
56   tsu_render;
57   endtsuglyph;
58 enddef;
```

4D



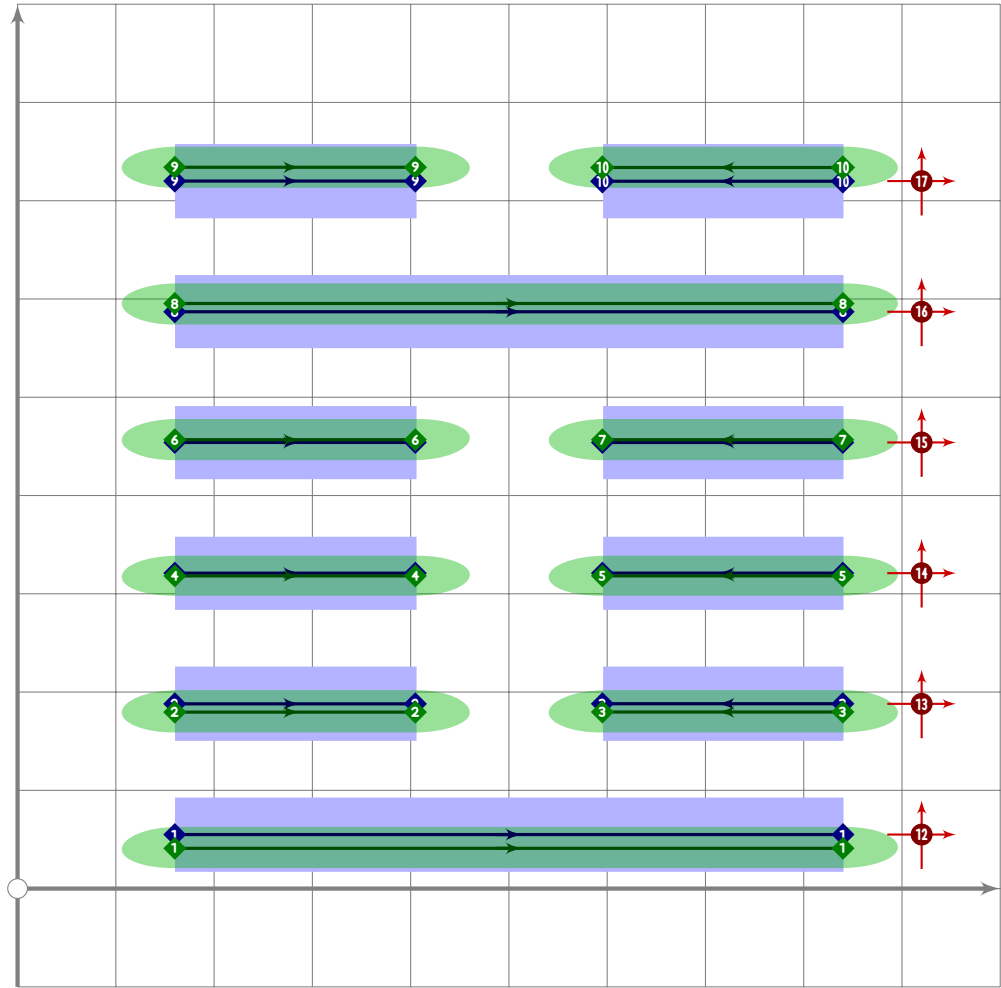
```
59  
60 make_hexagram(1, 1,1,1,1,1);
```

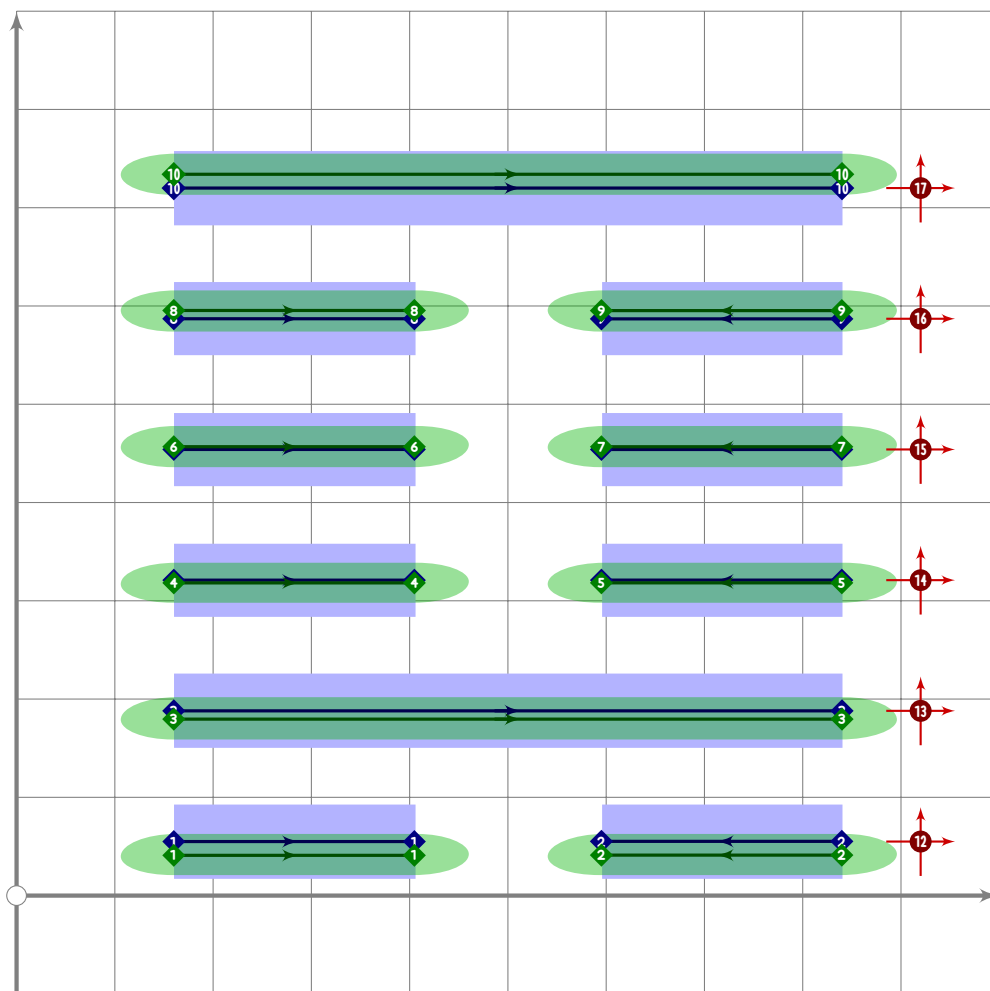



61 make_hexagram(2, 0,0,0,0,0);

4D

4D

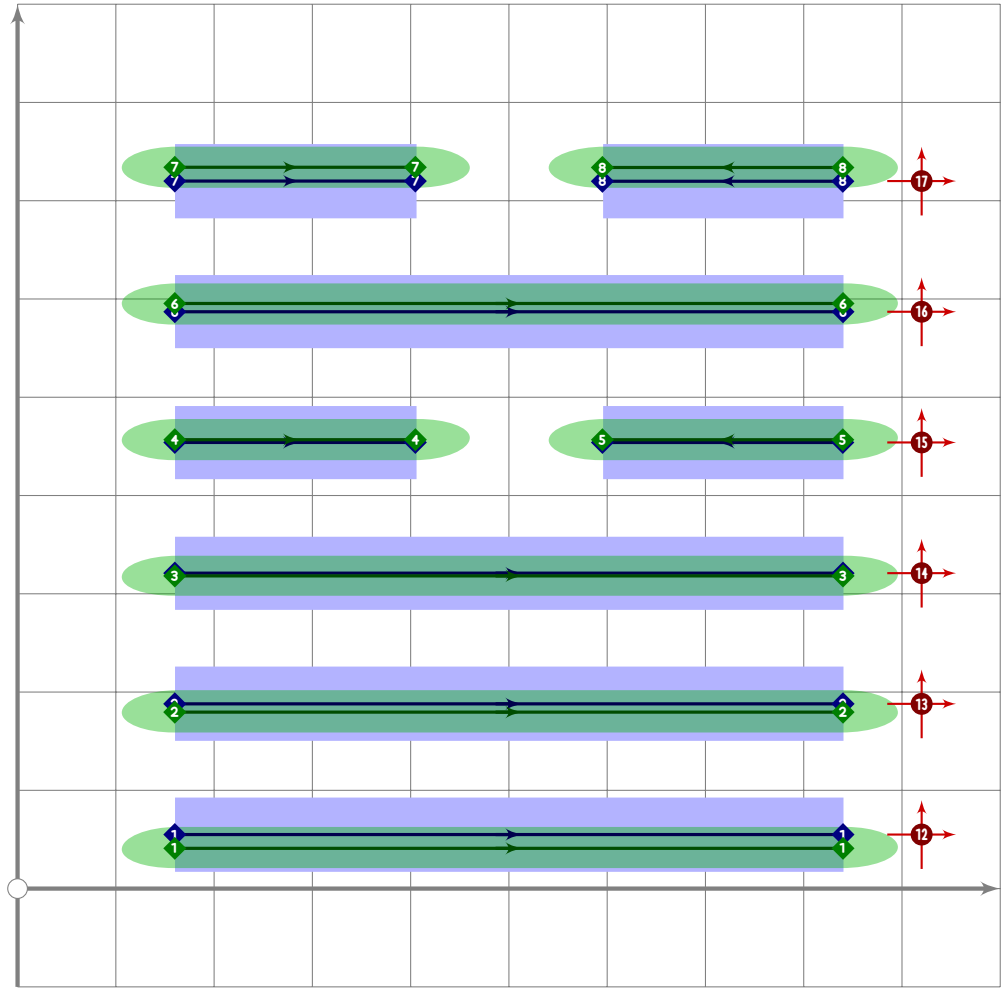




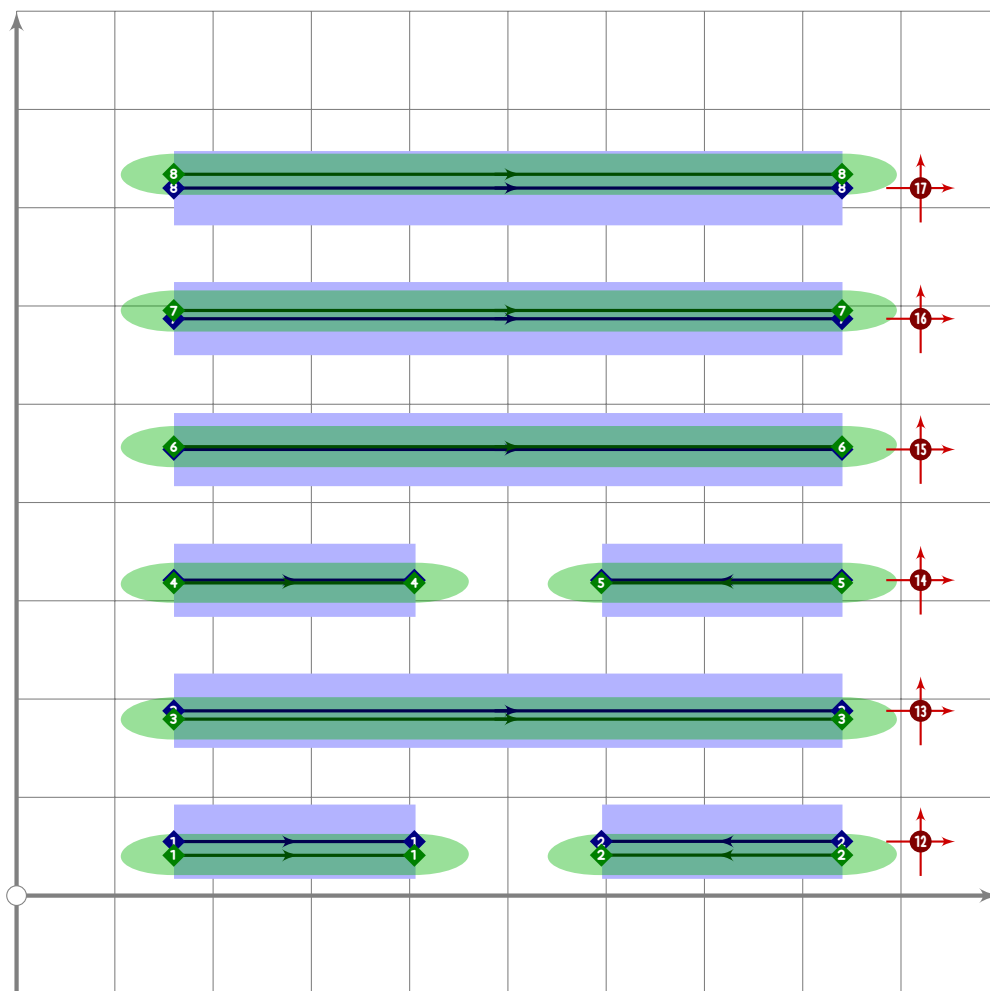
63 make_hexagram(4, 0,1,0,0,0,1);

4D

4D



64 make_hexagram(5, 1,1,1,0,1,0);



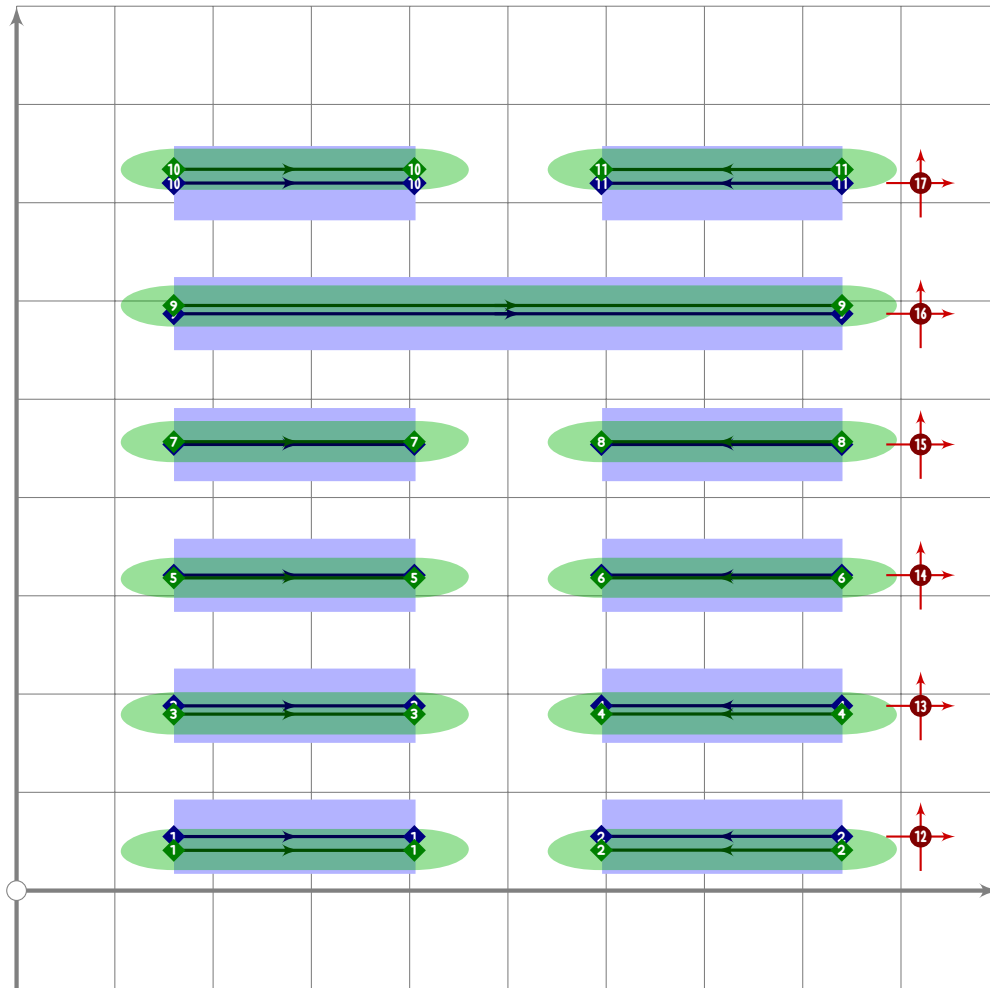
65 make_hexagram(6, 0,1,0,1,1,1);

4D

U+4DC6
tsuku.iching07



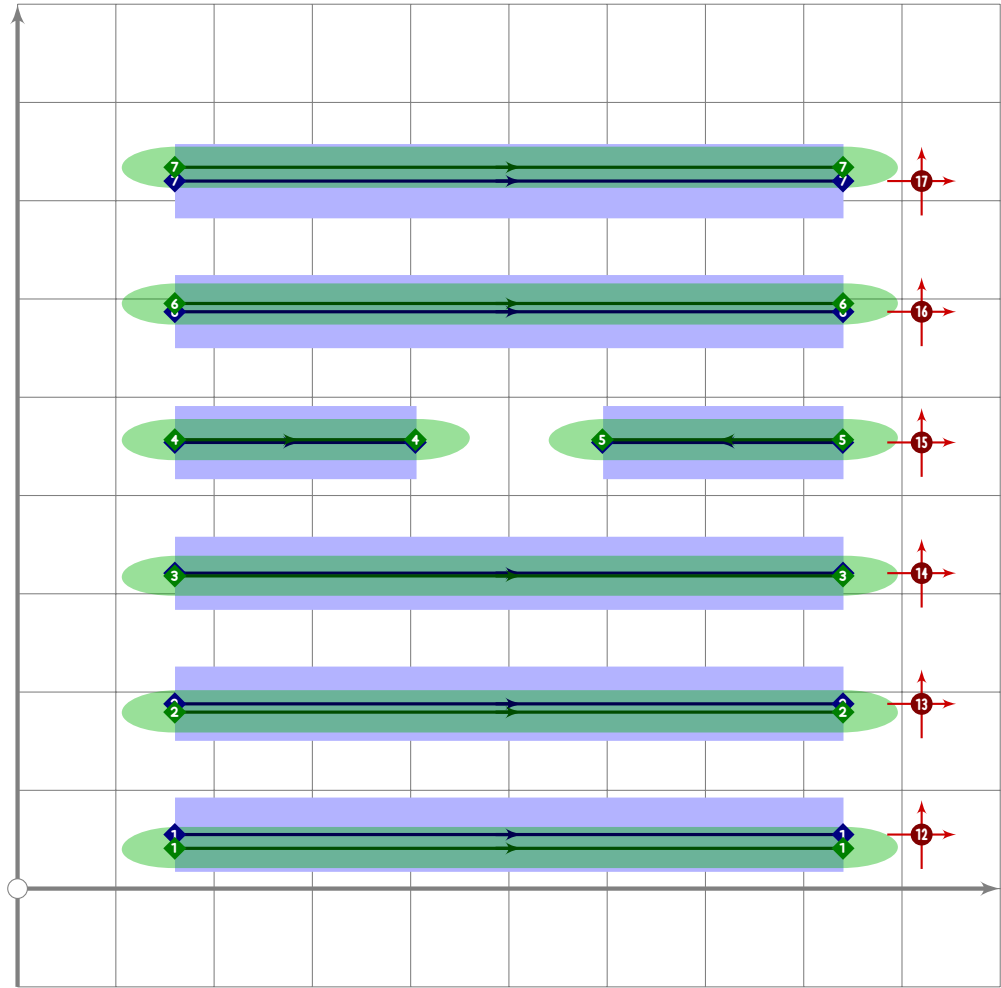
```
66 make_hexagram(7, 0,1,0,0,0,0);
```



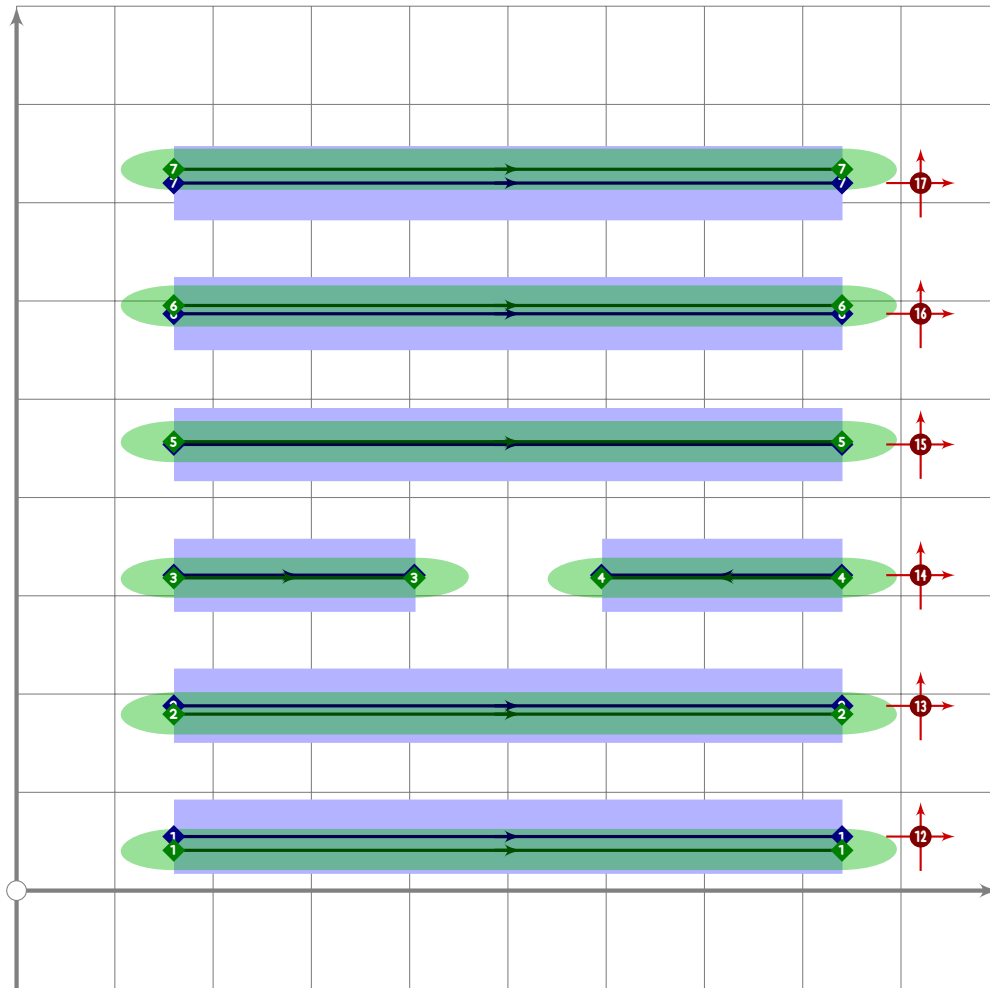
67 make_hexagram(8, 0,0,0,1,0);

4D

4D



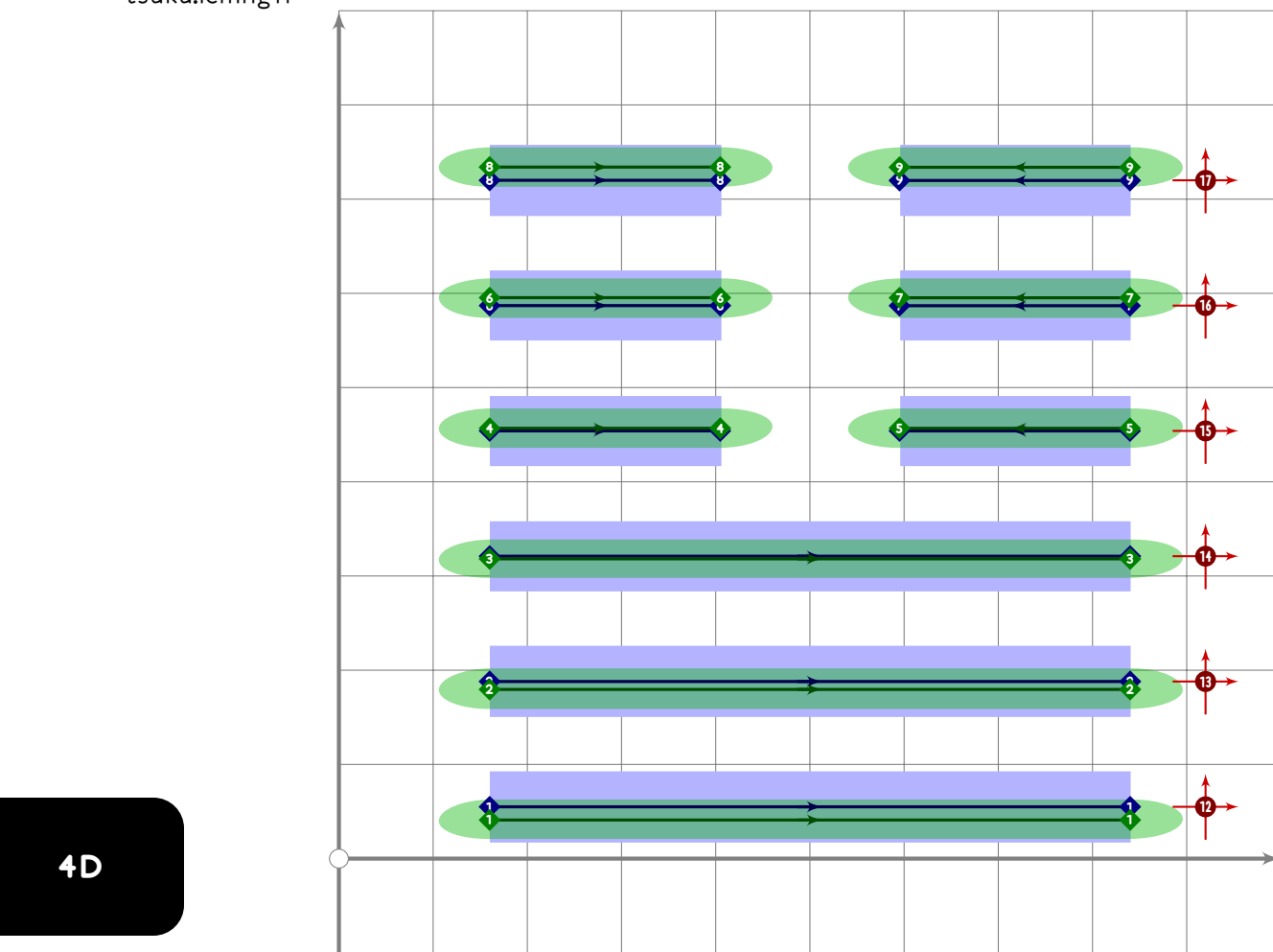
68 make_hexagram(9, 1,1,1,0,1,1);



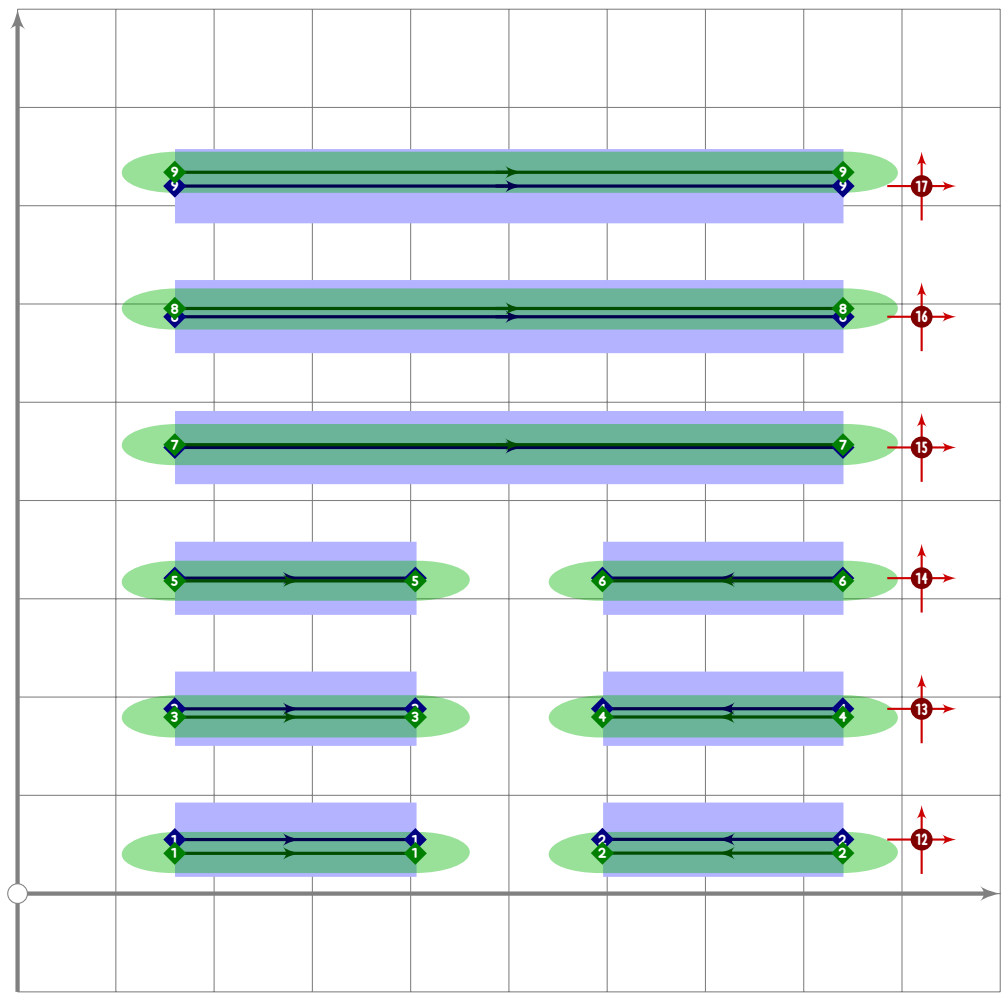
69 make_hexagram(10,1,1,0,1,1);

4D

U+4DCA
tsuku.iching11



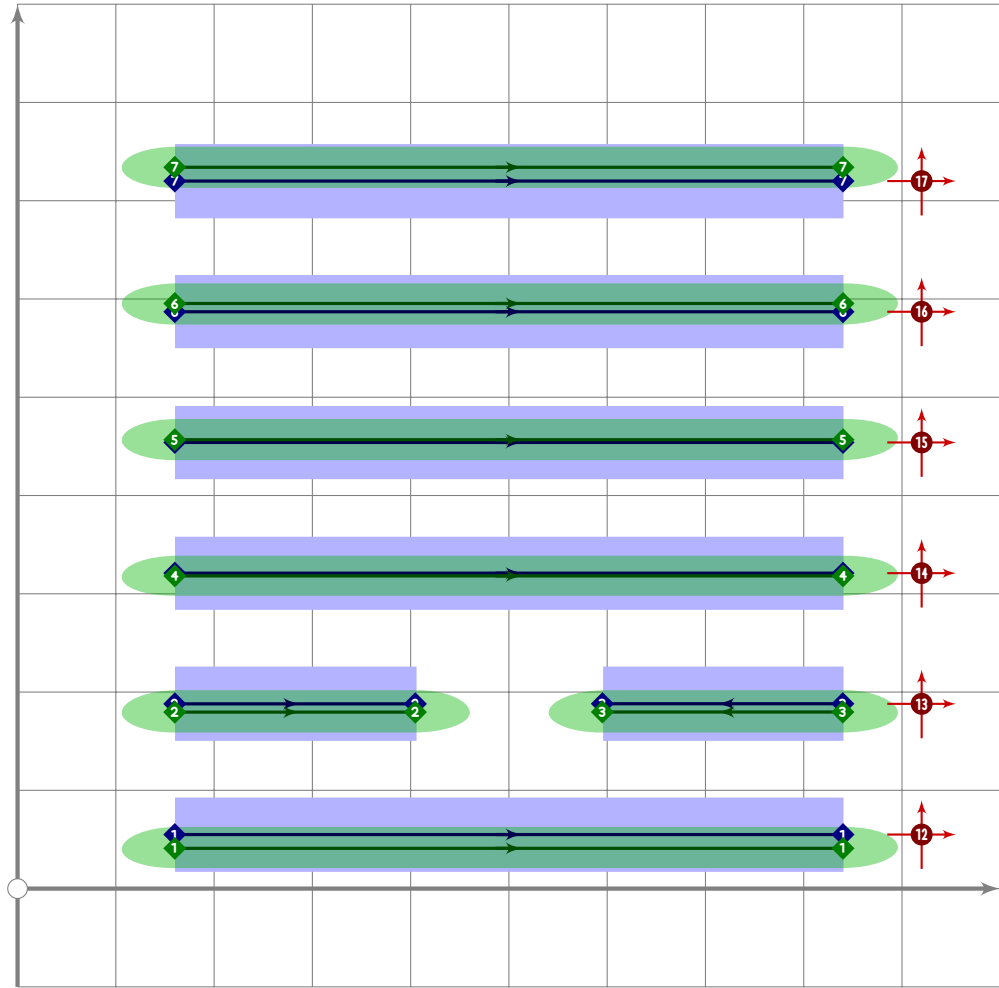
```
70 make_hexagram(1,1,1,0,0,0);
```



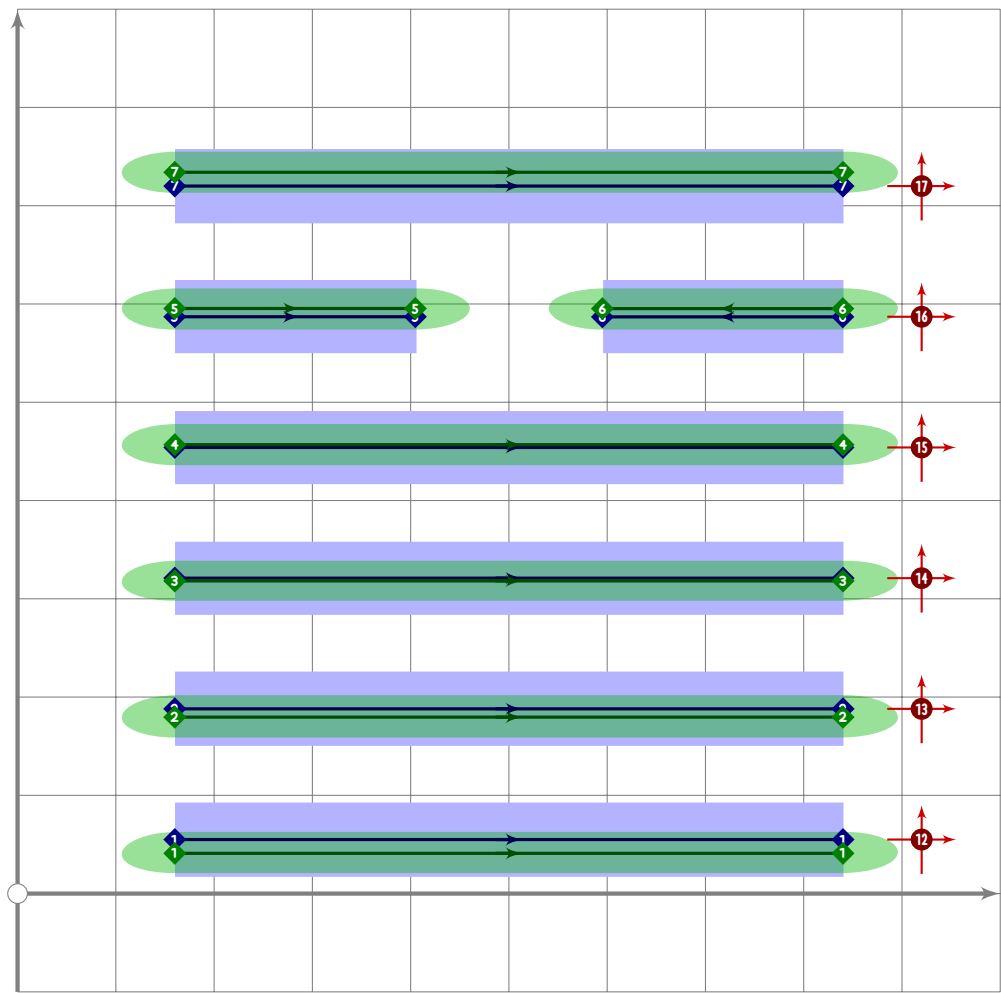
71 make_hexagram(12,0,0,0,1,1,1);

4D

4D



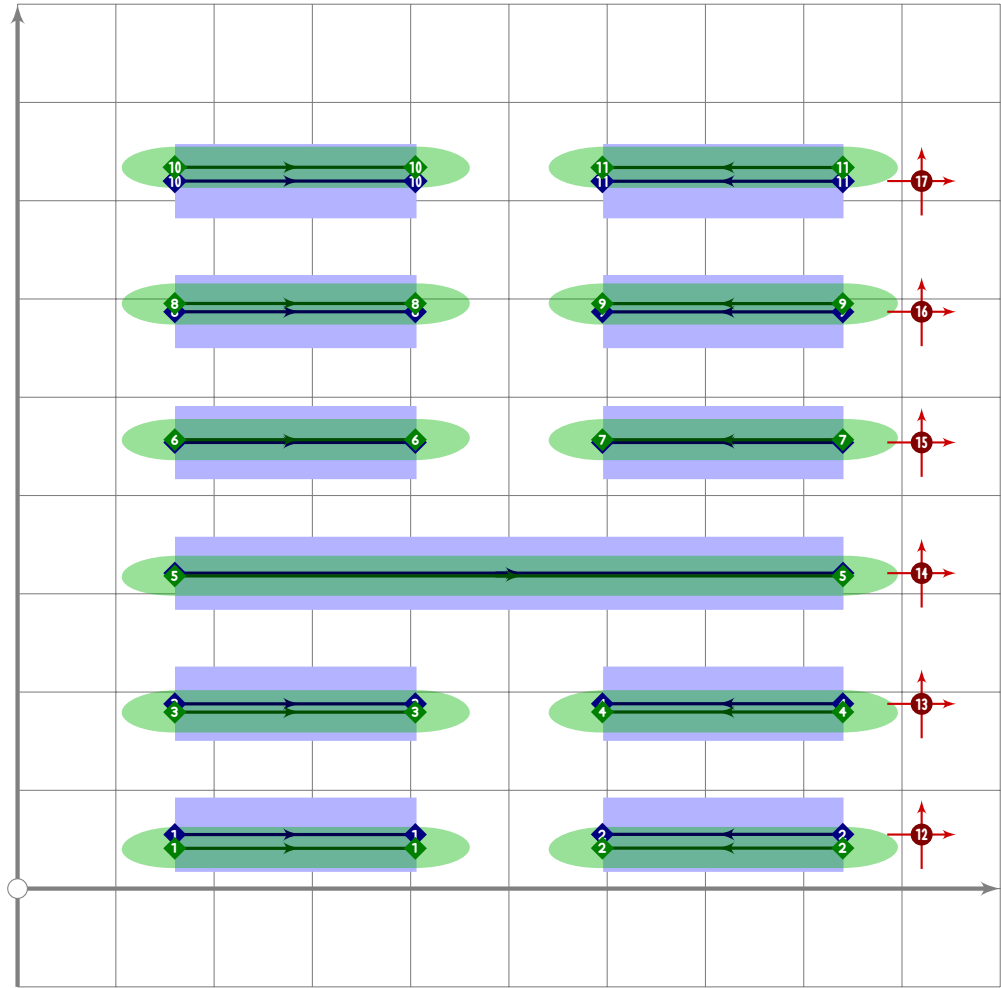
72 make_hexagram(13,1,0,1,1,1);



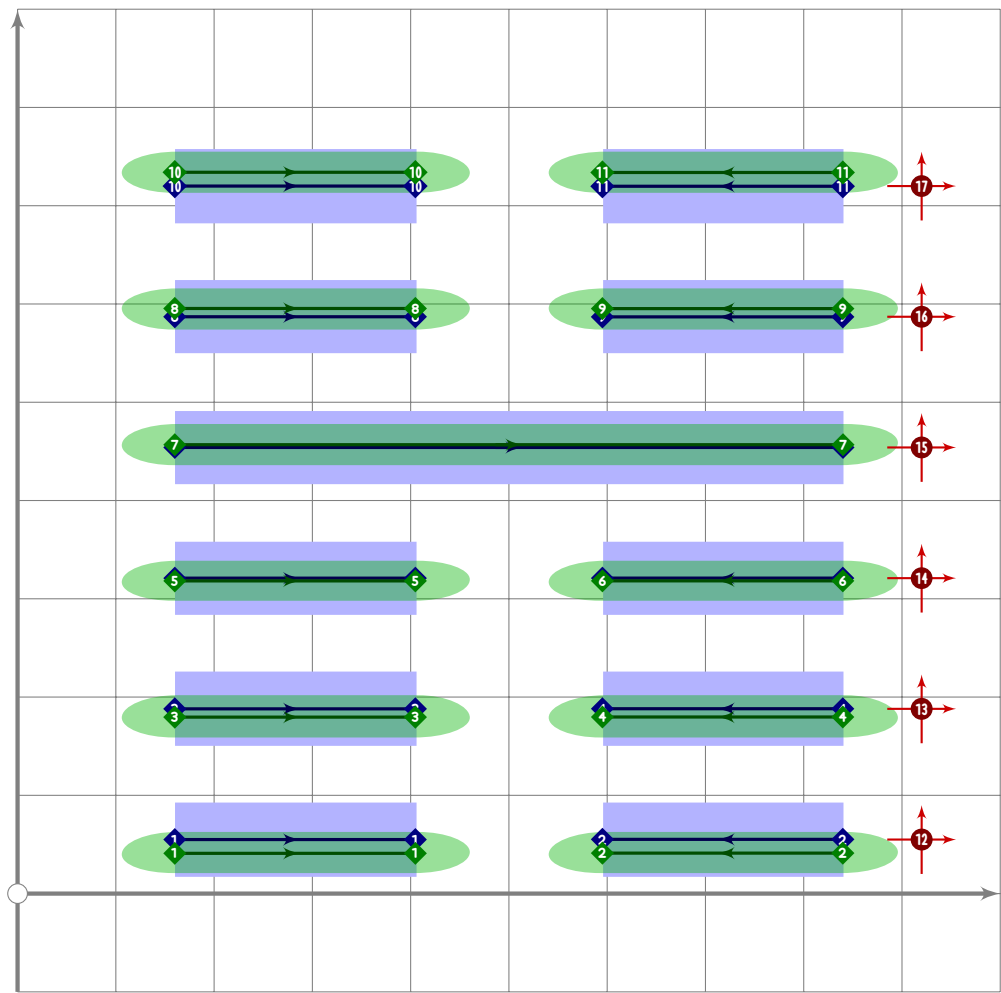
73 make_hexagram(14,1,1,1,0,1);

4D

4D



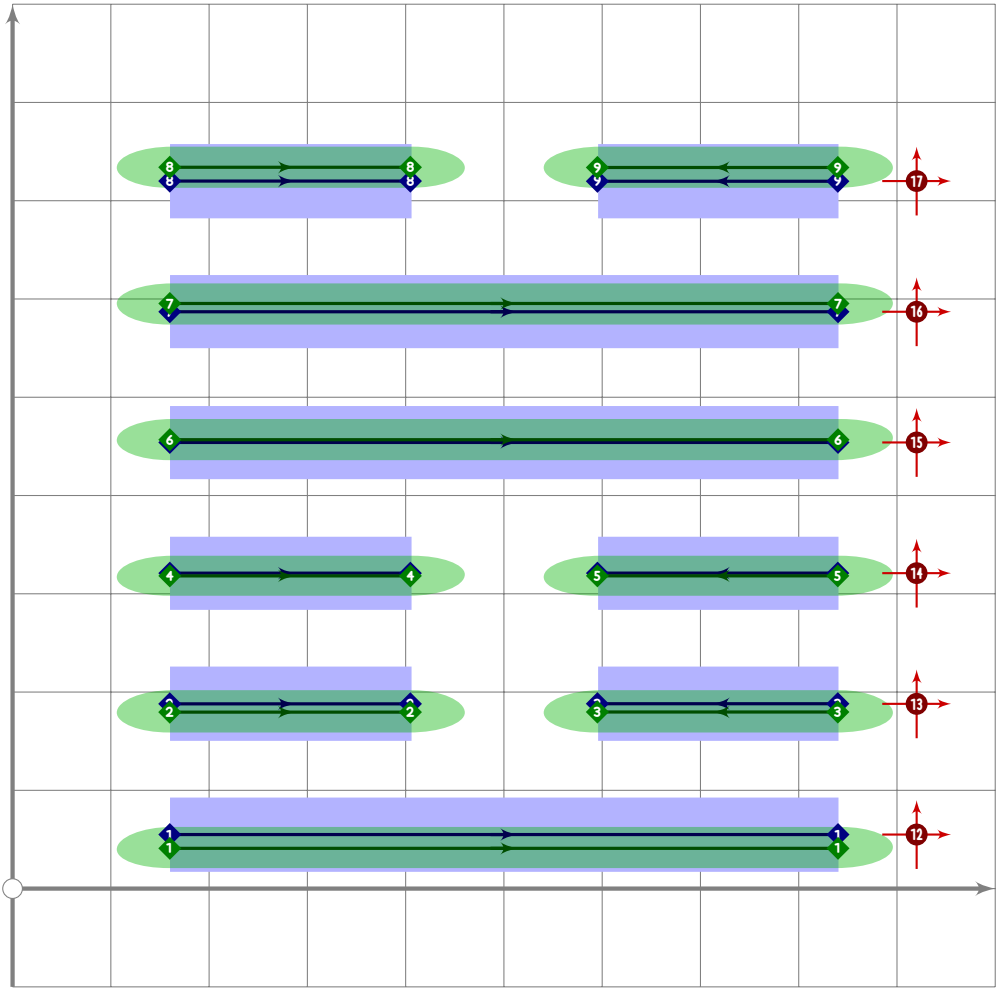
74 make_hexagram(15,0,0,1,0,0,0);



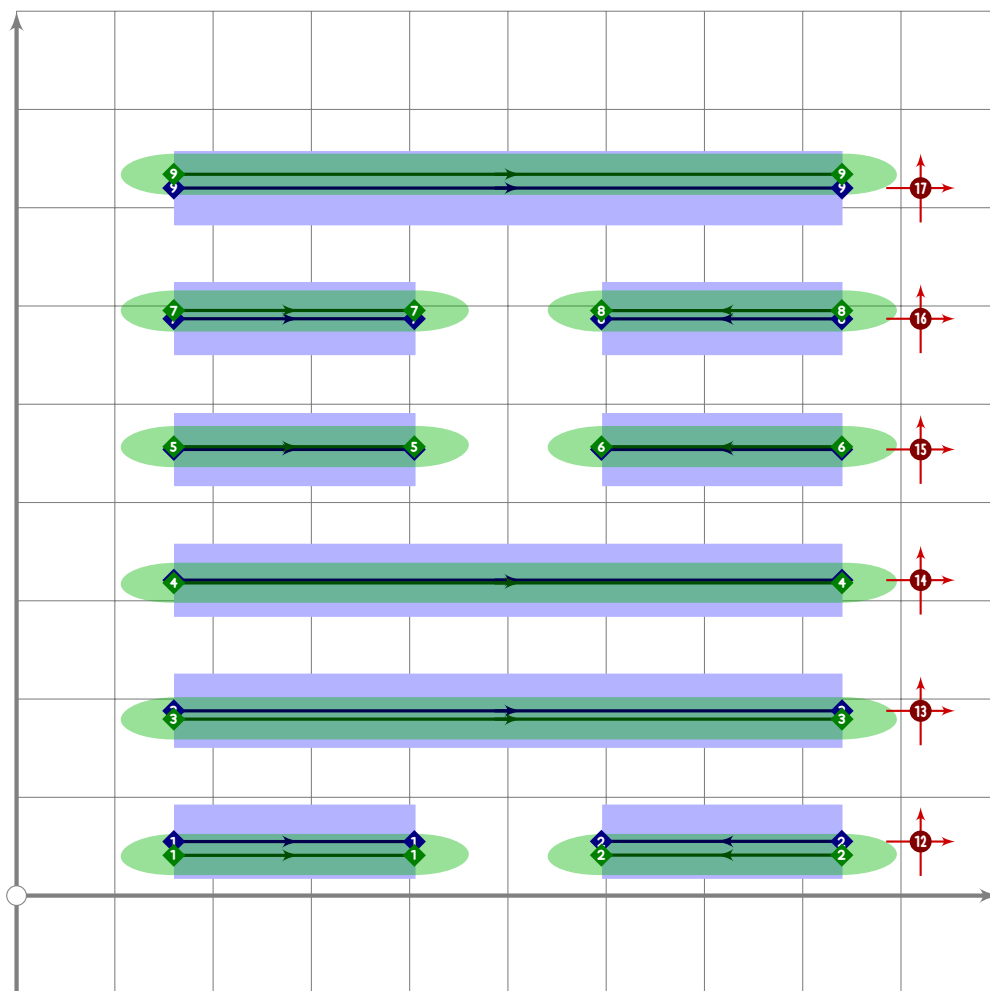
75 make_hexagram(16,0,0,0,1,0,0);

4D

4D



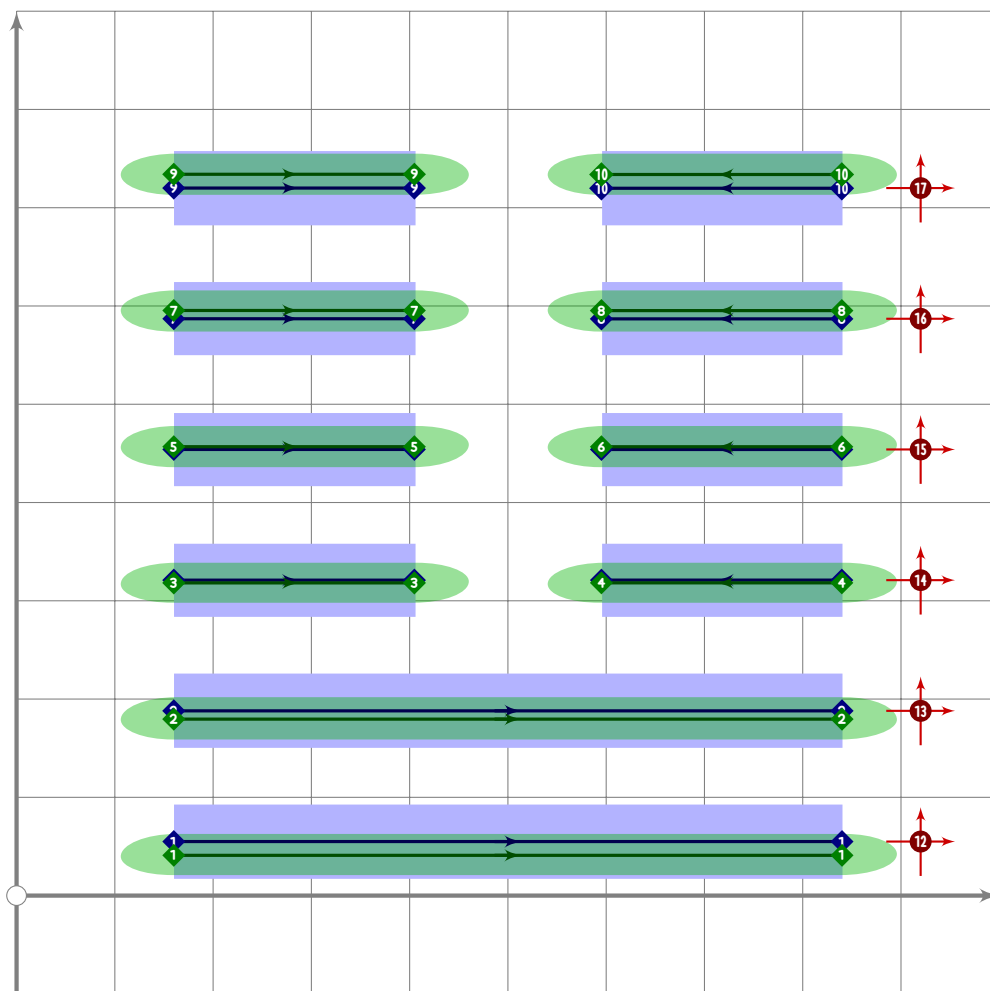
```
76  
77 make_hexagram(17,1,0,0,1,1,0);
```

78 make_hexagram(18,0,1,1,0,0,1);

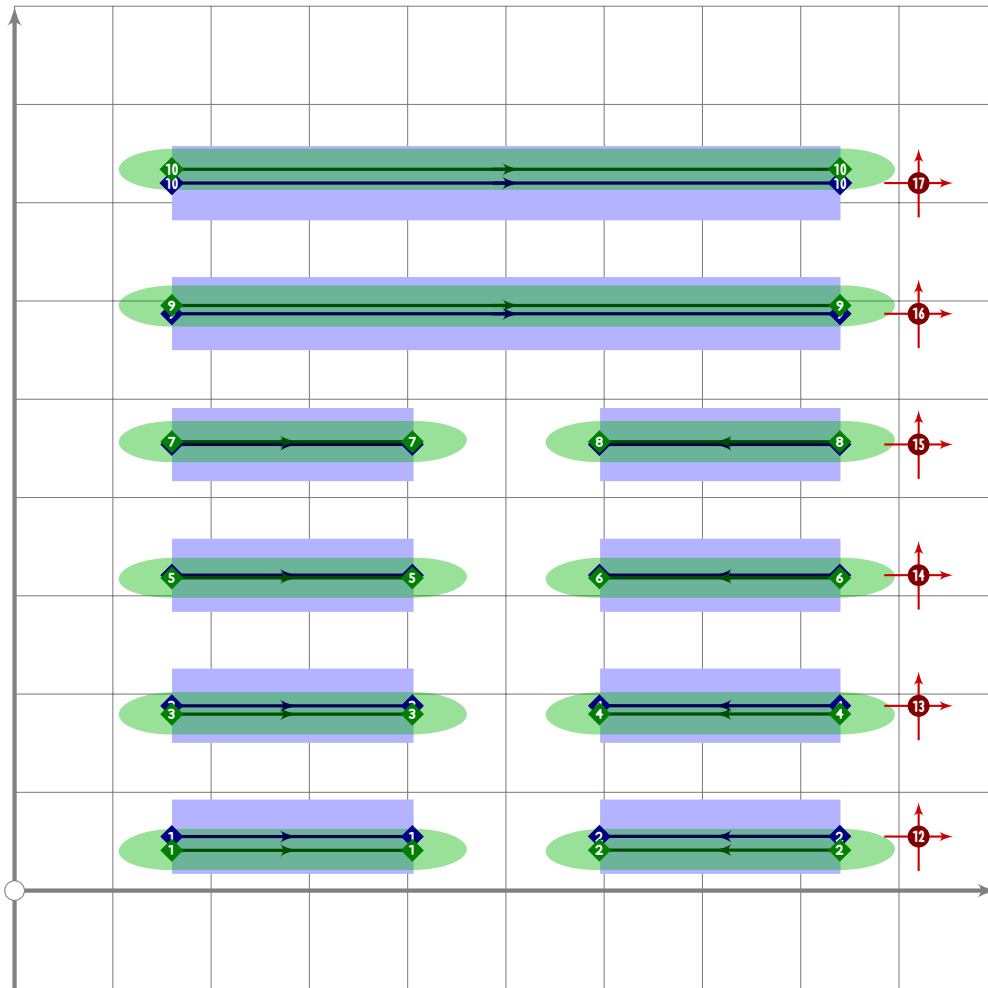
4D

U+4DD2
tsuku.iching19



4D

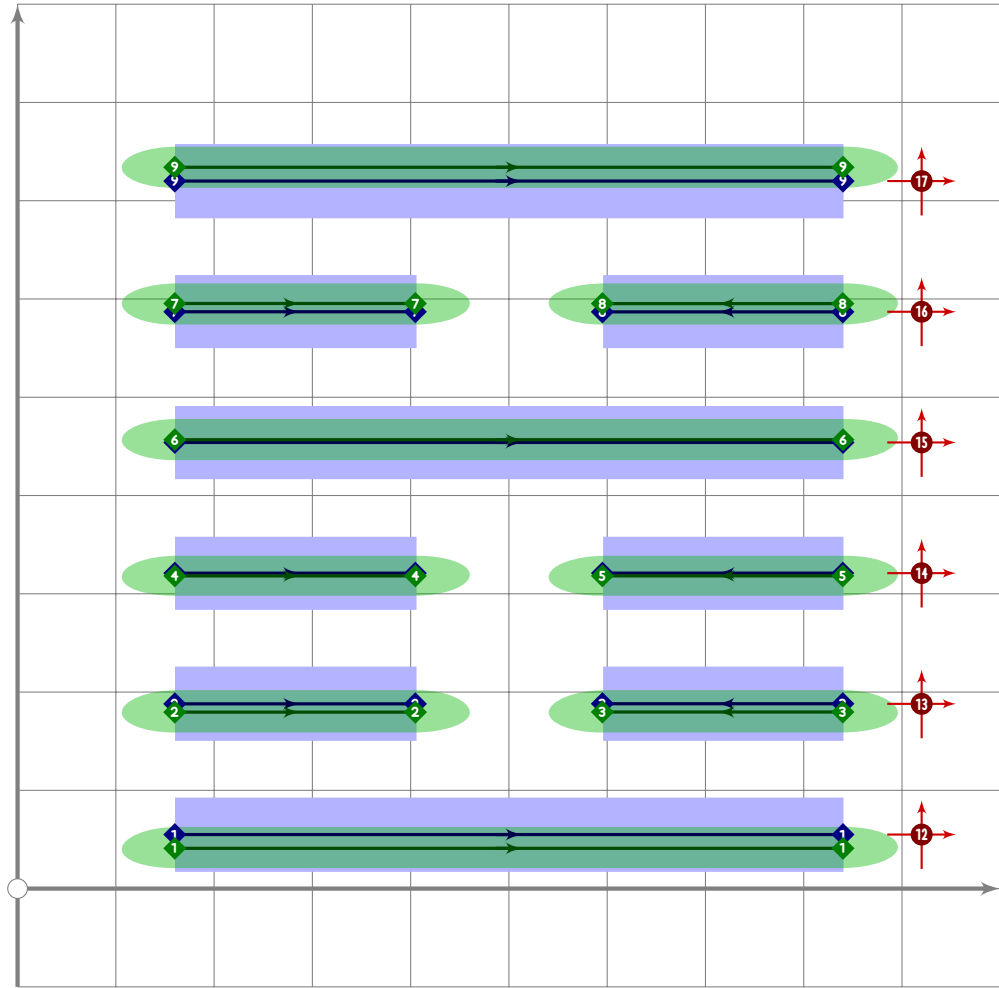
```
79 make_hexagram(19,1,0,0,0,0);
```



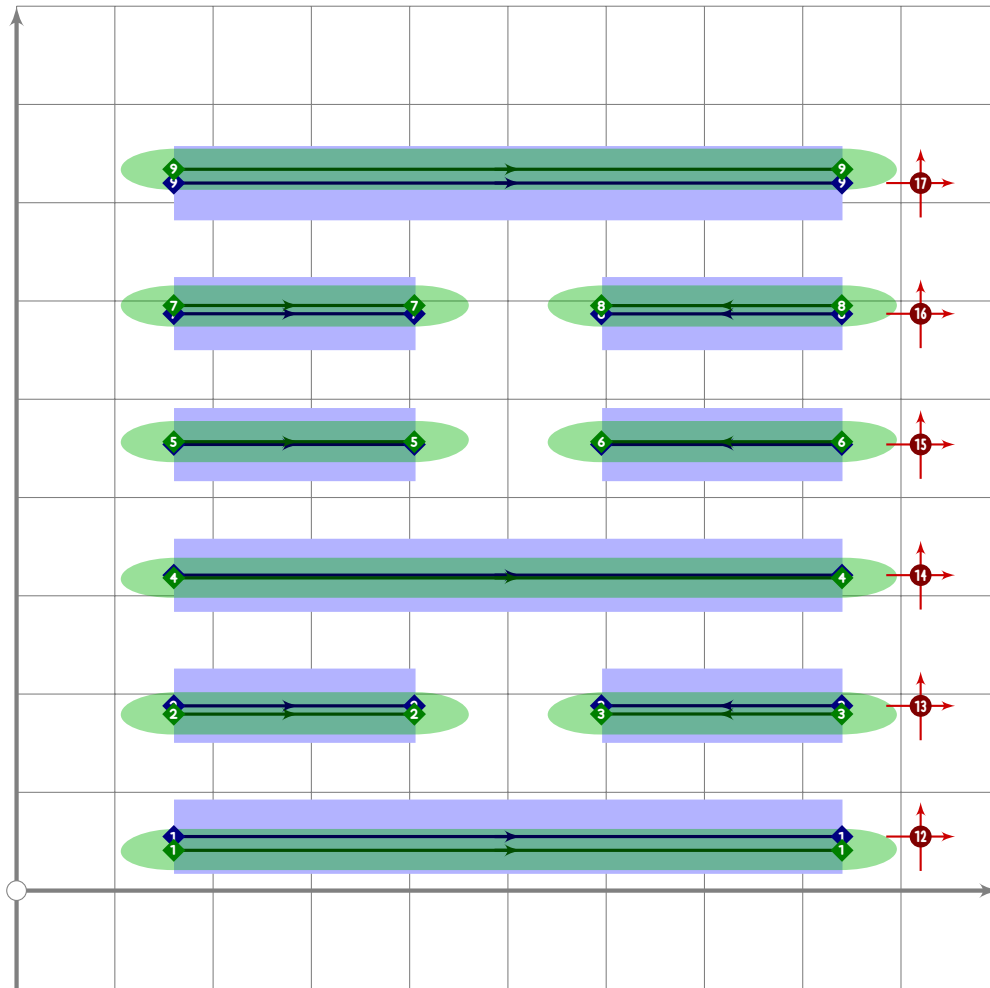
80 make_hexagram(20,0,0,0,0,1,1);

4D

4D



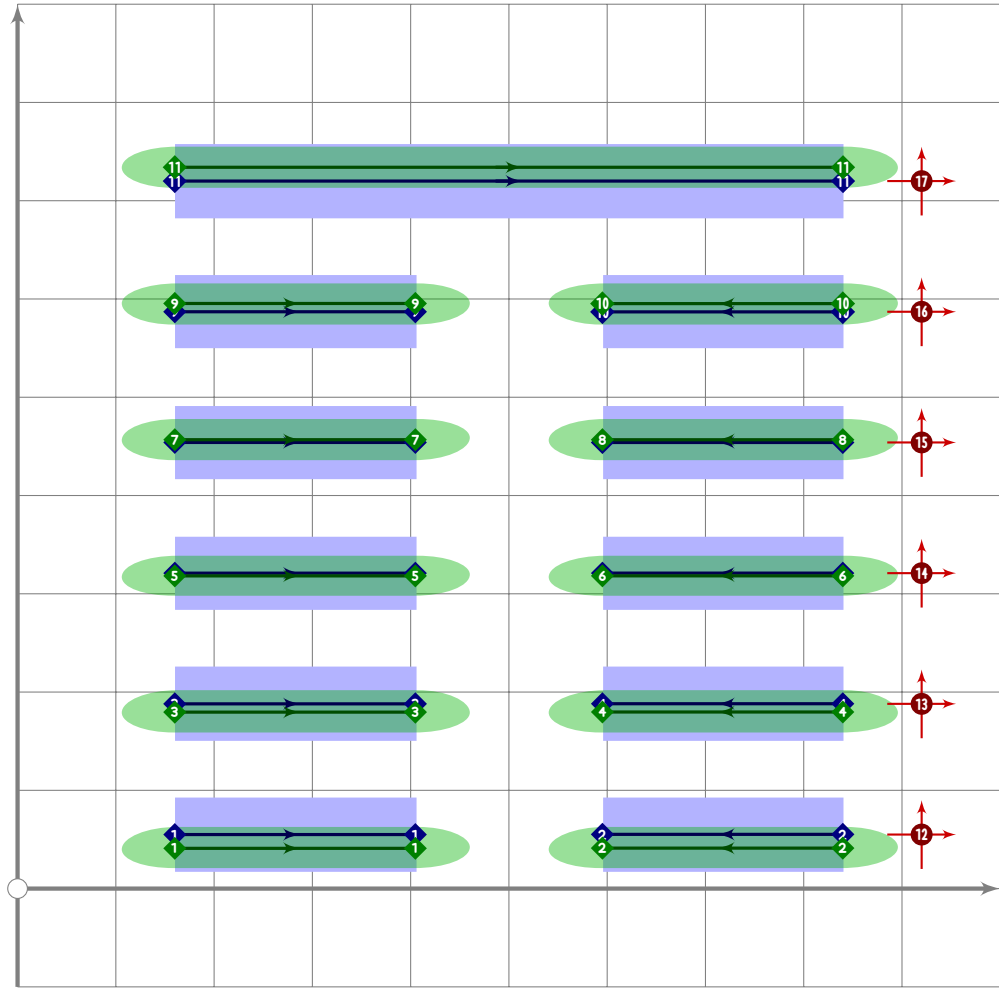
81 make_hexagram(21,1,0,0,1,0,1);



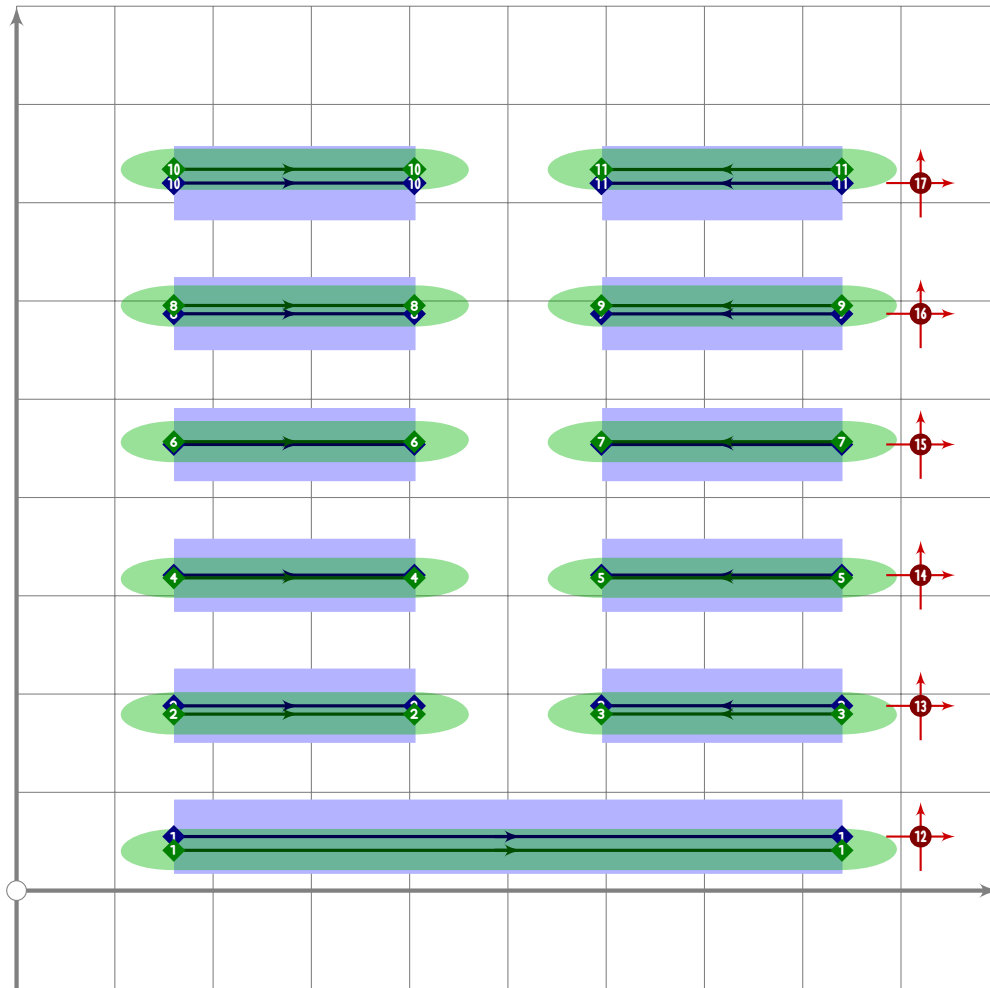
82 make_hexagram(22,1,0,1,0,0,1);

4D

4D



83 make_hexagram(23,0,0,0,0,1);

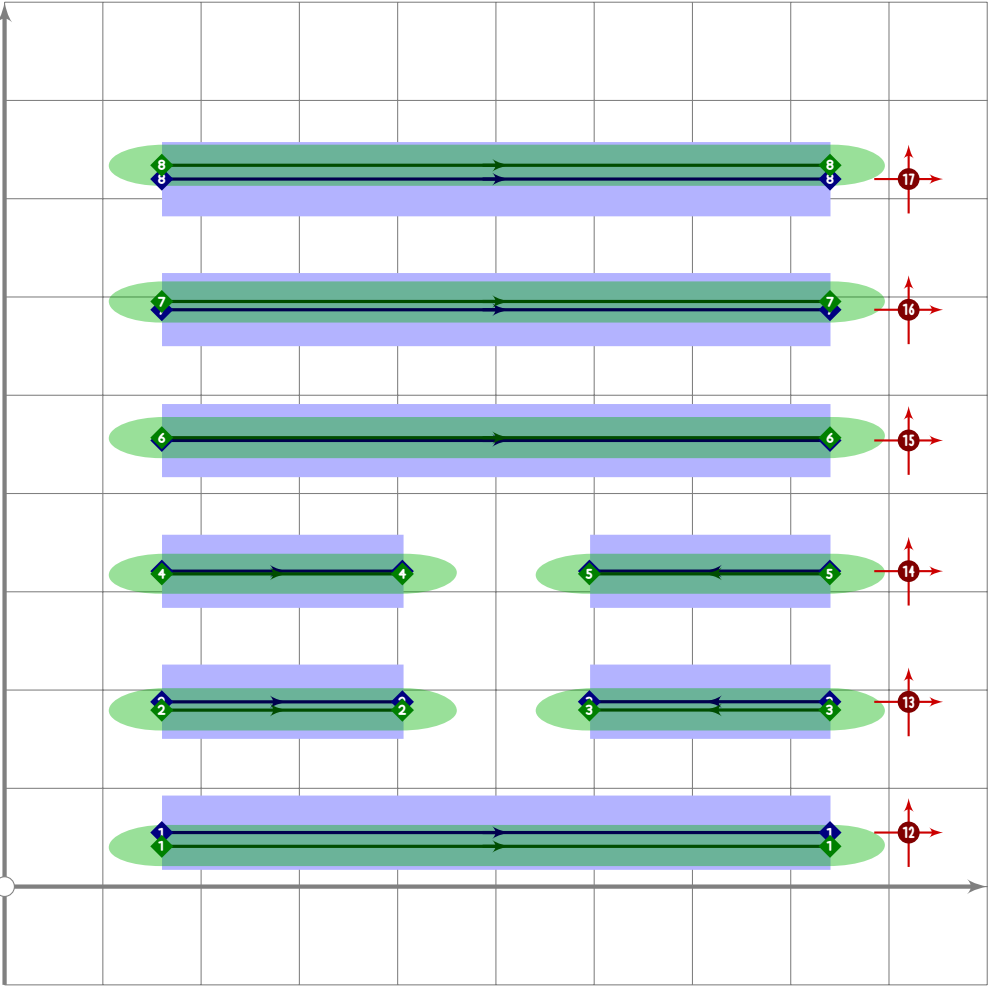


84 make_hexagram(24,1,0,0,0,0);

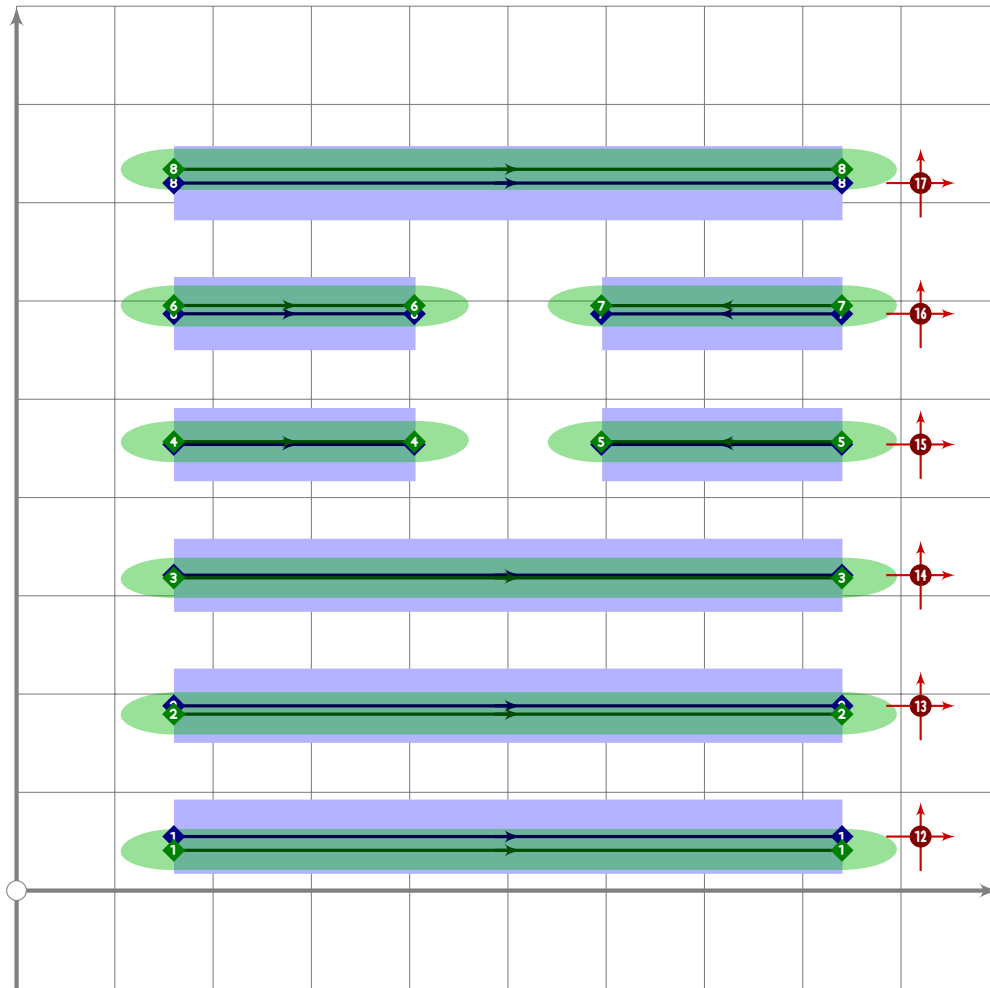
4D

U+4DD8
tsuku.iching25

4D



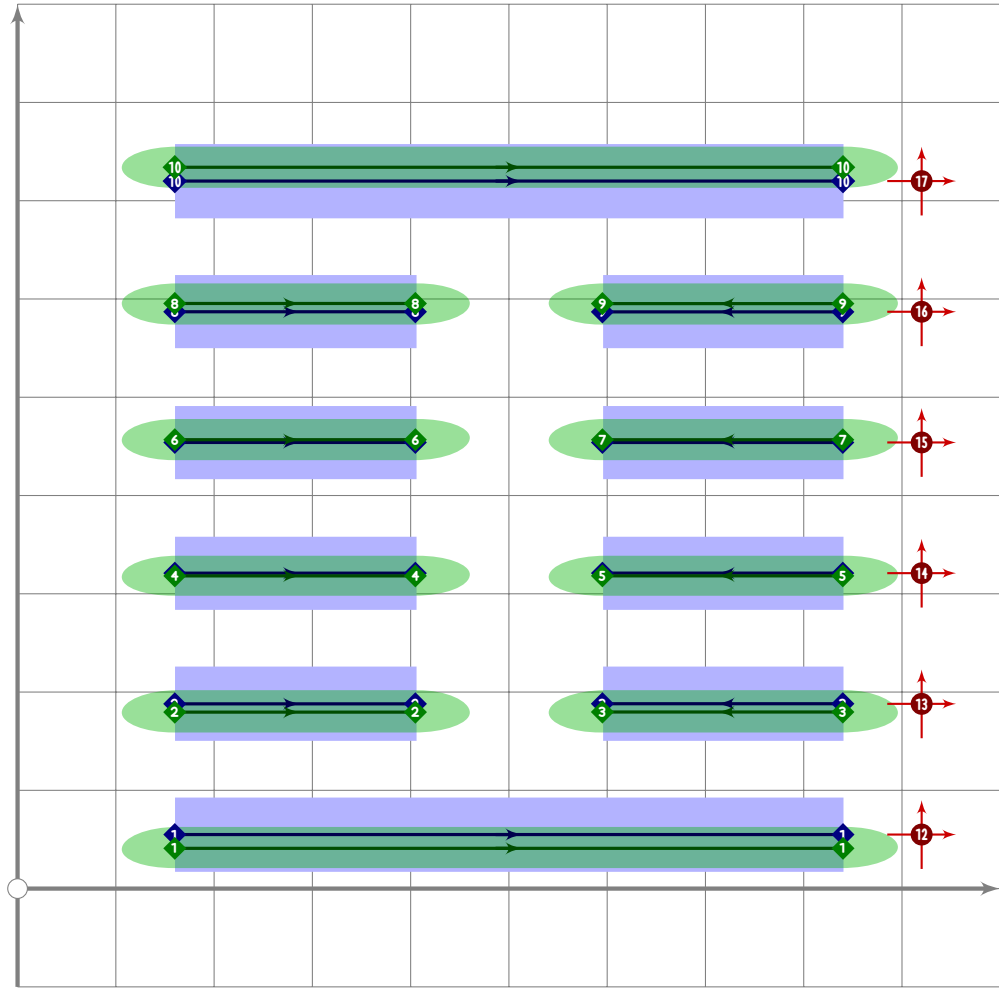
85 make_hexagram(25,1,0,0,1,1,1);



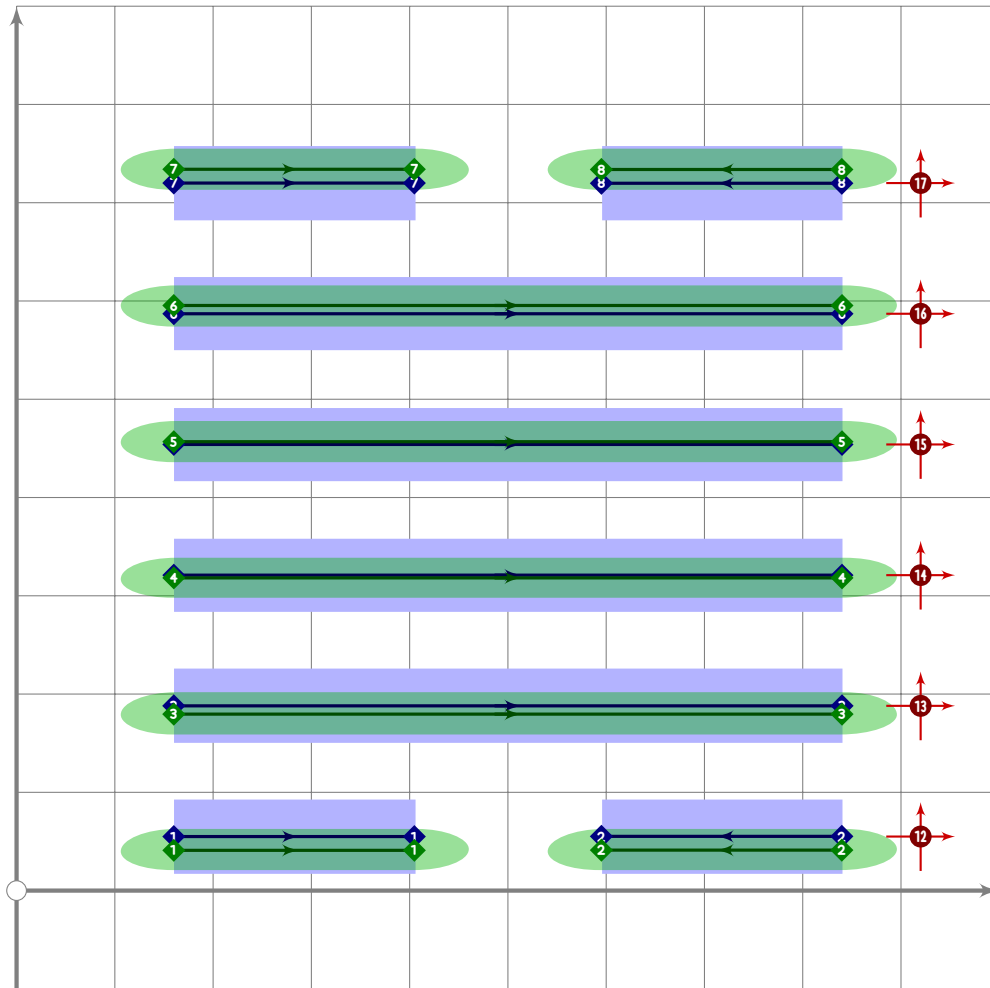
86 make_hexagram(26,1,1,1,0,0,1);

4D

4D



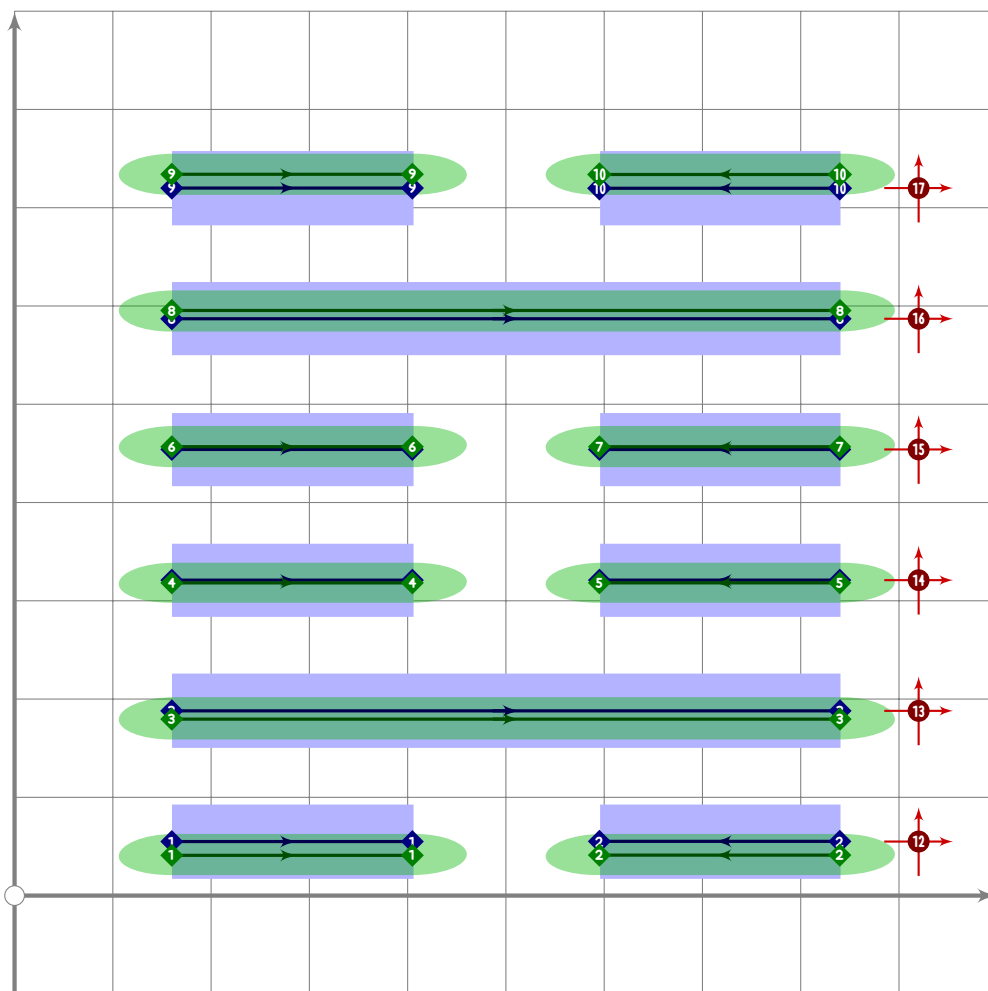
87 make_hexagram(27,1,0,0,0,1);



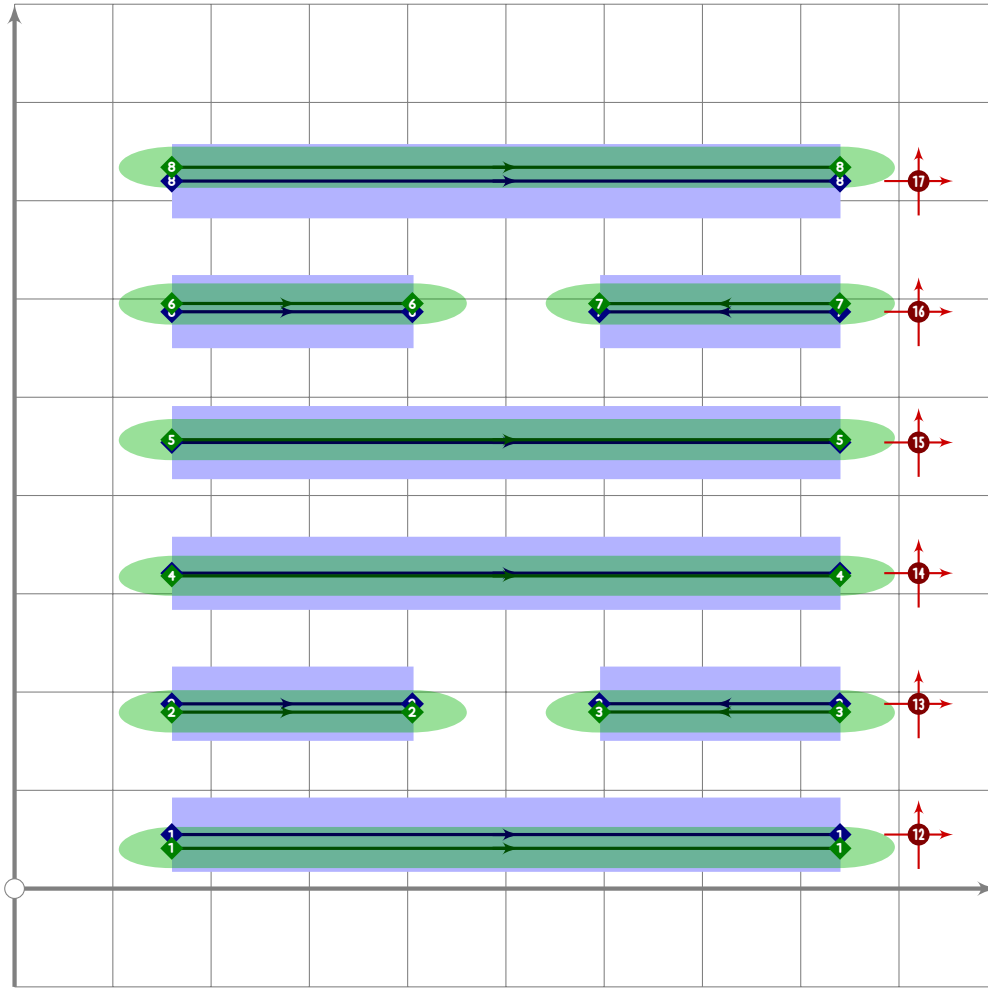
```
88 make_hexagram(28,0,1,1,1,0);
```

4D

4D



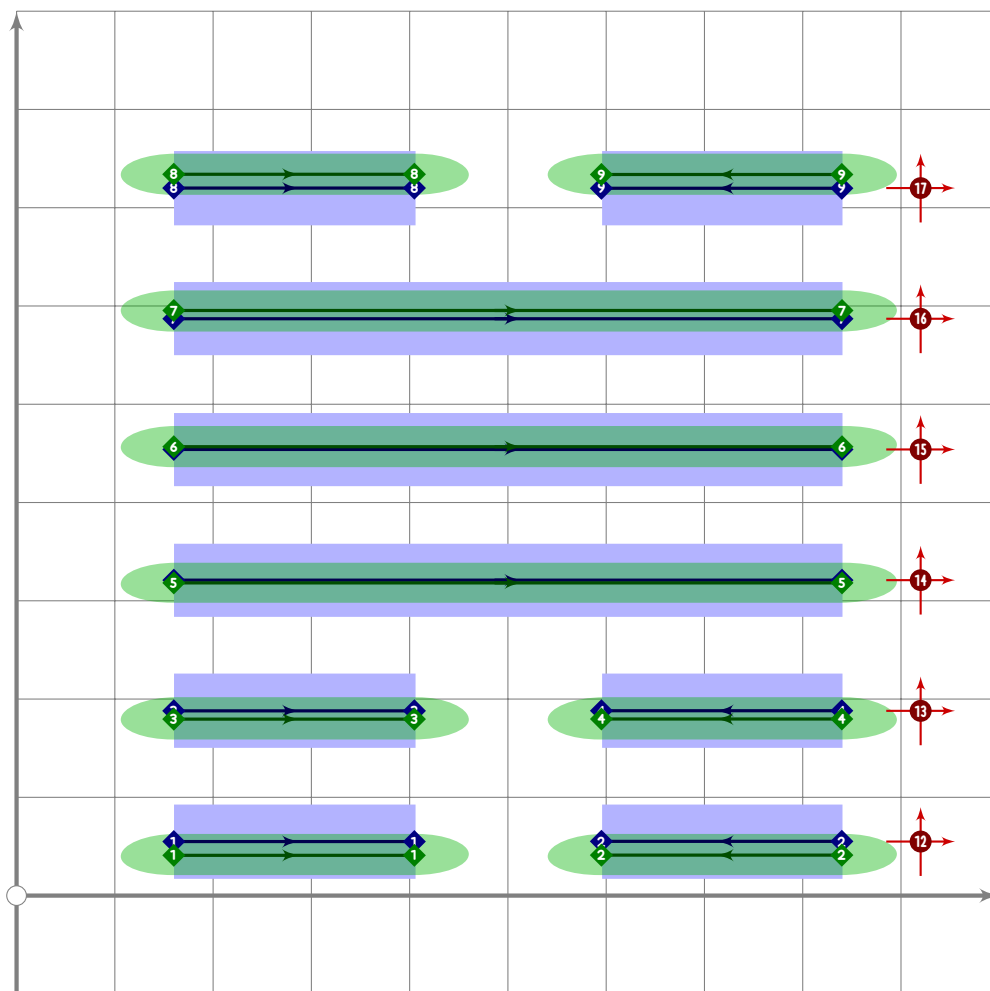
```
89 make_hexagram(29,0,1,0,0,1,0);
```



90 make_hexagram(30,1,0,1,1,0,1);

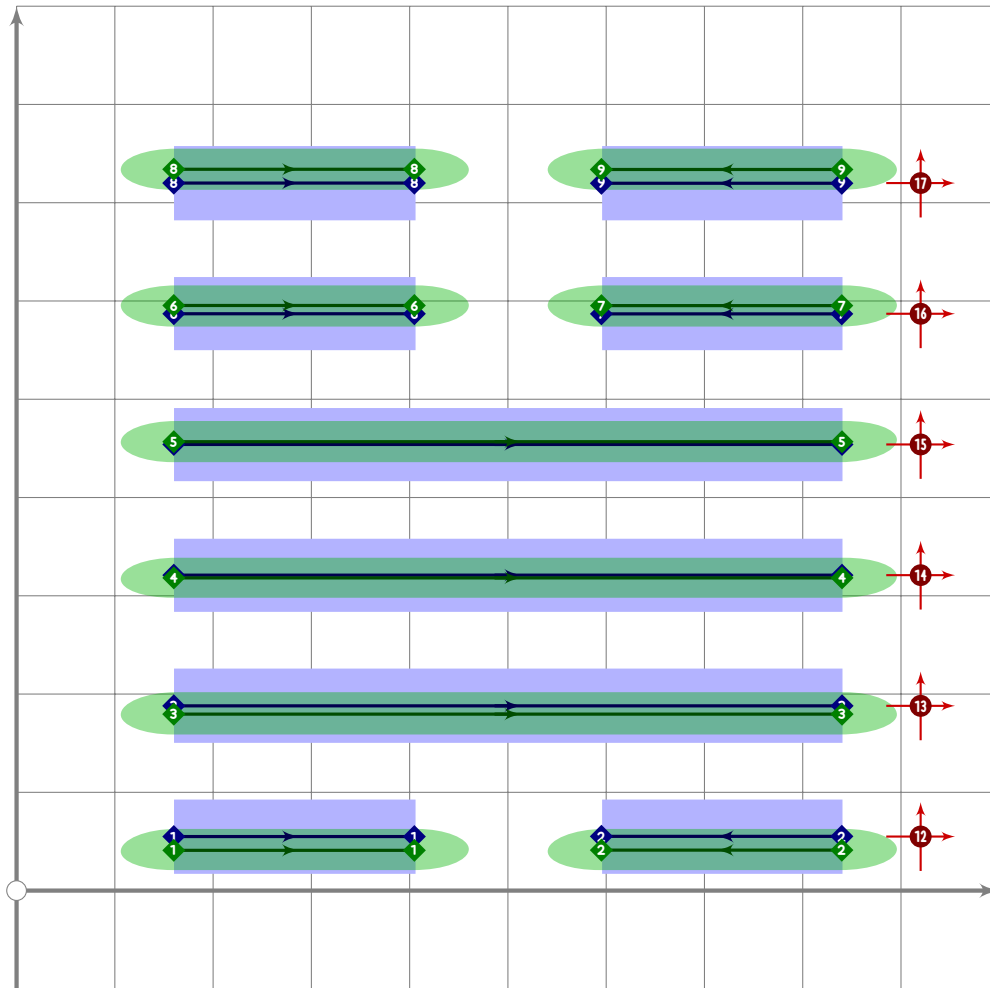
4D

U+4DDE
tsuku.iching31



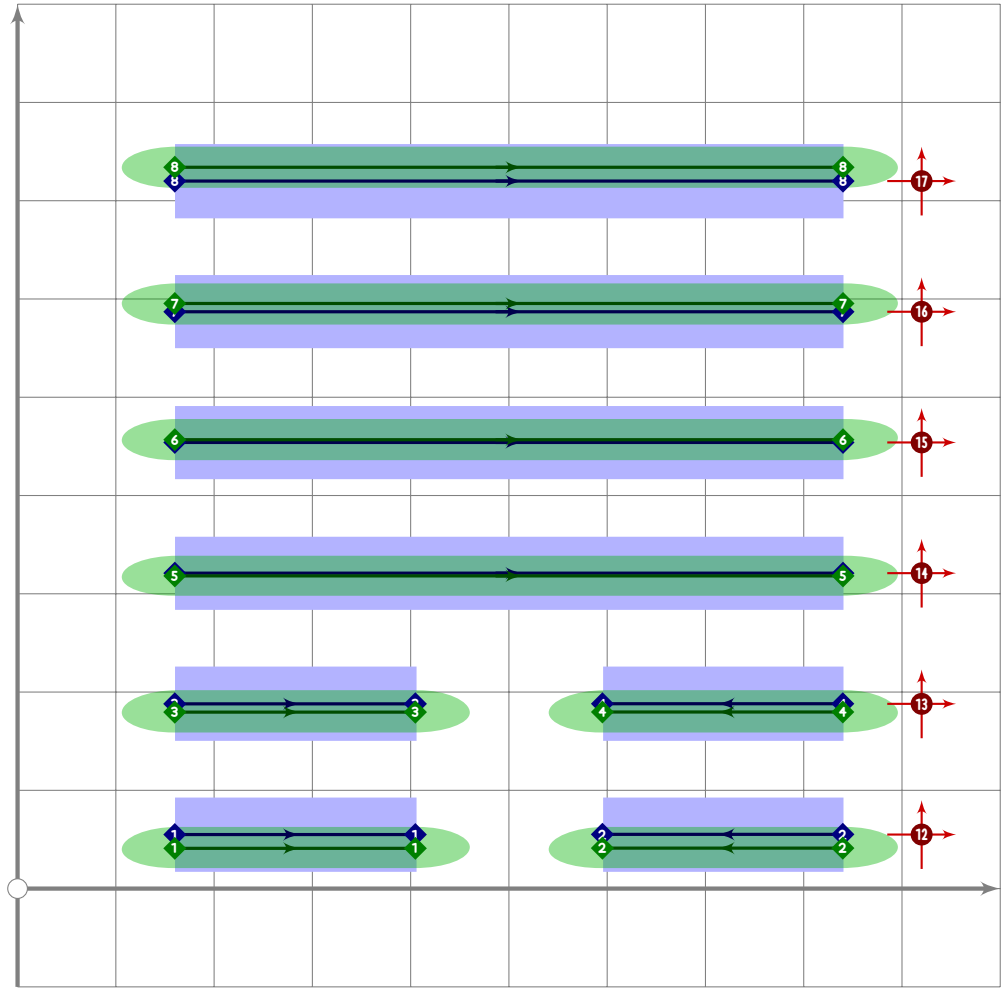
4D

```
91 make_hexagram(31,0,0,1,1,0);
```

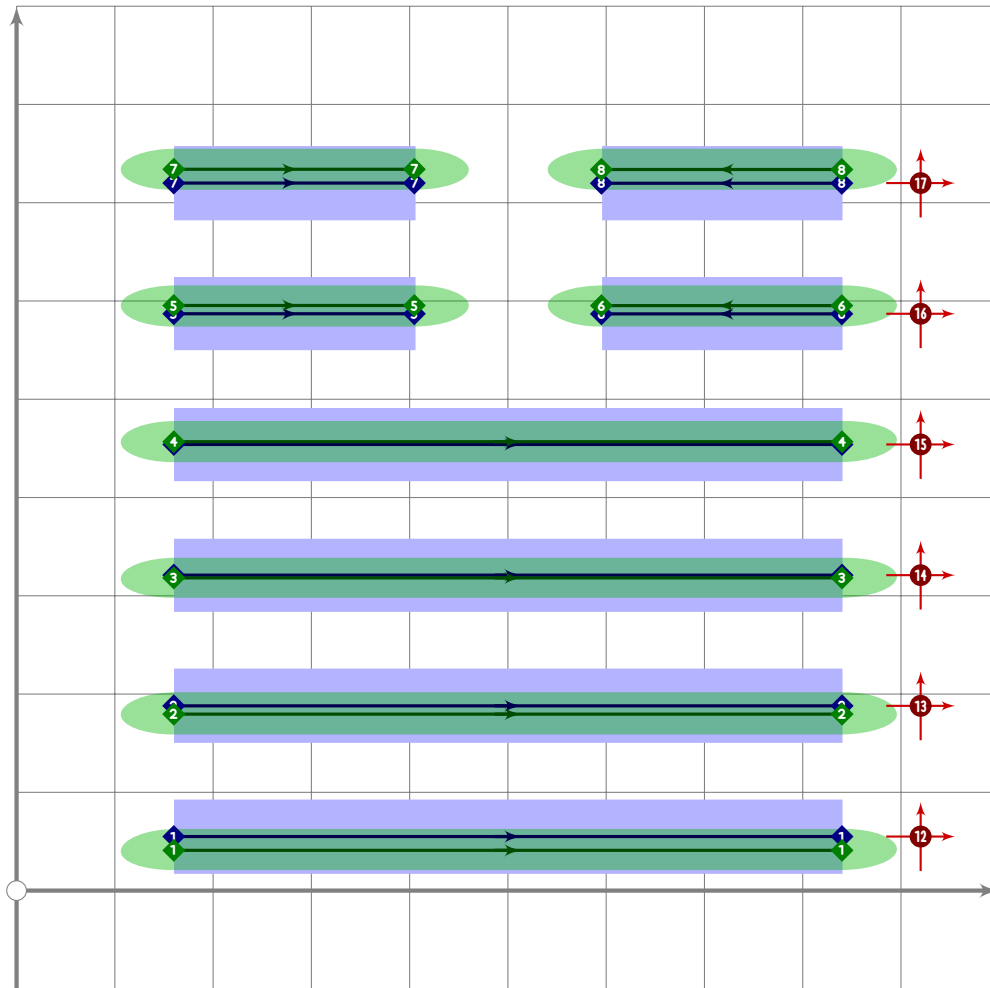


1671

4D



```
93  
94 make_hexagram(33,0,0,1,1,1,1);
```

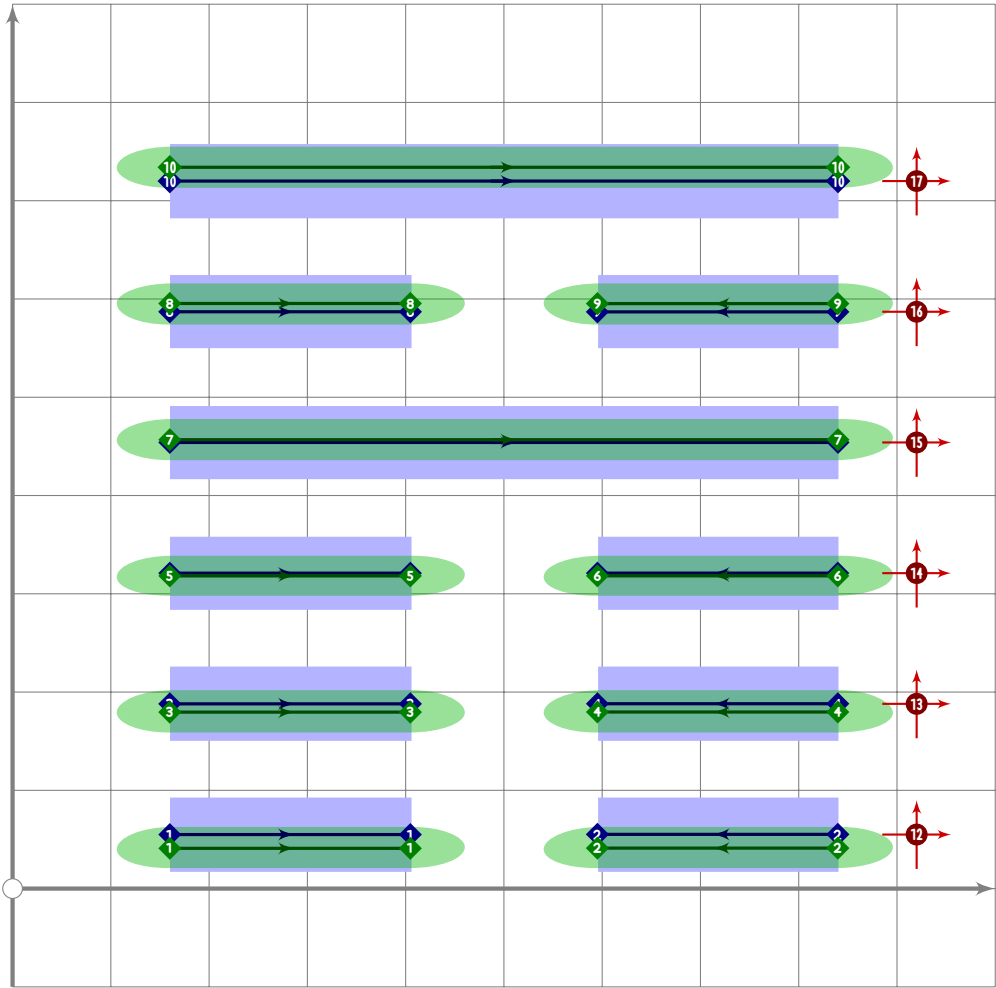



95 make_hexagram(34,1,1,1,1,0,0);

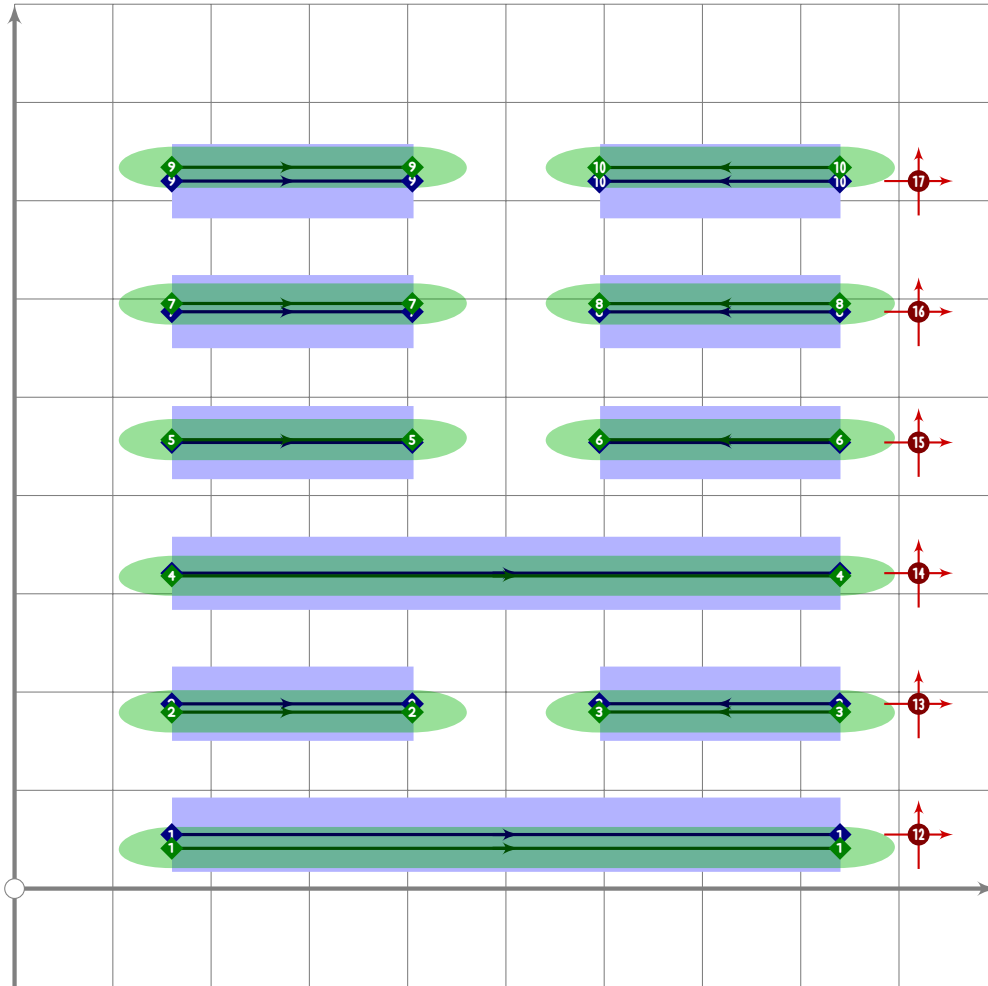
4D

U+4DE2
tsuku.iching35

4D



% make_hexagram(35,0,0,0,1,0,1);

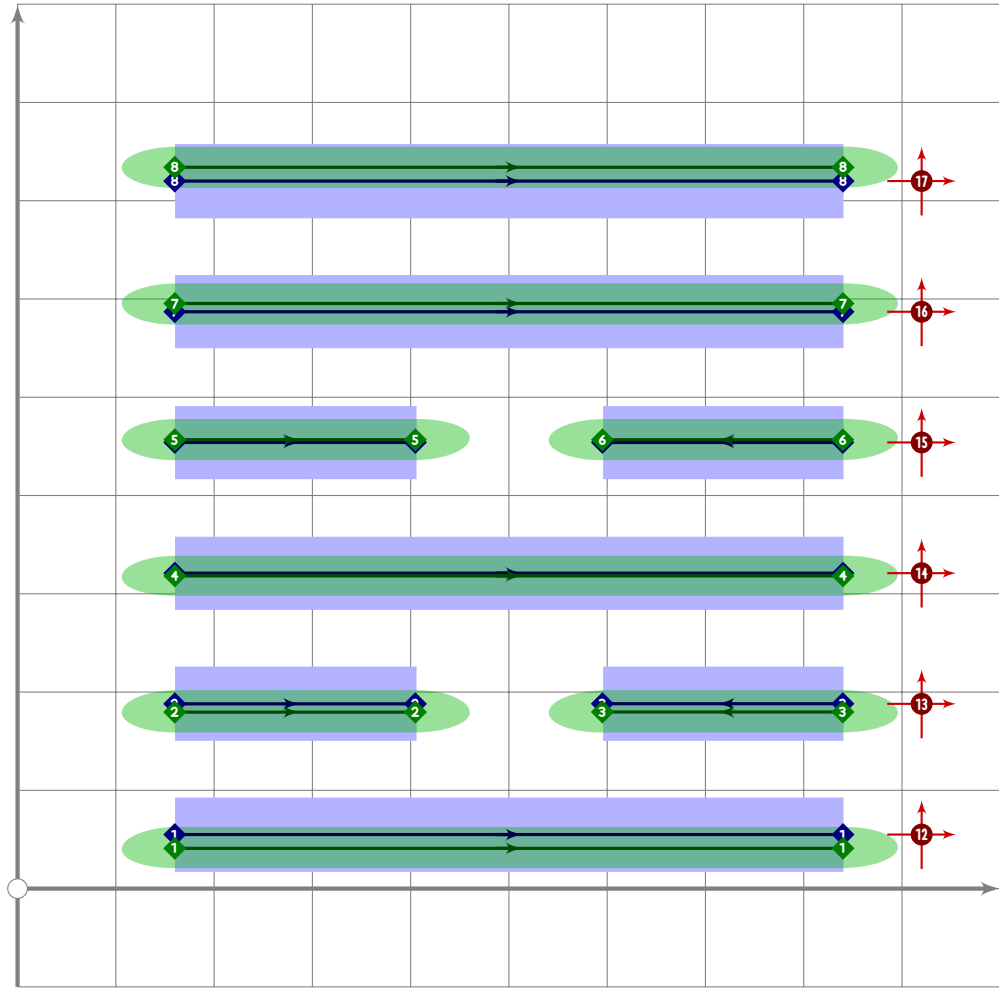


97 make_hexagram(36,1,0,1,0,0,0);

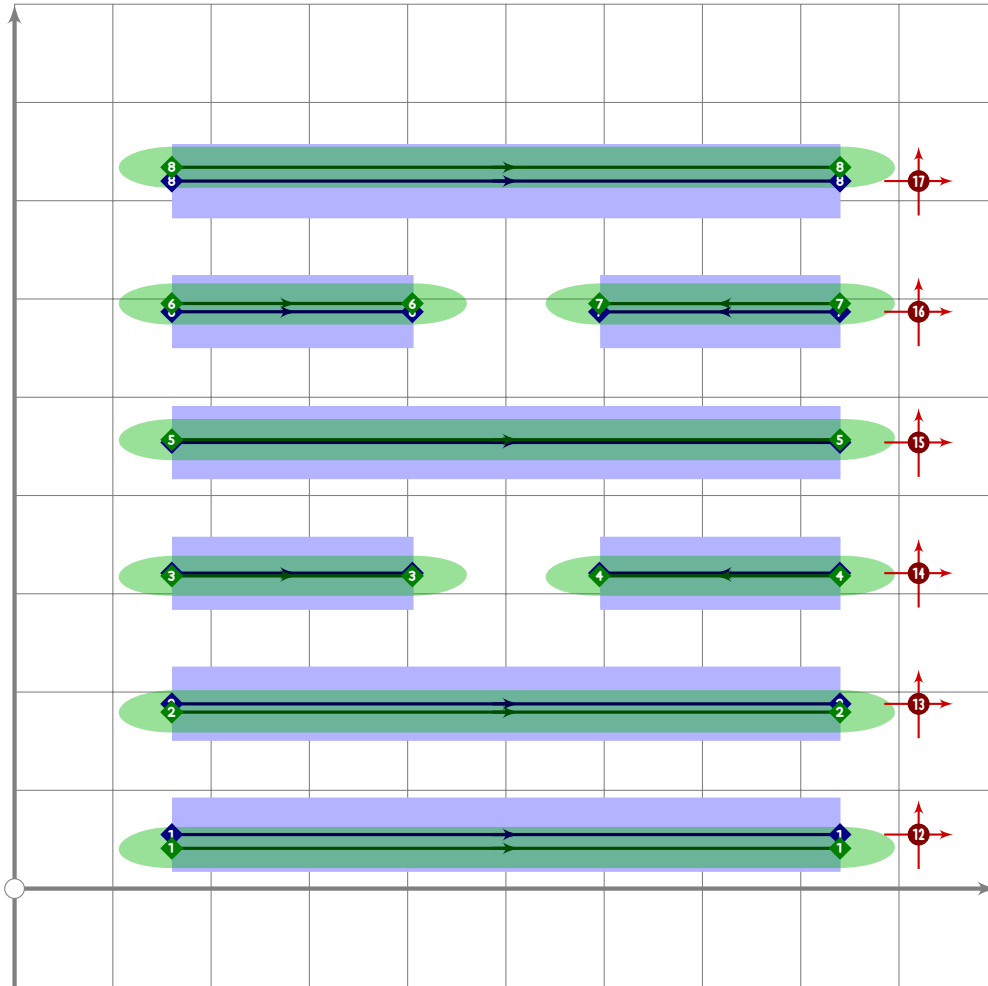
4D

U+4DE4
tsuku.iching37

4D



98 make_hexagram(37,1,0,1,0,1,1);

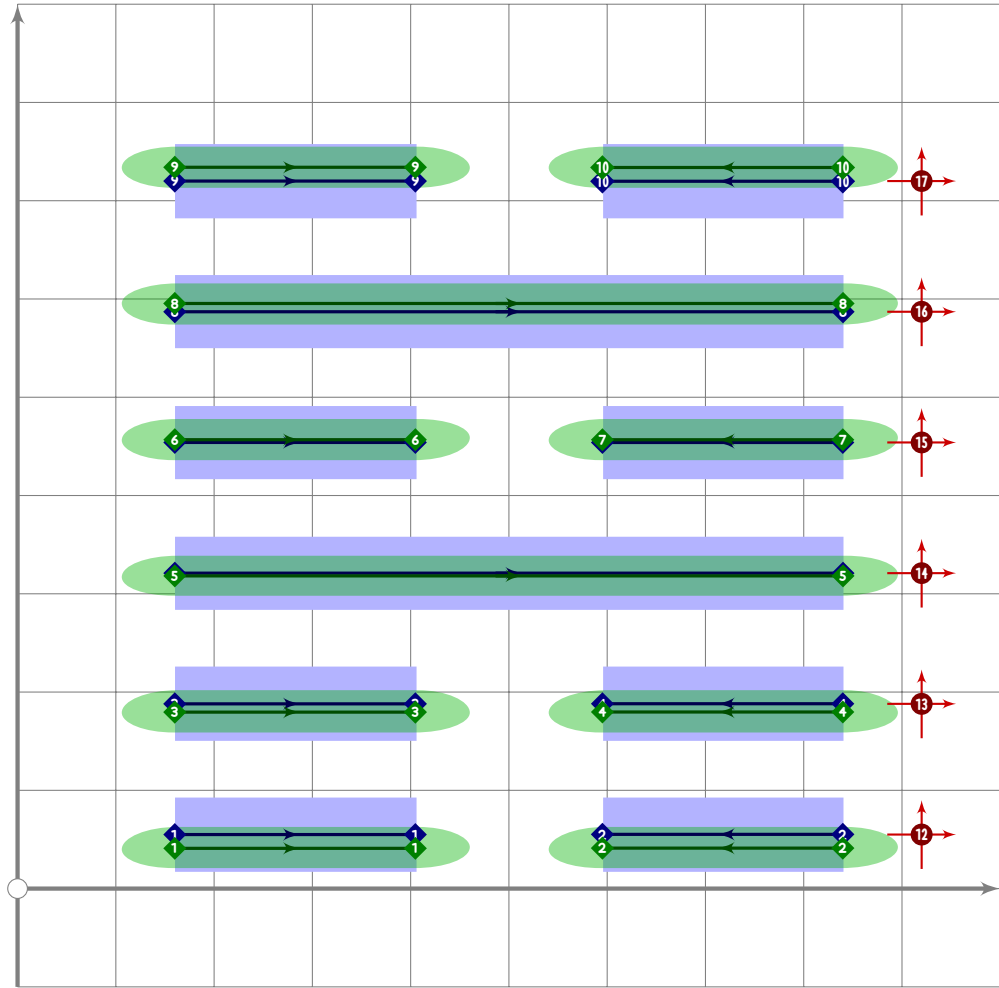


99 make_hexagram(38,1,1,0,1,0,1);

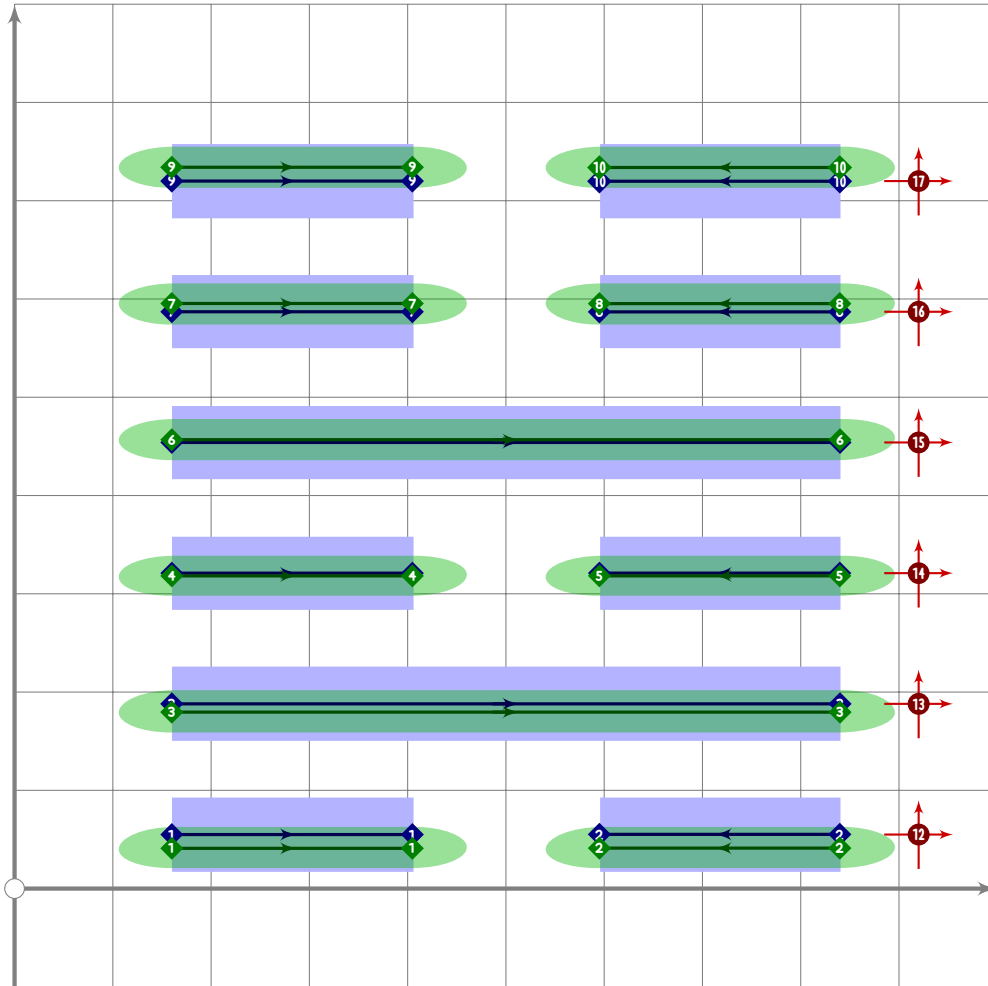
4D

U+4DE6
tsuku.iching39

4D



100 make_hexagram(39,0,0,1,0,1,0);

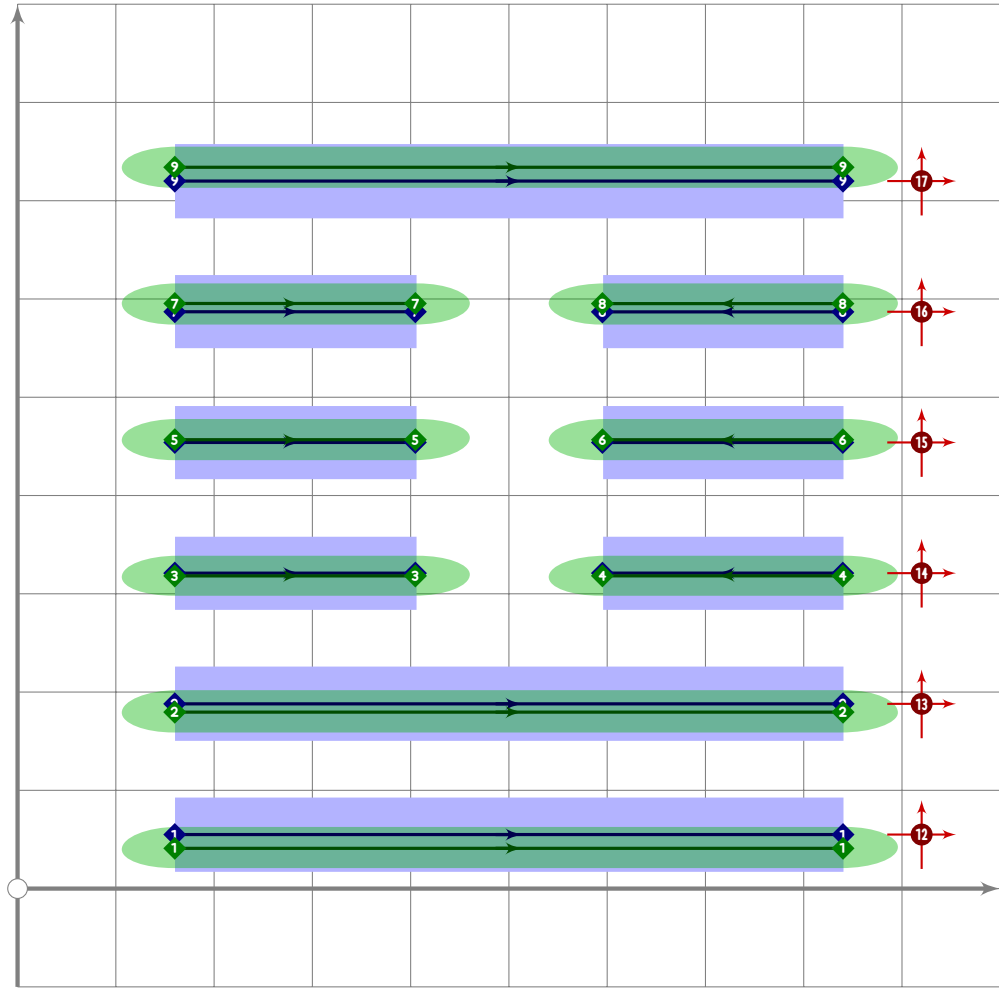


101 make_hexagram(40,0,1,0,1,0,0);

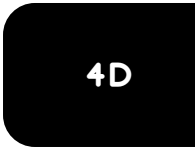
4D

U+4DE8
tsuku.iching41

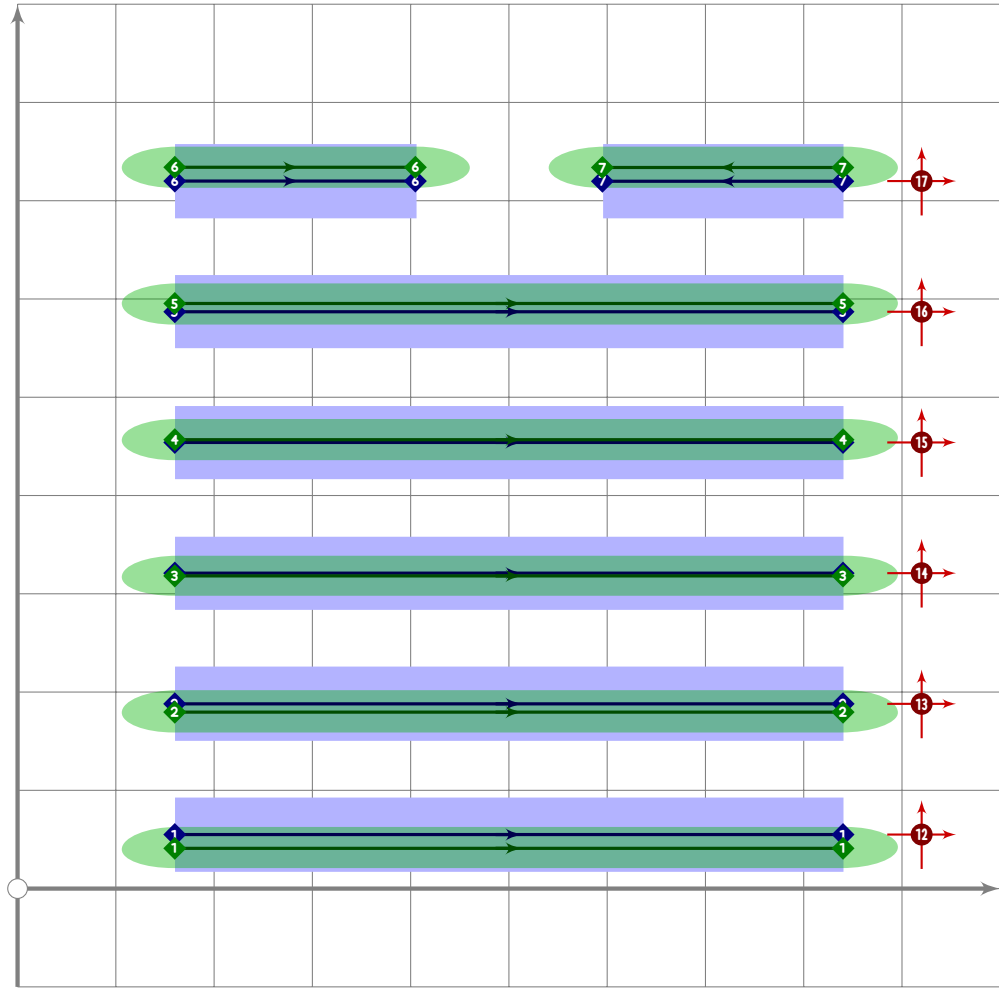
4D



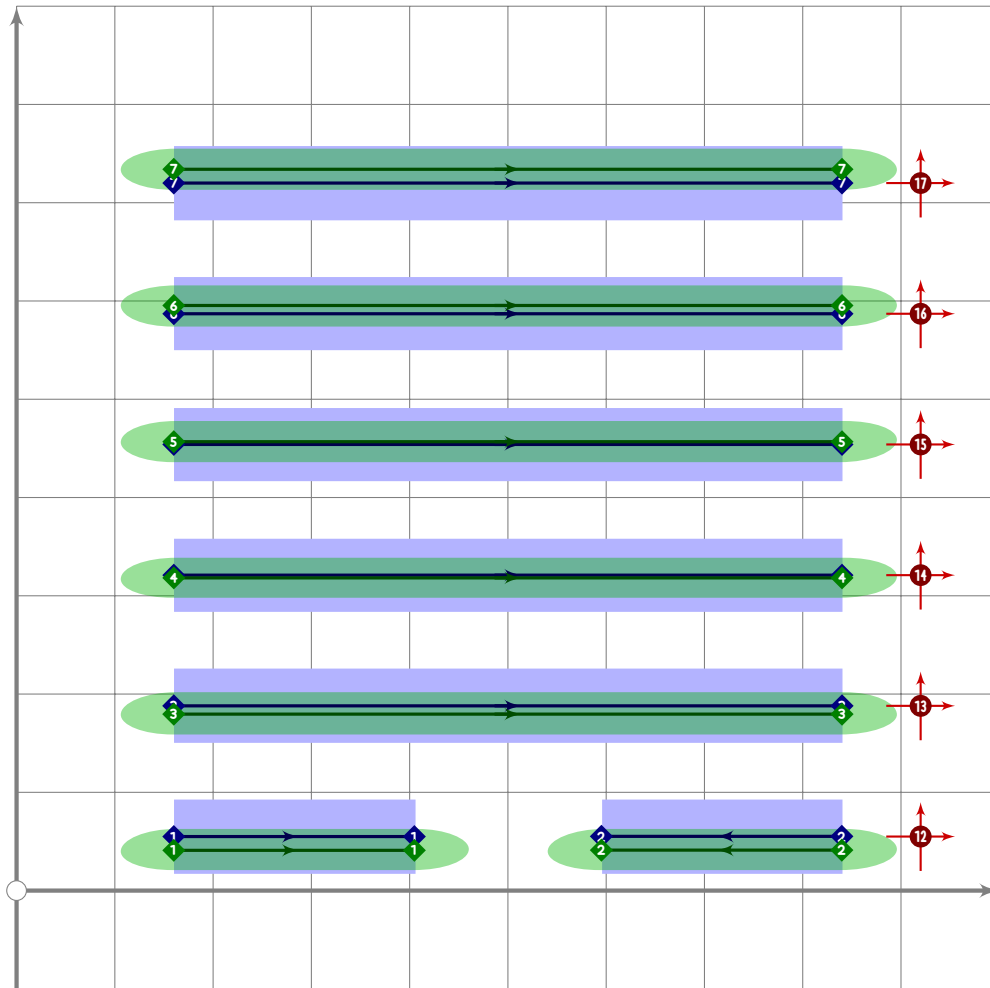
102 make_hexagram(41,1,1,0,0,1);



4D



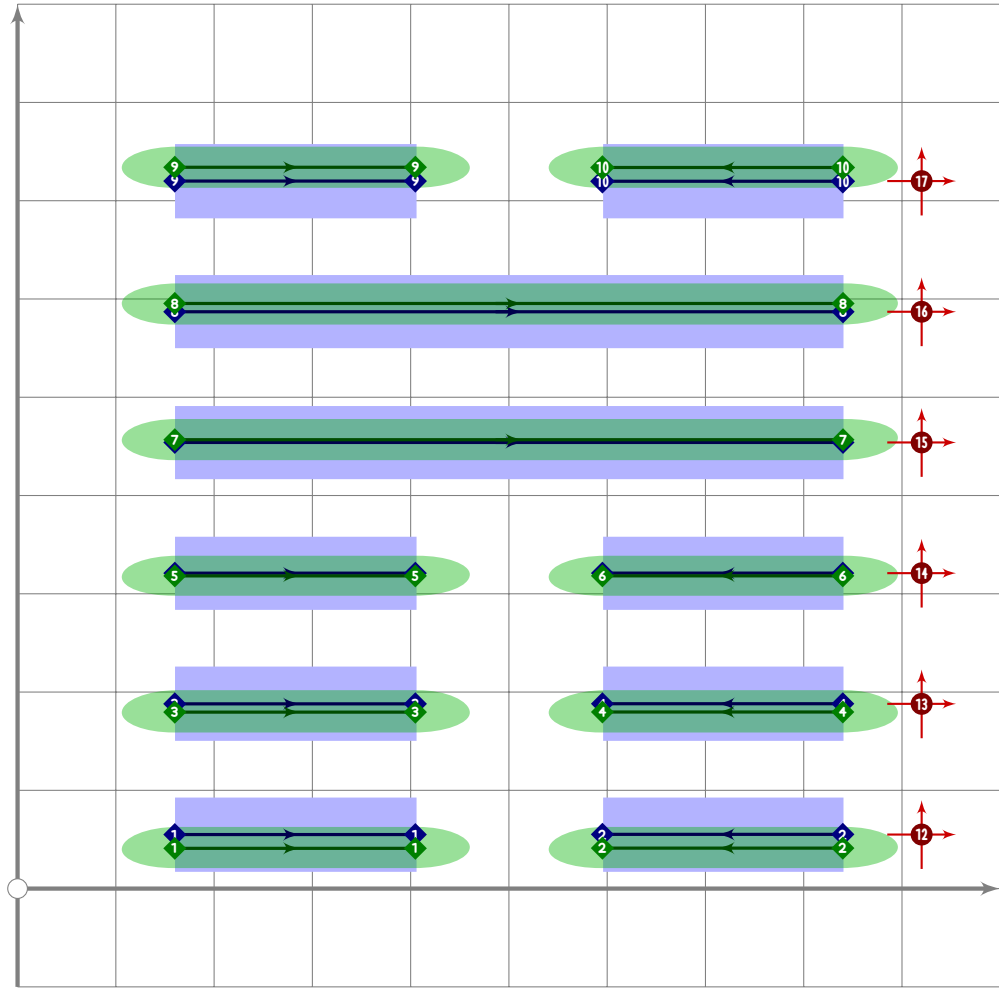
104 make_hexagram(43,1,1,1,1,0);



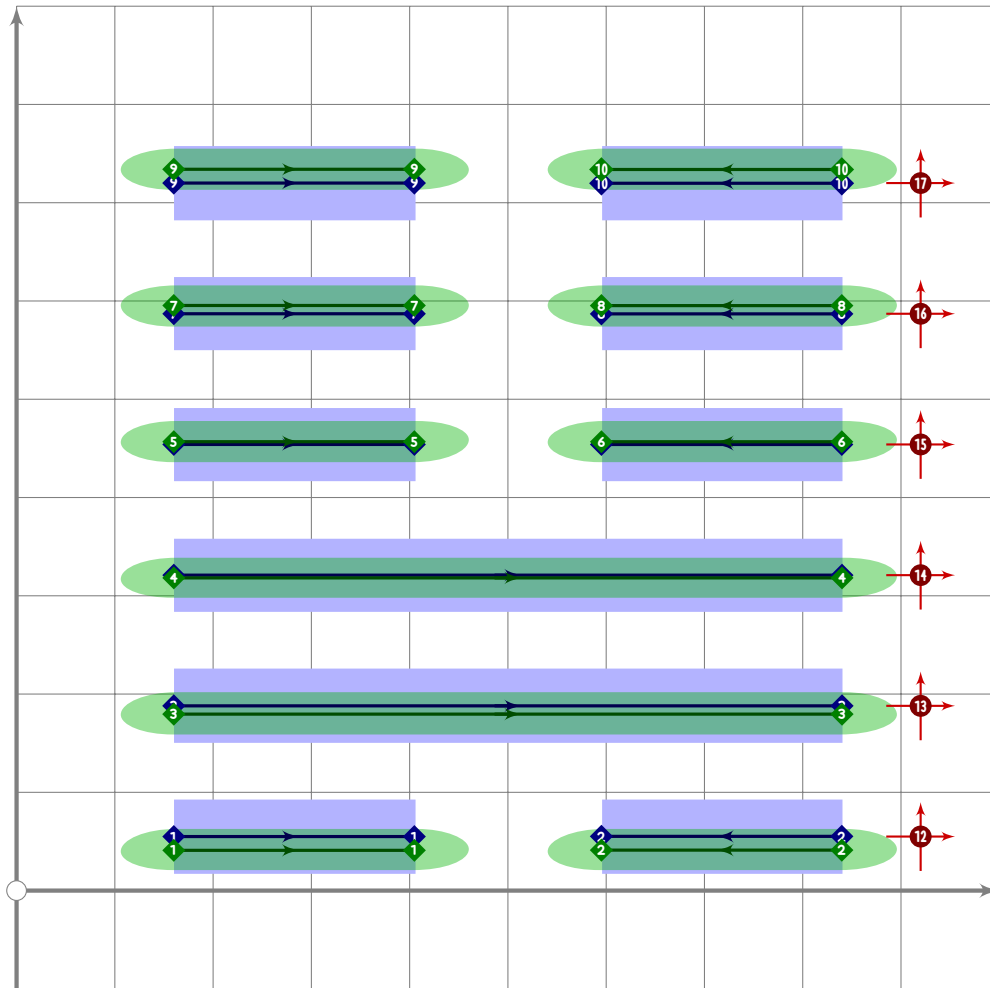
105 make_hexagram(44,0,1,1,1,1);

4D

4D



```
106 make_hexagram(45,0,0,0,1,1,0);
```

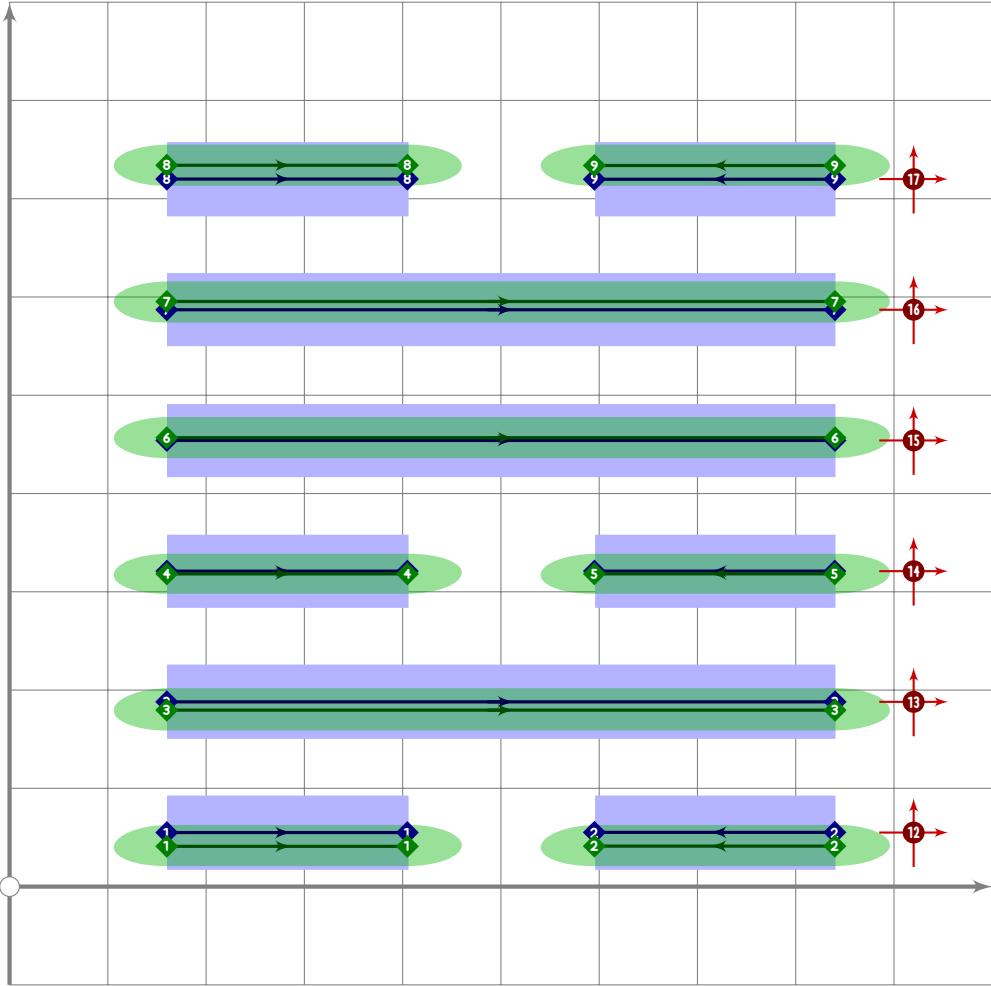


107 make_hexagram(46,0,1,1,0,0,0);

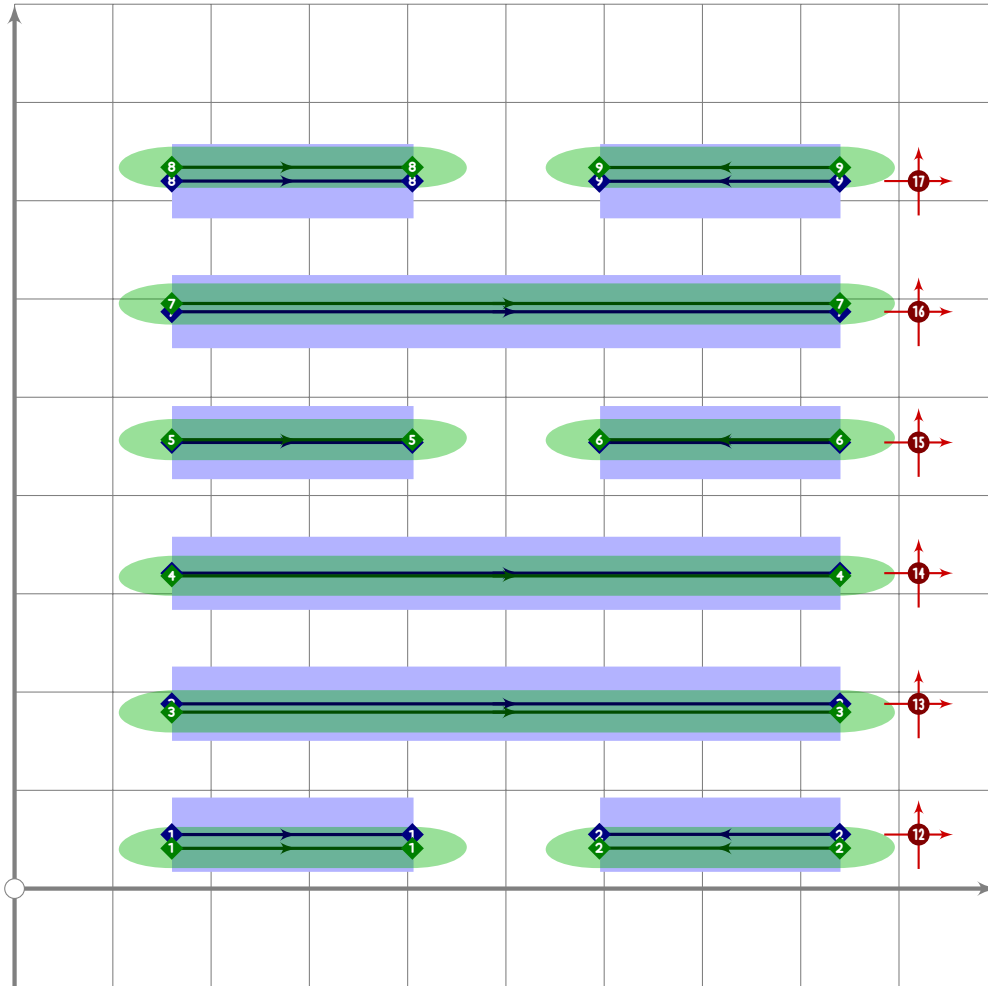
4D

U+4DEE
tsuku.iching47

4D



108 make_hexagram(47,0,1,0,1,1,0);

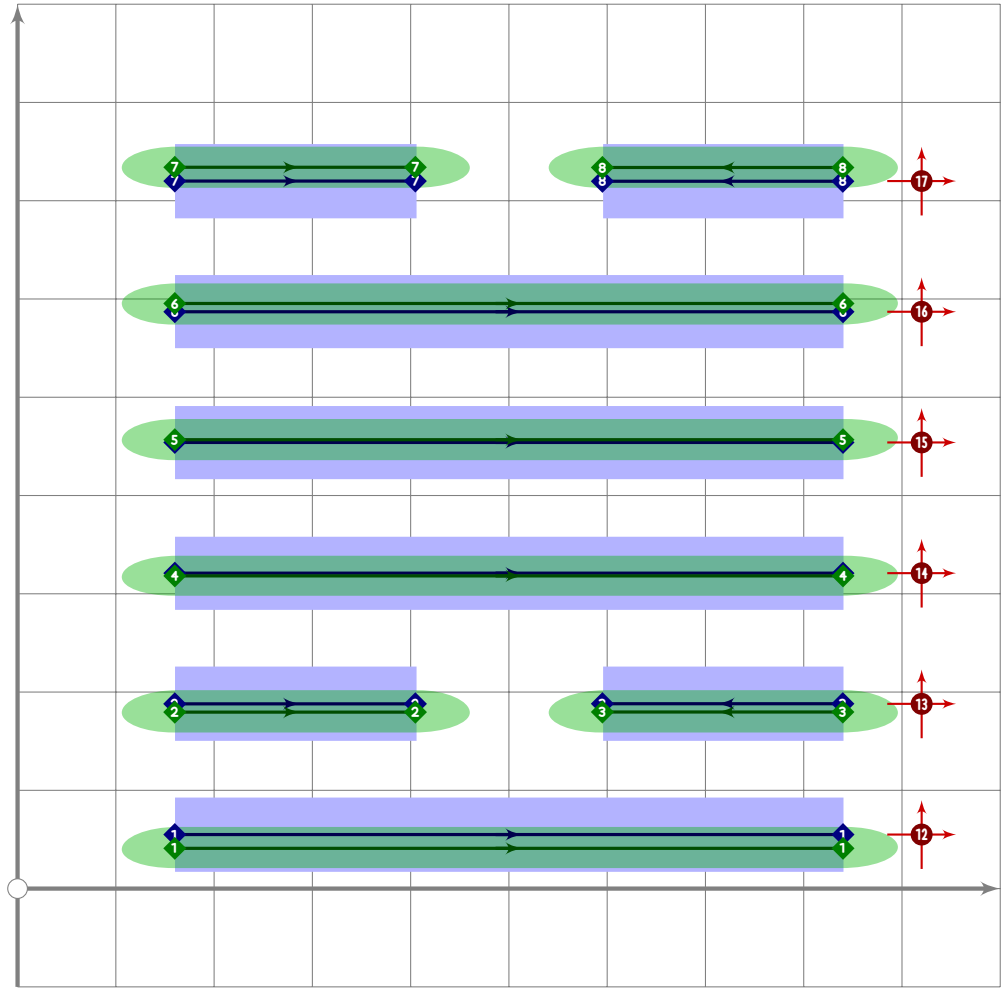


109 make_hexagram(48,0,1,1,0,1,0);

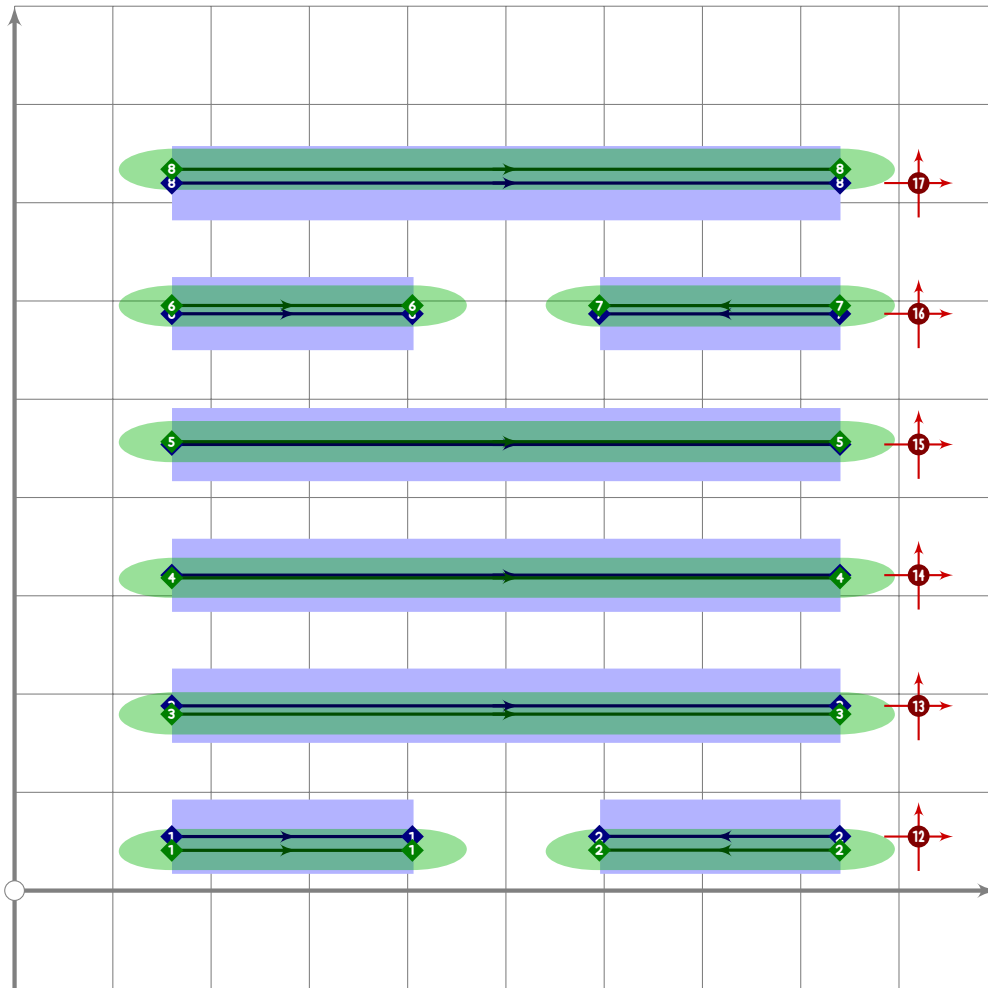
4D

U+4DF0
tsuku.iching49

4D



```
110
111 make_hexagram(49,1,0,1,1,0);
```

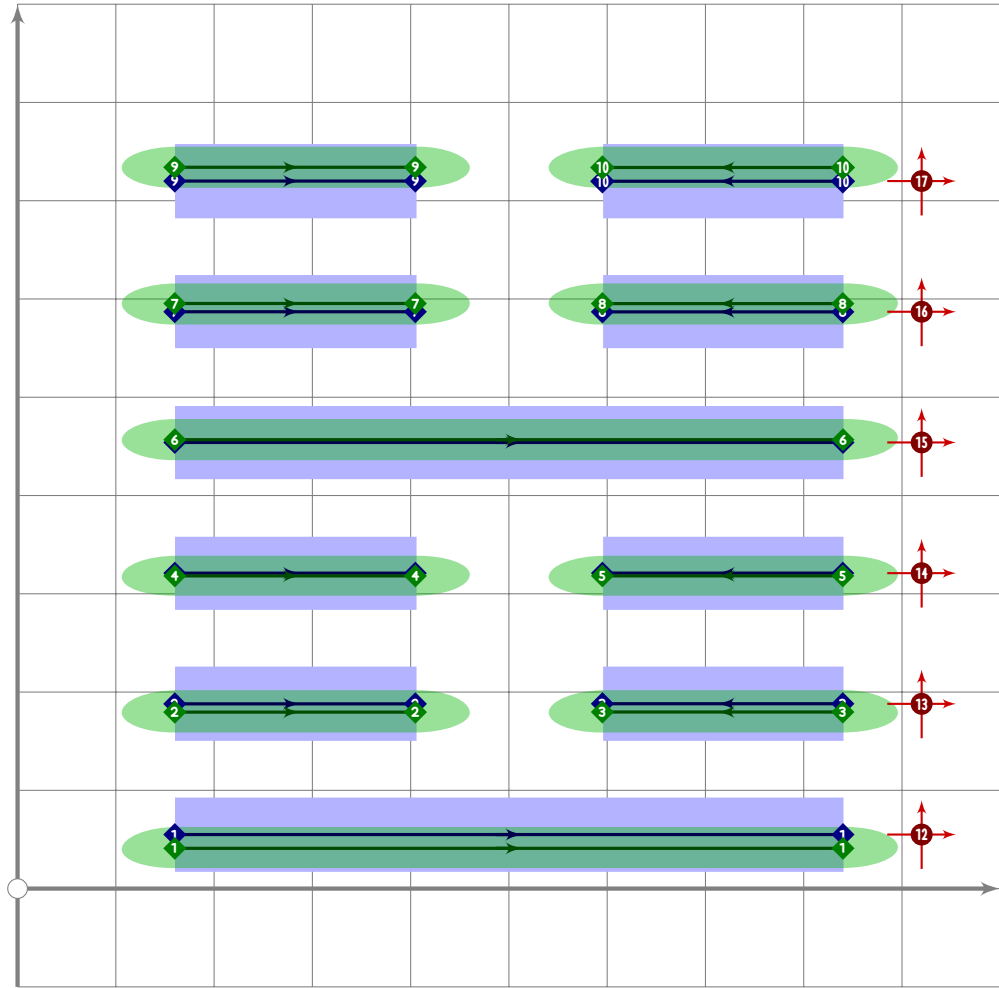



112 make_hexagram(50,0,1,1,1,0,1);

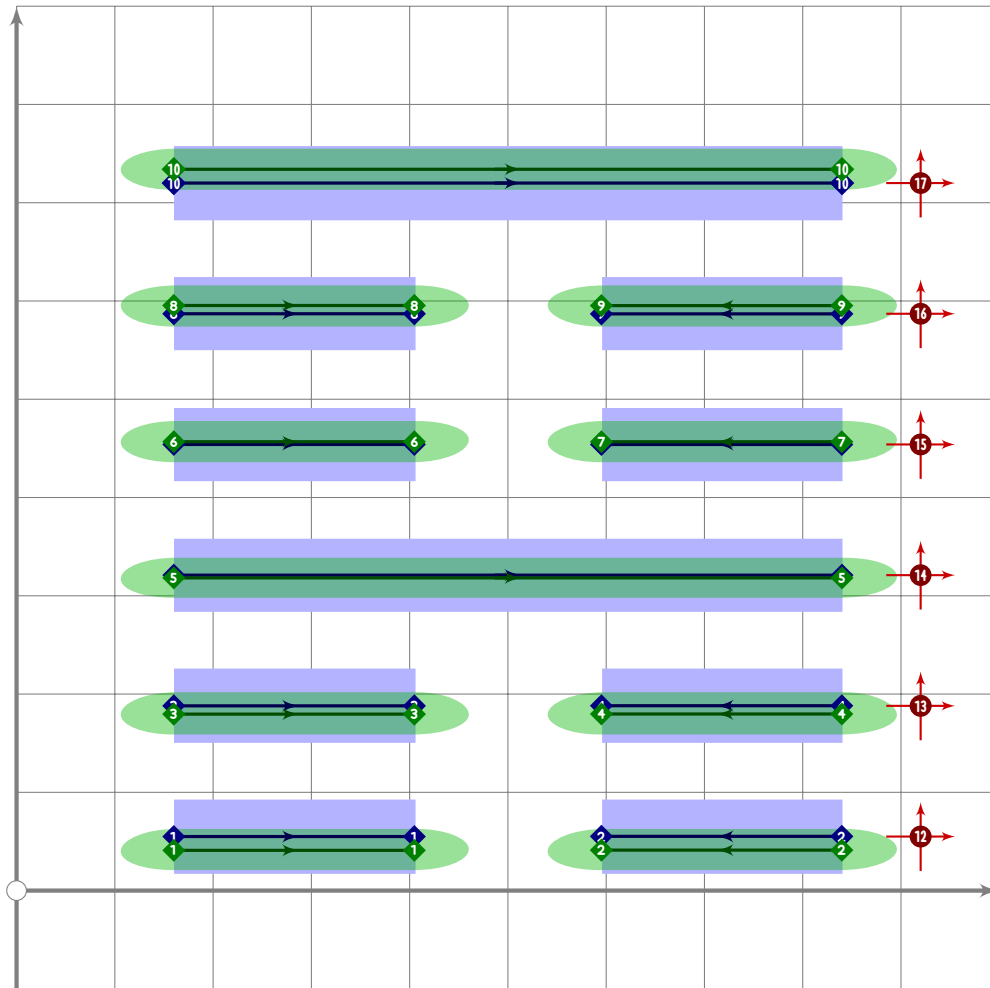
4D

U+4DF2
tsuku.iching51

4D



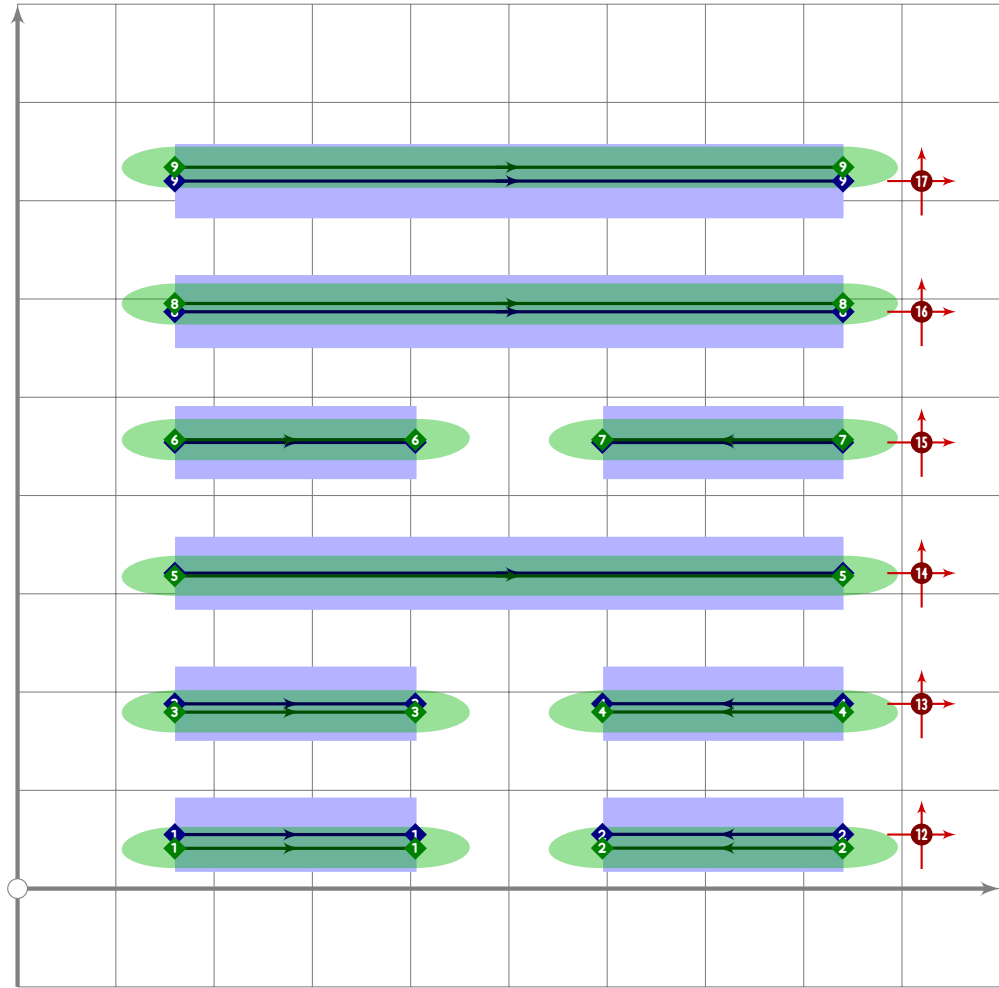
113 make_hexagram(51,1,0,0,1,0,0);



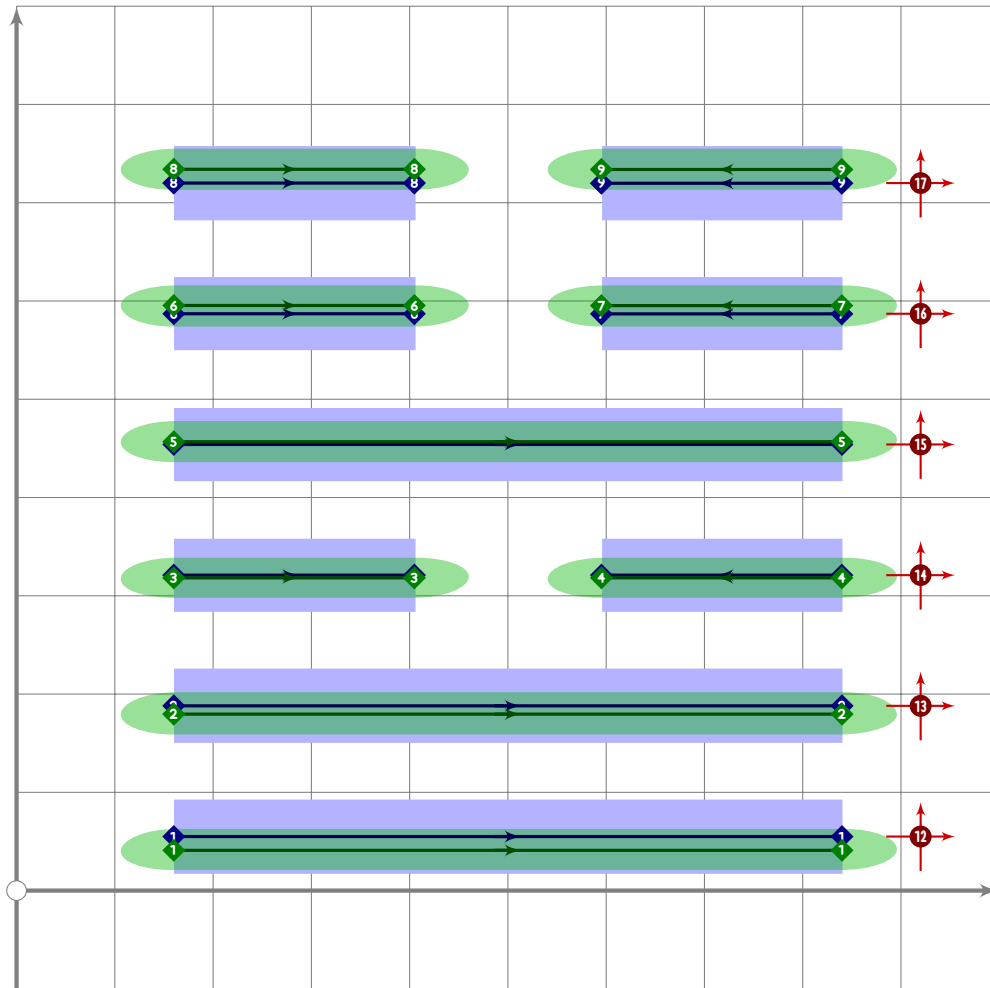
114 make_hexagram(52,0,0,1,0,0,1);

4D

4D



```
115 make_hexagram(53,0,0,1,0,1,1);
```

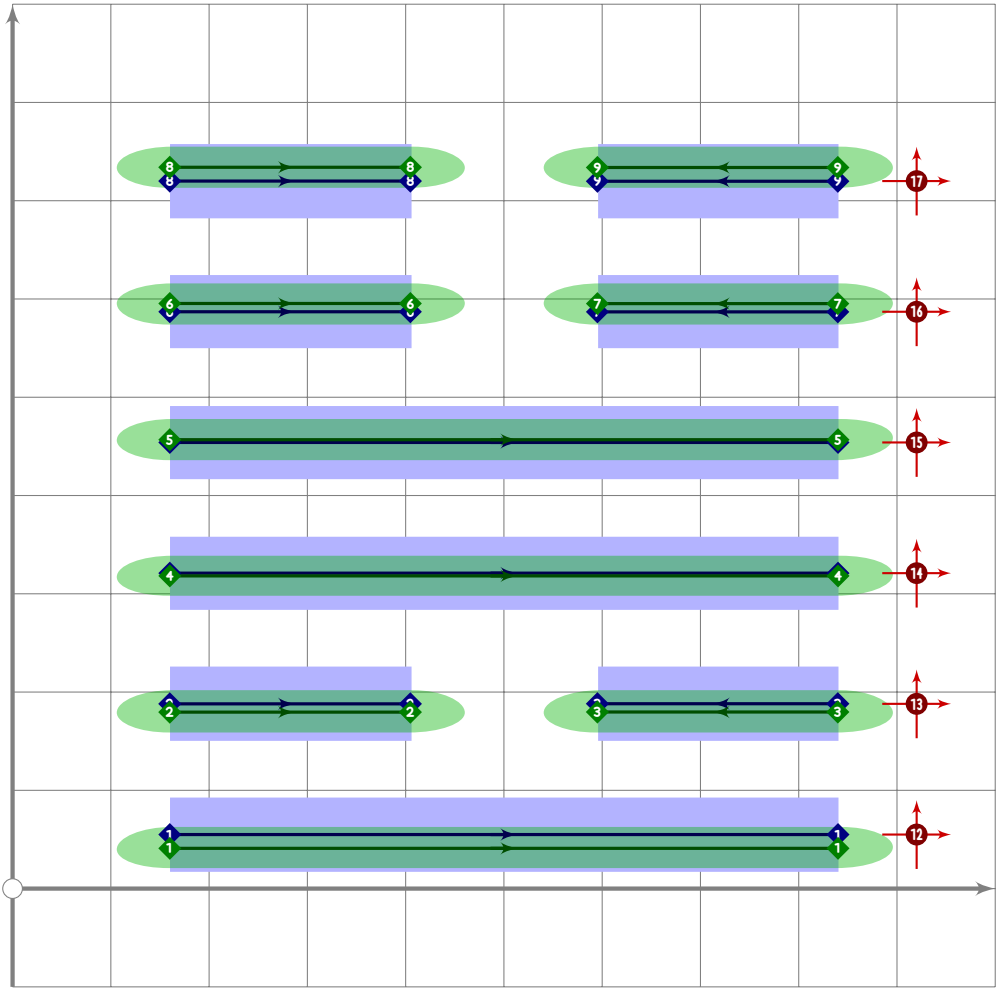


116 make_hexagram(54,1,1,0,1,0,0);

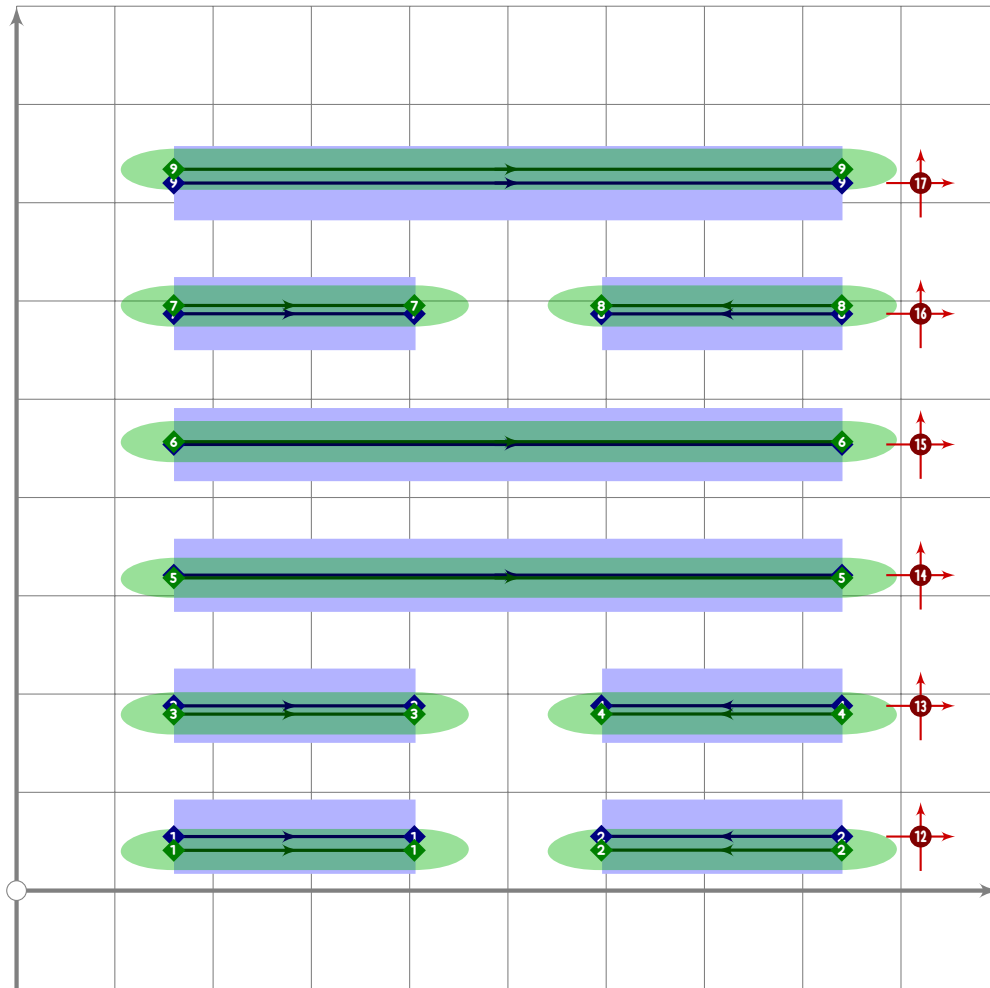
4D

U+4DF6
tsuku.iching55

4D



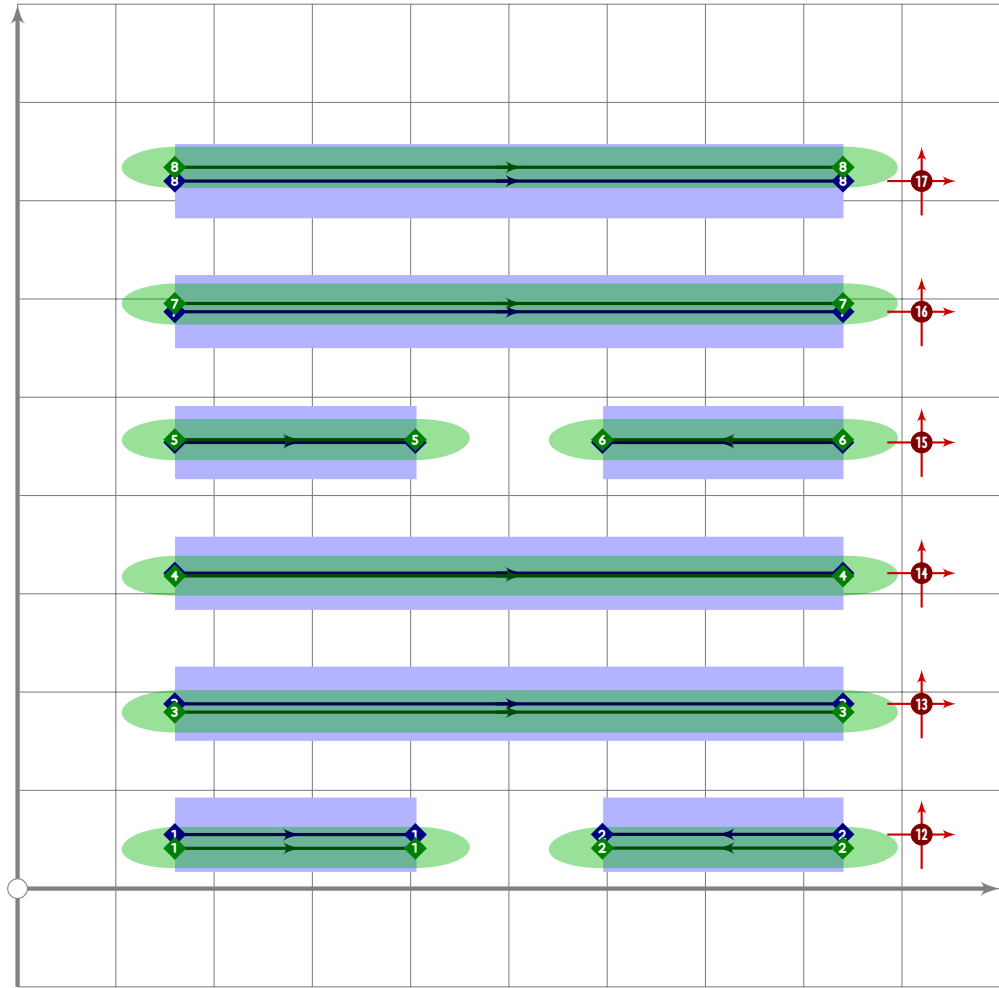
117 make_hexagram(55,1,0,1,1,0,0);



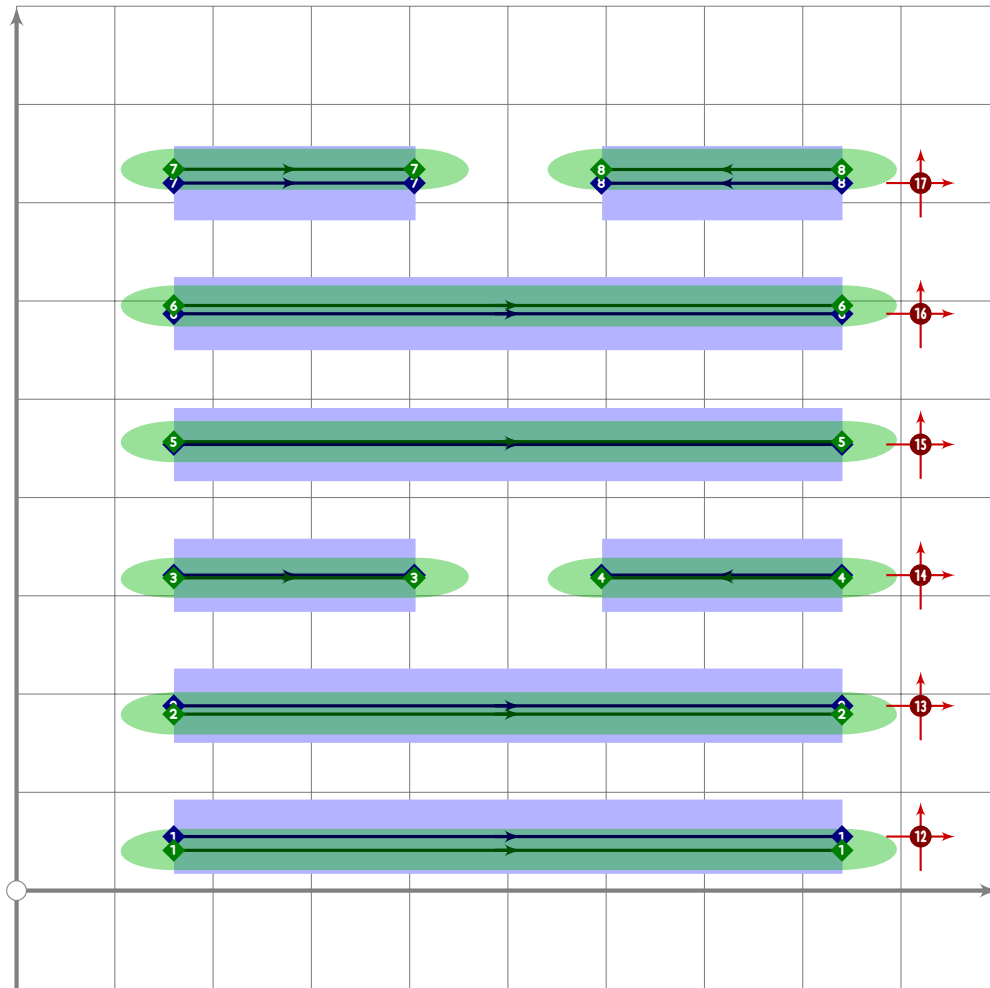
1695

U+4DF8
tsuku.iching57

4D



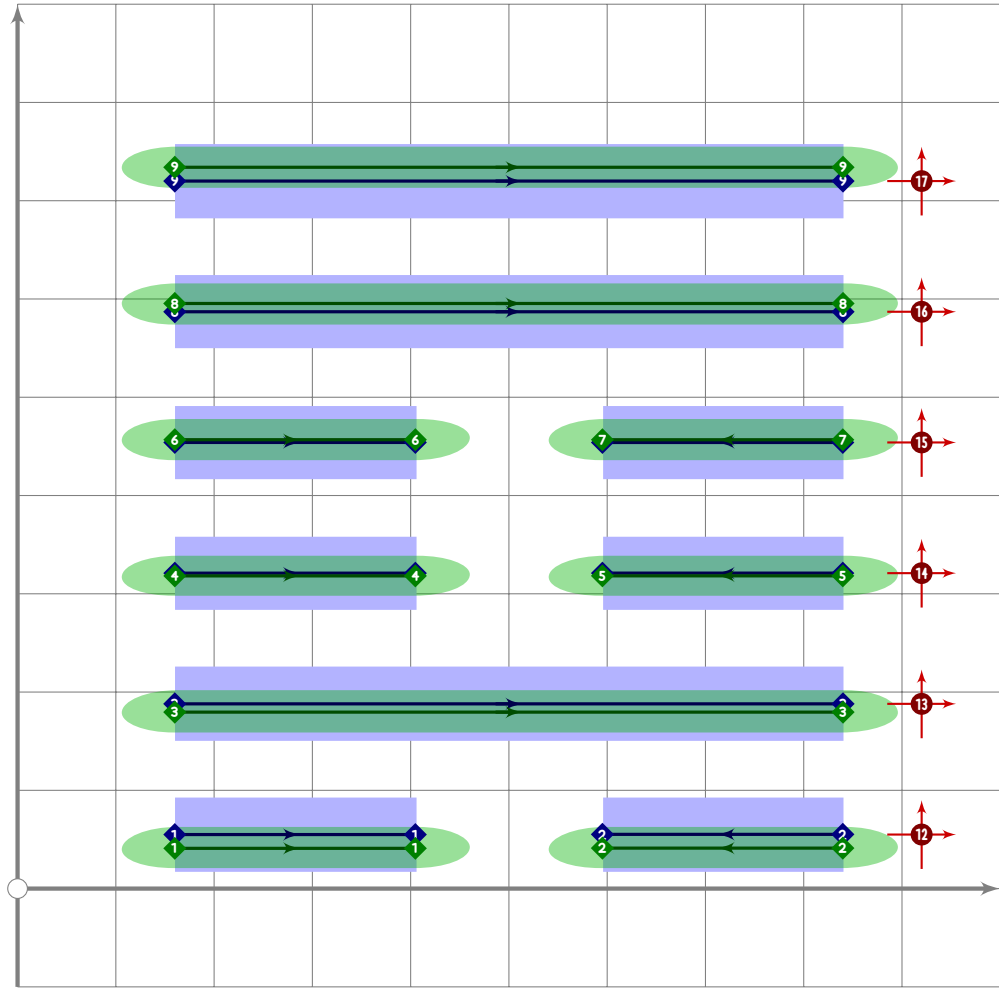
119 make_hexagram(57,0,1,1,0,1,1);



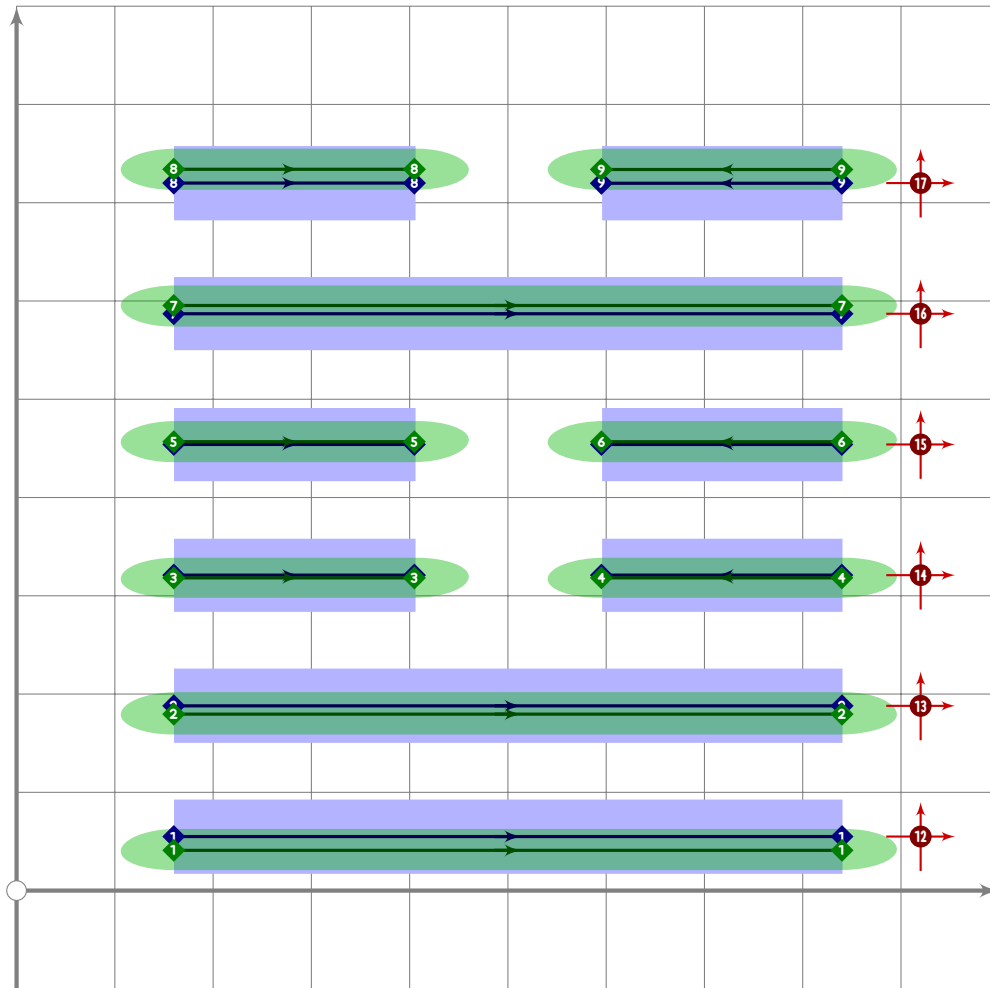
120 make_hexagram(58,1,1,0,1,1,0);

4D

4D



```
121 make_hexagram(59,0,1,0,0,1,1);
```

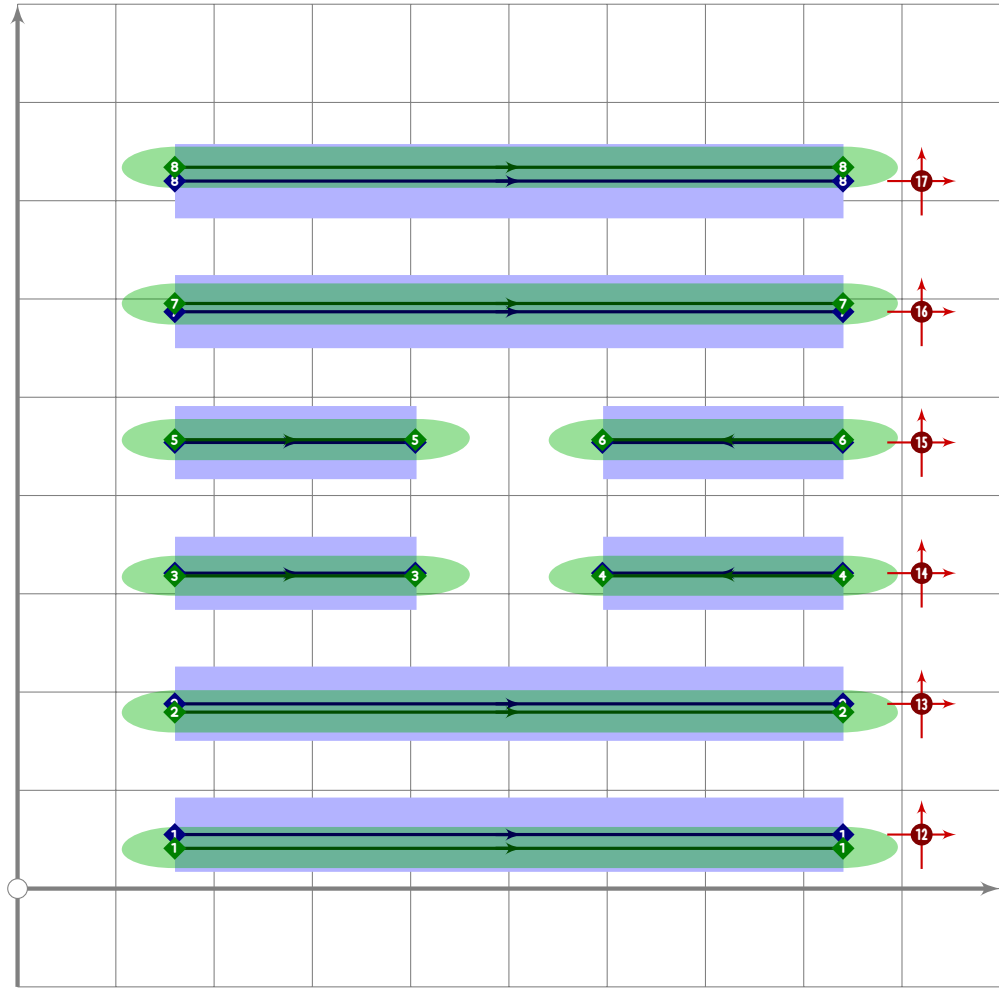


122 make_hexagram(60,1,1,0,0,1,0);

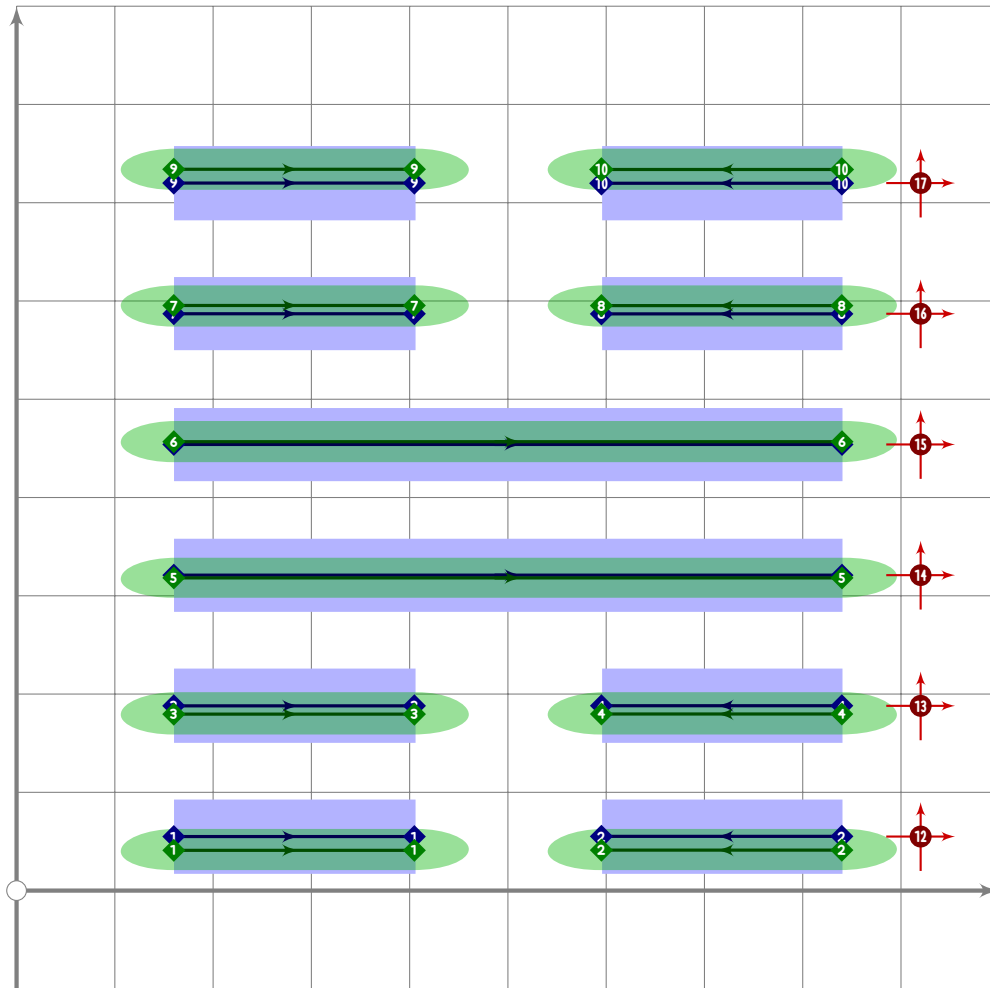
4D

U+4DFC
tsuku.iching61

4D



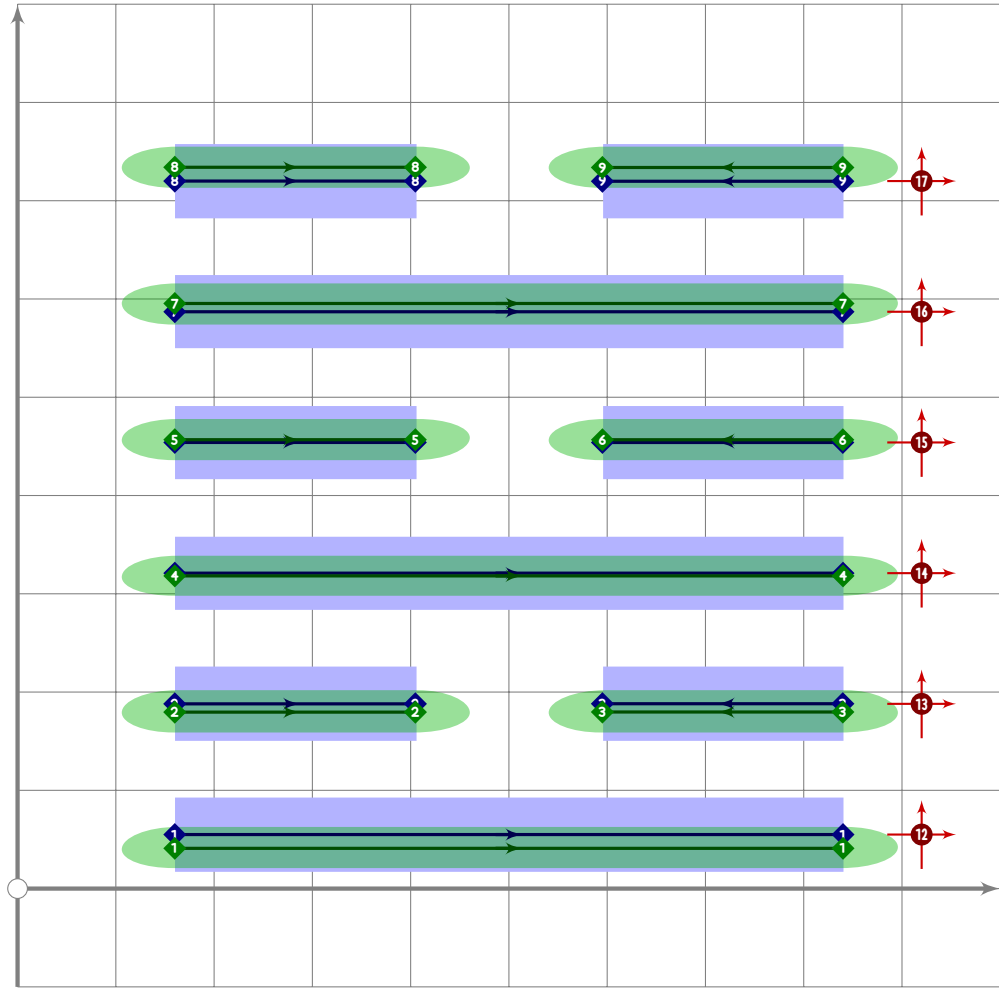
123 make_hexagram(61,1,1,0,0,1,1);



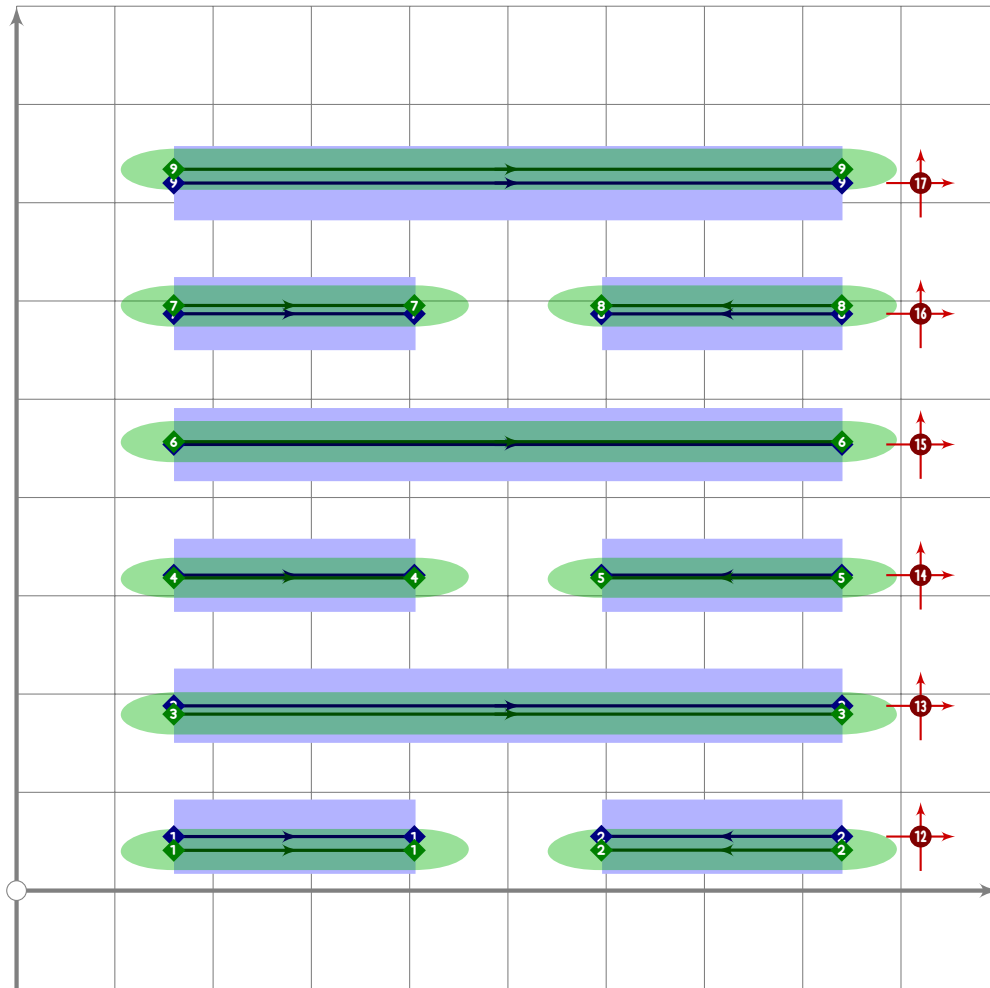
124 make_hexagram(62,0,0,1,1,0,0);

4D

4D



125 make_hexagram(63,1,0,1,0,1,0);



4D

126 make_hexagram(64,0,1,0,1,0,1);

127

128

129

130 endfont;

131

132