

あ“あ・い()あ Ryumin-Light
あ“あ・い← IPA明朝 (ipam)
あ“あ・い← KozMinPr6N-Regular
あ“あ・い← IPA P明朝 (ipamp)
あ 123 \relax

ここからは、欧文文字フォントは IPA EX ゴシック

■ 文字範囲の代入/取得テスト

「ô」は9番の文字範囲なので、和文扱いのはず
iso8859-1 和文扱い:0 § ¶ ° £ ¥ ô
iso8859-1 欧文扱い:1 § ¶ ° £ ¥ ô
標準:1 § ¶ ° £ ¥ ô

■ 文字範囲の状況取得

0 1 0

■ 文字コード→文字範囲

-1 6 8 9 -1 2 1 7

あ あ 1 ← CFFFF 欧文扱いあ あ 0 ← CFFFF 和文扱い

■ Ticket #25121

あいうえお か き く け こ さ し す せ そ a
あいうえお か き く け こ さ し す せ そ
あいうえお さ し す せ そ

以下は JFM グルー挿入検証

■ JA-JA (pen なし)

	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
あ ア	4 kern 1 20.0pt (from JFM: priority 0)
	49 glyph 256 ア 69 (8.8+1.2)x10.0
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
あい	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 256 い 69 (8.8+1.2)x10.0
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	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
あ ウ	28 glue 0 14.1pt (from JFM: priority 36)
	49 glyph 256 ウ 69 (8.8+1.2)x10.0
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 い 69 (8.8+1.2)x10.0
い ア	4 kern 1 20.0pt (from JFM: priority 0)
	49 glyph 256 ア 69 (8.8+1.2)x10.0
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	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 い 69 (8.8+1.2)x10.0
いい	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 256 い 69 (8.8+1.2)x10.0
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	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 い 69 (8.8+1.2)x10.0
い ウ	28 glue 0 14.1pt (from JFM: priority 36)
	49 glyph 256 ウ 69 (8.8+1.2)x10.0

■ JA-EN (pen なし)

	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
あ a	4 kern 1 12.2pt (from JFM: priority 0)
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
あ (4 kern 1 12.2pt (from JFM: priority 0)
	49 glyph 256 (68 (7.6709+1.82129)x3.33008
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
あ)	4 kern 1 12.3pt (from JFM: priority 0)
	49 glyph 256) 68 (7.6709+1.82129)x3.33008
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 い 69 (8.8+1.2)x10.0
い a	46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
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	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 う 69 (8.8+1.2)x10.0
う a	28 glue 0 17.4pt (from JFM: priority 36)
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 え 69 (8.8+1.2)x10.0
え a	4 kern 1 17.4pt (from JFM: priority 0)
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 お 69 (8.8+1.2)x10.0
お a	46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805

■ EN-JA (pen なし)

	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
a あ	28 glue 0 5.1pt (from JFM: priority 36)
	49 glyph 256 あ 69 (8.8+1.2)x10.0
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 (68 (7.6709+1.82129)x3.33008
(あ	3 penalty 0 10000 (for kinsoku)
	28 glue 0 5.2pt (from JFM: priority 36)
	49 glyph 256 あ 69 (8.8+1.2)x10.0
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256) 68 (7.6709+1.82129)x3.33008
) あ	28 glue 0 5.1pt (from JFM: priority 36)
	49 glyph 256 あ 69 (8.8+1.2)x10.0
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
a い	28 glue 0 14.2pt (from JFM: priority 36)
	49 glyph 256 い 69 (8.8+1.2)x10.0

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 glyph 256 a 68 (5.2002+0.03906)x5.49805
4 kern 1 20.1pt (from JFM: priority 0)
49 glyph 256 う 69 (8.8+1.2)x10.0

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■ JA-明 kern (pen なし)

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
4B glue 0 9.4pt plus 2.3pt minus 4.5pt
49 glyph 256 あ 69 (8.8+1.2)x10.0
4 kern 1 12.4pt (from JFM: priority 0)
49 kern 1 3.0pt

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 glyph 256 い 69 (8.8+1.2)x10.0
49 kern 1 3.0pt

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 glyph 256 う 69 (8.8+1.2)x10.0
3 penalty 0 10000 (for kinsoku)
28 glue 0 17.7pt (from JFM: priority 36)
49 kern 1 3.0pt

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■ 明 kern-JA (pen なし)

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 kern 1 3.0pt
3 penalty 0 10000 (for kinsoku)
28 glue 0 5.3pt (from JFM: priority 36)
49 glyph 256 あ 69 (8.8+1.2)x10.0

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 kern 1 3.0pt
3 penalty 0 10000 (for kinsoku)
28 glue 0 14.4pt (from JFM: priority 36)
49 glyph 256 い 69 (8.8+1.2)x10.0

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 kern 1 3.0pt
4 kern 1 20.3pt (from JFM: priority 0)
49 glyph 256 う 69 (8.8+1.2)x10.0

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■ JA-hbox (pen なし)

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
4B glue 0 9.4pt plus 2.3pt minus 4.5pt
49 glyph 256 あ 69 (8.8+1.2)x10.0
3 penalty 0 0 (for kinsoku)
4 kern 1 12.1pt (from JFM: priority 0)
49 hlist 2 (0.0+0.0)x0.0, dir=0

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.49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 glyph 256 い 69 (8.8+1.2)x10.0
3 penalty 0 0 (for kinsoku)
49 hlist 2 (0.0+0.0)x0.0, dir=0

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.49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 glyph 256 う 69 (8.8+1.2)x10.0
28 glue 0 17.3pt (from JFM: priority 36)
49 hlist 2 (0.0+0.0)x0.0, dir=0

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.49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 glyph 256 え 69 (8.8+1.2)x10.0
3 penalty 0 0 (for kinsoku)
4 kern 1 17.3pt (from JFM: priority 0)
49 hlist 2 (0.0+0.0)x0.0, dir=0

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.49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 whatsit 8 userid:4 (direction) (node list) dir: 4
4B glue 0 9.4pt plus 2.3pt minus 4.5pt
49 glyph 256 あ 69 (8.8+1.2)x10.0
4 kern 1 12.1pt (from JFM: priority 0)
49 hlist 2 (8.8+1.2)x10.0, dir=0

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.49 glyph 256 ア 69 (8.8+1.2)x10.0
49 whatsit 8 userid:4 (direction) (node list) dir: 4
4B glue 0 9.4pt plus 2.3pt minus 4.5pt
49 glyph 256 あ 69 (8.8+1.2)x10.0
4 kern 1 12.2pt (from JFM: priority 0)
49 hlist 2 (5.2002+0.03906)x5.49805, dir=0

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あ a

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.49 whatsit 8 userid:4 (direction) (node list) dir: 4
.49 glyph 256 a 68 (5.2002+0.03906)x5.49805
49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 glyph 256 い 69 (8.8+1.2)x10.0
46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
49 hlist 2 (5.2002+0.03906)x5.49805, dir=0

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■ hbox-JA (pen なし)

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 hlist 2 (0.0+0.0)x0.0, dir=0
.49 whatsit 8 userid:4 (direction) (node list) dir: 4
3 penalty 0 0 (for kinsoku)
49 glyph 256 あ 69 (8.8+1.2)x10.0
```

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 hlist 2 (0.0+0.0)x0.0, dir=0
.49 whatsit 8 userid:4 (direction) (node list) dir: 4
28 glue 0 14.1pt (from JFM: priority 36)
49 glyph 256 い 69 (8.8+1.2)x10.0
```

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 hlist 2 (0.0+0.0)x0.0, dir=0
.49 whatsit 8 userid:4 (direction) (node list) dir: 4
3 penalty 0 0 (for kinsoku)
4 kern 1 20.0pt (from JFM: priority 0)
49 glyph 256 う 69 (8.8+1.2)x10.0
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■ JA-JA (pen あり)

	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
あ ア	4 kern 1 20.0pt (from JFM: priority 0)
	49 glyph 256 ア 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
	3 penalty 0 123 (for kinsoku)
あい	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 256 い 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
	3 penalty 0 123 (for kinsoku)
あ ウ	28 glue 0 14.1pt (from JFM: priority 36)
	49 glyph 256 ウ 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 い 69 (8.8+1.2)x10.0
い ア	4 kern 1 20.0pt (from JFM: priority 0)
	49 glyph 256 ア 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 い 69 (8.8+1.2)x10.0
	3 penalty 0 123 (for kinsoku)
いい	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 256 い 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 い 69 (8.8+1.2)x10.0
	3 penalty 0 123 (for kinsoku)
い ウ	28 glue 0 14.1pt (from JFM: priority 36)
	49 glyph 256 ウ 69 (8.8+1.2)x10.0

■ JA-EN (pen あり)

	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
あ a	4 kern 1 12.2pt (from JFM: priority 0)
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 い 69 (8.8+1.2)x10.0
	3 penalty 0 123 (for kinsoku)
い a	46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 う 69 (8.8+1.2)x10.0
	3 penalty 0 123 (for kinsoku)
う a	28 glue 0 17.4pt (from JFM: priority 36)
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 え 69 (8.8+1.2)x10.0
	4 kern 1 17.4pt (from JFM: priority 0)
え a	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 お 69 (8.8+1.2)x10.0
	3 penalty 0 123 (for kinsoku)
お a	46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805

■ EN-JA (pen あり)

	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
	3 penalty 0 321 (for kinsoku)
a あ	28 glue 0 5.1pt (from JFM: priority 36)
	49 glyph 256 あ 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
	3 penalty 0 892 (for kinsoku)
a い	28 glue 0 14.2pt (from JFM: priority 36)
	49 glyph 256 い 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
	4 kern 1 20.1pt (from JFM: priority 0)
a う	49 glyph 256 う 69 (8.8+1.2)x10.0

■ JA-hbox (pen あり)

	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
	3 penalty 0 123 (for kinsoku)
	4 kern 1 12.1pt (from JFM: priority 0)
あ	49 hlist 2 (0.0+0.0)x0.0, dir=0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 glyph 256 り 69 (8.8+1.2)x10.0
3 penalty 0 123 (for kinsoku)
49 hlist 2 (0.0+0.0)x0.0, dir=0
い .49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 glyph 256 う 69 (8.8+1.2)x10.0
3 penalty 0 123 (for kinsoku)
28 glue 0 17.3pt (from JFM: priority 36)
49 hlist 2 (0.0+0.0)x0.0, dir=0
う .49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 glyph 256 え 69 (8.8+1.2)x10.0
3 penalty 0 123 (for kinsoku)
4 kern 1 17.3pt (from JFM: priority 0)
49 hlist 2 (0.0+0.0)x0.0, dir=0
え .49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 whatsit 8 userid:4 (direction) (node list) dir: 4
4B glue 0 9.4pt plus 2.3pt minus 4.5pt
49 glyph 256 あ 69 (8.8+1.2)x10.0
4 kern 1 12.1pt (from JFM: priority 0)
49 hlist 2 (8.8+1.2)x10.0, dir=0
あ ア .49 whatsit 8 userid:4 (direction) (node list) dir: 4
.49 glyph 256 ア 69 (8.8+1.2)x10.0
49 whatsit 8 userid:4 (direction) (node list) dir: 4
4B glue 0 9.4pt plus 2.3pt minus 4.5pt
49 glyph 256 あ 69 (8.8+1.2)x10.0
4 kern 1 12.2pt (from JFM: priority 0)
49 hlist 2 (5.2002+0.03906)x5.49805, dir=0
あ a .49 whatsit 8 userid:4 (direction) (node list) dir: 4
.49 glyph 256 a 68 (5.2002+0.03906)x5.49805
49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 glyph 256 り 69 (8.8+1.2)x10.0
3 penalty 0 123 (for kinsoku)
46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
49 hlist 2 (5.2002+0.03906)x5.49805, dir=0
い a .49 whatsit 8 userid:4 (direction) (node list) dir: 4
.49 glyph 256 a 68 (5.2002+0.03906)x5.49805
49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 hlist 2 (8.8+1.2)x10.0, dir=0
.49 whatsit 8 userid:4 (direction) (node list) dir: 4
.49 glyph 256 ( 69 (8.8+1.2)x10.0
3 penalty 0 571 (for kinsoku)
28 glue 0 14.1pt (from JFM: priority 36)
49 glyph 256 り 69 (8.8+1.2)x10.0
3 penalty 0 123 (for kinsoku)
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
49 hlist 2 (8.8+1.2)x10.0, dir=0
( り) .49 whatsit 8 userid:4 (direction) (node list) dir: 4
.49 glyph 256 ) 69 (8.8+1.2)x10.0

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■ hbox-JA (pen あり)

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 hlist 2 (0.0+0.0)x0.0, dir=0
あ .49 whatsit 8 userid:4 (direction) (node list) dir: 4
3 penalty 0 0 (for kinsoku)
49 glyph 256 あ 69 (8.8+1.2)x10.0
49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 hlist 2 (0.0+0.0)x0.0, dir=0
い .49 whatsit 8 userid:4 (direction) (node list) dir: 4
3 penalty 0 571 (for kinsoku)
28 glue 0 14.1pt (from JFM: priority 36)
49 glyph 256 り 69 (8.8+1.2)x10.0
49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 hlist 2 (0.0+0.0)x0.0, dir=0
う .49 whatsit 8 userid:4 (direction) (node list) dir: 4
3 penalty 0 0 (for kinsoku)
4 kern 1 20.0pt (from JFM: priority 0)
49 glyph 256 う 69 (8.8+1.2)x10.0

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■ italic correction

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 glyph 256 f 37 (6.94444+1.94444)x3.06665
4A kern 3 2.11945pt (italic correction)
3 penalty 0 123 (for kinsoku)
47 glue 0 0.0pt plus 1.0pt (xkanjiskip, JFM specified)
28 glue 0 5.0pt minus 5.0pt (from JFM: priority 36)
2 hlist 0 (8.8+1.2)x5.0, dir=0 (packed)
.0 glyph 256 ( 66 (8.32031+0.71777)x5.09766 off: (-0.09766,0.0)
4A kern 3 0.0pt (italic correction)
3 penalty 0 10000 (for kinsoku)
45 glue 0 0.0pt minus 0.4pt (kanjiskip, JFM specified)
16C glue 0 0.0pt
f (あ) 2 hlist 0 (8.8+1.2)x10.0, dir=0 (packed)
.0 glyph 256 あ 66 (8.11035+0.36133)x8.99902

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[x]kanjiskip の挿入

■ kanjiskip from JFM, autospacing (JA-JA)

	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
ああ	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 256 あ 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
ああ	45 glue 0 1.0pt plus 0.4pt minus 0.5pt (kanjiskip, JFM specified)
	49 glyph 256 あ 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 は 72 (10.56+1.44)x12.0
はあ	45 glue 0 1.1pt plus 0.44pt minus 0.55pt (kanjiskip, JFM specified)
	49 glyph 256 あ 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 256 あ 69 (8.8+1.2)x10.0
あああ	44 glue 0 0.0pt (kanjiskip)
	49 glyph 256 あ 69 (8.8+1.2)x10.0

■ kanjiskip from JFM/autospacing (JA-EN)

	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 ま 69 (8.8+1.2)x10.0
ま x	46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
	49 glyph 256 x 68 (5.07813+0.0)x4.8877
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 ま 69 (8.8+1.2)x10.0
ま x	46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
	49 glyph 256 x 68 (5.07813+0.0)x4.8877
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 ま 69 (8.8+1.2)x10.0
ま x	46 glue 0 0.0pt (xkanjiskip)
	49 glyph 256 x 68 (5.07813+0.0)x4.8877
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 ま 69 (8.8+1.2)x10.0
ま x	47 glue 0 3.1pt plus 0.45pt minus 0.57pt (xkanjiskip, JFM specified)
	49 glyph 256 x 68 (5.07813+0.0)x4.8877
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 ま 69 (8.8+1.2)x10.0
ま x	46 glue 0 0.0pt (xkanjiskip)
	49 glyph 256 x 68 (5.07813+0.0)x4.8877
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 ま 69 (8.8+1.2)x10.0
ま x	46 glue 0 0.0pt (xkanjiskip)
	49 glyph 256 x 68 (5.07813+0.0)x4.8877

■ xkanjiskip from JFM/autospacing (EN-JA)

	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 x 68 (5.07813+0.0)x4.8877
x ま	46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
	49 glyph 256 ま 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 x 68 (5.07813+0.0)x4.8877
x ま	46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
	49 glyph 256 ま 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 x 68 (5.07813+0.0)x4.8877
x ま	46 glue 0 0.0pt (xkanjiskip)
	49 glyph 256 ま 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 x 68 (5.07813+0.0)x4.8877
x ま	47 glue 0 3.1pt plus 0.45pt minus 0.57pt (xkanjiskip, JFM specified)
	49 glyph 256 ま 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 x 68 (5.07813+0.0)x4.8877
x ま	46 glue 0 0.0pt (xkanjiskip)
	49 glyph 256 ま 69 (8.8+1.2)x10.0
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 x 68 (5.07813+0.0)x4.8877
x ま	46 glue 0 0.0pt (xkanjiskip)
	49 glyph 256 ま 69 (8.8+1.2)x10.0
	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 256 あ 69 (8.8+1.2)x10.0
x まお x	46 glue 0 0.0pt (xkanjiskip)
	49 glyph 256 x 68 (5.07813+0.0)x4.8877

■ more than one penalty

	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 お 69 (8.8+1.2)x10.0
	49 penalty 0 1701
	49 penalty 0 1701
	49 penalty 0 1701
おい	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 256 い 69 (8.8+1.2)x10.0
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 お 69 (8.8+1.2)x10.0
	49 penalty 0 1701
	49 penalty 0 1701
	49 penalty 0 1701
おお	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 256 お 69 (8.8+1.2)x10.0
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
	49 penalty 0 1701
	49 penalty 0 1701
	49 penalty 0 1701
あい	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 256 い 69 (8.8+1.2)x10.0
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 9.4pt plus 2.3pt minus 4.5pt
	49 glyph 256 あ 69 (8.8+1.2)x10.0
	49 penalty 0 1701
	49 penalty 0 1701
	49 penalty 0 1701
あお	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 256 お 69 (8.8+1.2)x10.0

■ その他: italic correction and accents

	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	2 hlist 0 (8.8+1.2)x10.0, dir=0 (packed)
	.0 glyph 256 あ 66 (8.11035+0.36133)x8.99902
	4A kern 3 0.0pt (italic correction)
	46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
あ j	49 glyph 256 j 1 (6.67859+1.94444)x3.05557
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	2 hlist 0 (8.8+1.2)x5.0, dir=0 (packed)
	.0 glyph 256) 66 (8.32031+0.71777)x5.09766
	4A kern 3 0.0pt (italic correction)
) j	16C glue 0 5.0pt minus 5.0pt
	49 glyph 256 j 1 (6.67859+1.94444)x3.05557
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 れ 69 (8.8+1.2)x10.0
	46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
	49 kern 2 1.25pt (for accent)
	49 hlist 0 (6.28473+0.0)x5.00002, dir=0, shifted -2.52777
	.0 glyph 0 ~ 1 (6.28473+0.0)x5.00002
	49 kern 2 -6.25002pt (for accent)
	49 glyph 256 A 1 (6.83331+0.0)x7.50002
	3 penalty 0 10000 (for kinsoku)
	46 glue 0 0.0pt (xkanjiskip)
れ Ā)	49 glyph 256) 69 (8.8+1.2)x10.0

■ その他: box boundary

	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	4B glue 0 10.3pt
	49 glyph 256 か 69 (8.8+1.2)x10.0
	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 256 あ 69 (8.8+1.2)x10.0
	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 256 か 69 (8.8+1.2)x10.0
かあか	4B kern 1 8.5pt
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
	46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
	49 glyph 512 か 69 (8.8+1.2)x10.0
	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 512 あ 69 (8.8+1.2)x10.0
	44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
	49 glyph 512 か 69 (8.8+1.2)x10.0
	46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip)
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
a かあか a	
<hr/>	
	49 whatsit 8 userid:4 (direction) (node list) dir: 4
	49 glyph 256 a 68 (5.2002+0.03906)x5.49805
	49 hlist 2 (8.8+1.2)x28.8, dir=0
	.49 whatsit 8 userid:4 (direction) (node list) dir: 4
	.4B glue 0 10.3pt
	.49 glyph 256 か 69 (8.8+1.2)x10.0
	.4B kern 1 8.5pt
a か a	49 glyph 256 a 68 (5.2002+0.03906)x5.49805

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
49 glyph 256 き 69 (8.8+1.2)x10.0
3 penalty 0 0 (for kinsoku)
49 hlist 2 (8.8+1.2)x28.8, dir=0
.49 whatsit 8 userid:4 (direction) (node list) dir: 4
.4B glue 0 10.3pt
.49 glyph 256 か 69 (8.8+1.2)x10.0
.4B kern 1 8.5pt
3 penalty 0 0 (for kinsoku)
49 glyph 256 き 69 (8.8+1.2)x10.0
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
49 hlist 2 (8.8+1.2)x10.0, dir=0
.49 whatsit 8 userid:4 (direction) (node list) dir: 4
.49 glyph 256 き 69 (8.8+1.2)x10.0
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
49 glyph 256 き 69 (8.8+1.2)x10.0
-----
49 whatsit 8 userid:4 (direction) (node list) dir: 4
2 hlist 0 (8.8+1.2)x10.0, dir=0 (packed)
.0 glyph 256 あ 66 (8.11035+0.36133)x8.99902
3 penalty 0 1000 (for kinsoku)
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
49 hlist 2 (8.8+1.2)x5.0, dir=0
.49 whatsit 8 userid:4 (direction) (node list) dir: 4
.2 hlist 0 (8.8+1.2)x5.0, dir=0 (packed)
..0 glyph 256 ( 66 (8.32031+0.71777)x5.09766 off: (-0.09766,0.0)
3 penalty 0 1000 (for kinsoku)
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 hlist 0 (8.8+1.2)x10.0, dir=0 (packed)
.0 glyph 256 あ 66 (8.11035+0.36133)x8.99902
3 penalty 0 1000 (for kinsoku)
45 glue 0 0.0pt plus 0.4pt (kanjiskip, JFM specified)
28 glue 0 5.0pt minus 5.0pt (from JFM: priority 36)
2 hlist 0 (8.8+1.2)x5.0, dir=0 (packed)
.0 glyph 256 ( 66 (8.32031+0.71777)x5.09766 off: (-0.09766,0.0)
3 penalty 0 10000 (for kinsoku)
45 glue 0 0.0pt minus 0.4pt (kanjiskip, JFM specified)
16C glue 0 0.0pt
2 hlist 0 (8.8+1.2)x10.0, dir=0 (packed)
.0 glyph 256 あ 66 (8.11035+0.36133)x8.99902
-----
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■ その他: paragraph, hbox and math boundary

か	工	<pre> 0 whatsit 8 userid:4 (direction) (node list) dir: 4 0 local_par nil 0 hlist 3 (0.0+0.0)x19.2, dir=0 4B glue 0 6.8pt plus 0.2pt minus 0.4pt 49 glyph 256 か 69 (8.8+1.2)x10.0 3 penalty 0 500 (for kinsoku) 44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip) 49 glyph 256 工 69 (8.8+1.2)x10.0 49 penalty 2 10000 0 glue 15 30.0pt 0 glue 9 0.0pt </pre>
か	工	<pre> 0 whatsit 8 userid:4 (direction) (node list) dir: 4 0 local_par nil 4B glue 0 10.3pt 49 glyph 256 か 69 (8.8+1.2)x10.0 3 penalty 0 500 (for kinsoku) 44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip) 49 glyph 256 工 69 (8.8+1.2)x10.0 49 penalty 2 10000 0 glue 15 30.0pt 0 glue 9 0.0pt </pre>
か工		<pre> 49 whatsit 8 userid:4 (direction) (node list) dir: 4 4B glue 0 10.3pt 49 glyph 256 か 69 (8.8+1.2)x10.0 44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip) 49 glyph 256 工 69 (8.8+1.2)x10.0 4B glue 0 7.8pt </pre>
あ	a さ a か	<pre> 49 whatsit 8 userid:4 (direction) (node list) dir: 4 4B glue 0 9.4pt plus 2.3pt minus 4.5pt 49 glyph 256 あ 69 (8.8+1.2)x10.0 28 glue 0 12.5pt plus 4.3pt minus 8.7pt (from JFM: priority 36) 49 math 0 49 glyph 256 a 7 (4.30554+0.0)x5.28589 49 math 1 28 glue 0 6.8pt plus 0.2pt minus 0.4pt (from JFM: priority 36) 49 glyph 256 さ 69 (8.8+1.2)x10.0 46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip) 49 math 0 49 glyph 256 a 7 (4.30554+0.0)x5.28589 49 math 1 46 glue 0 2.40553pt plus 1.0pt minus 1.0pt (xkanjiskip) 49 glyph 256 か 69 (8.8+1.2)x10.0 4B kern 1 8.5pt </pre>

■ その他: unhbox の連続

) a	<pre> 49 whatsit 8 userid:4 (direction) (node list) dir: 4 2 hlist 0 (8.4675+1.15466)x4.81108, dir=0 (packed) .0 glyph 256) 51 (8.00594+0.69066)x9.62216 16C glue 0 4.81108pt minus 4.81108pt 49 glyph 512 a 68 (5.2002+0.03906)x5.49805 </pre>
) a	<pre> 49 whatsit 8 userid:4 (direction) (node list) dir: 4 2 hlist 0 (8.4675+1.15466)x4.81108, dir=0 (packed) .0 glyph 256) 51 (8.00594+0.69066)x9.62216 16C glue 0 4.81108pt minus 4.81108pt 16C glue 0 4.81108pt minus 4.81108pt 49 glyph 512 a 68 (5.2002+0.03906)x5.49805 </pre>
() 「	<pre> 49 whatsit 8 userid:4 (direction) (node list) dir: 4 2 hlist 0 (8.4675+1.15466)x4.81108, dir=0 (packed) .0 glyph 256 (51 (8.00594+0.69066)x9.62216 off: (-4.81108,0.0) 3 penalty 0 10000 (for kinsoku) 45 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip, JFM specified) 28 glue 0 0.0pt (from JFM: priority 36) 2 hlist 0 (8.4675+1.15466)x4.81108, dir=0 (packed) .0 glyph 256) 51 (8.00594+0.69066)x9.62216 45 glue 0 0.0pt plus 0.4pt (kanjiskip, JFM specified) 28 glue 0 4.81108pt minus 4.81108pt (from JFM: priority 36) 2 hlist 0 (8.4675+1.15466)x4.81108, dir=0 (packed) .0 glyph 256 (51 (8.00594+0.69066)x9.62216 off: (-4.81108,0.0) 3 penalty 0 10000 (for kinsoku) 45 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip, JFM specified) 28 glue 0 0.0pt (from JFM: priority 36) 2 hlist 0 (8.4675+1.15466)x4.81108, dir=0 (packed) .0 glyph 256 「 51 (7.94955+0.0)x9.62216 off: (-4.81108,0.0) 3 penalty 0 10000 (for kinsoku) 45 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip, JFM specified) 28 glue 0 0.0pt (from JFM: priority 36) 2 hlist 0 (8.4675+1.15466)x4.81108, dir=0 (packed) .0 glyph 256 」 51 (6.29105+0.63428)x9.62216 </pre>

```

49 whatsit 8 userid:4 (direction) (node list) dir: 4
2 rule 3 (8.4675+1.15466)x0.0, dir=0
49 glyph 256 あ 51 (7.61128+0.31009)x9.62216
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.4675+1.15466)x0.0, dir=0
49 glyph 256 い 51 (6.69511+0.0)x9.62216

```

```

49 whatsit 8 userid:4 (direction) (node list) dir: 4
2 rule 3 (8.4675+1.15466)x0.0, dir=0
49 glyph 256 あ 51 (7.61128+0.31009)x9.62216
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.4675+1.15466)x0.0, dir=0
49 glyph 256 い 51 (6.69511+0.0)x9.62216

```

■ その他: 「前由来」「後由来」JFM 由来グループ

```

49 whatsit 8 userid:4 (direction) (node list) dir: 4
2 rule 3 (8.4675+1.15466)x0.0, dir=0
49 glyph 256 あ 51 (7.61128+0.31009)x9.62216
28 glue 0 2.40555pt minus 2.40555pt (from JFM: priority 36)
2 hlist 0 (4.23375+0.57733)x2.40555, dir=0 (packed)
.0 glyph 256 ( 53 (4.00298+0.34532)x4.81108 off: (-2.40553,0.0)

```

```

49 whatsit 8 userid:4 (direction) (node list) dir: 4
2 rule 3 (4.23375+0.57733)x0.0, dir=0
49 glyph 256 あ 53 (3.80563+0.15504)x4.81108
28 glue 0 4.81108pt minus 4.81108pt (from JFM: priority 36)
2 hlist 0 (8.4675+1.15466)x4.81108, dir=0 (packed)
.0 glyph 256 ( 51 (8.00594+0.69066)x9.62216 off: (-4.81108,0.0)

```

```

49 whatsit 8 userid:4 (direction) (node list) dir: 4
2 hlist 0 (4.23375+0.57733)x2.40555, dir=0 (packed)
.0 glyph 256 . 53 (0.68831+0.0047)x4.81108
3 penalty 0 10000 (for kinsoku)
31 glue 0 4.81108pt minus 1.6037pt (from JFM: priority 45)
2 hlist 0 (8.4675+1.15466)x4.81108, dir=0 (packed)
.0 glyph 256 * 51 (4.35065+0.0)x9.62216 off: (-2.40553,0.0)

```

```

49 whatsit 8 userid:4 (direction) (node list) dir: 4
2 hlist 0 (8.4675+1.15466)x4.81108, dir=0 (packed)
.0 glyph 256 . 51 (1.3766+0.0094)x9.62216
3 penalty 0 10000 (for kinsoku)
31 glue 0 6.01385pt minus 2.00462pt (from JFM: priority 45)
2 hlist 0 (4.23375+0.57733)x2.40555, dir=0 (packed)
.0 glyph 256 * 53 (2.17532+0.0)x4.81108 off: (-1.20276,0.0)

```

■ その他: JFM and kerning

```

49 whatsit 8 userid:4 (direction) (node list) dir: 4
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 タ 73 (8.12+0.44)x10.0
44 kern 1 -0.5pt (italic correction)
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 ノ 73 (7.83+0.38)x10.0
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 タ 73 (8.12+0.44)x10.0
44 kern 1 -0.1pt (italic correction)
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 イ 73 (8.08+0.42)x10.0
44 kern 1 -0.2pt (italic correction)
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 ク 73 (8.19+0.44)x10.0
44 kern 1 -0.8pt (italic correction)
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 ノ 73 (7.83+0.38)x10.0

```

```

49 whatsit 8 userid:4 (direction) (node list) dir: 4
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 タ 74 (8.12+0.44)x10.0
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 ノ 74 (7.83+0.38)x10.0
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 タ 74 (8.12+0.44)x10.0
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 イ 74 (8.08+0.42)x10.0
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 ク 74 (8.19+0.44)x10.0
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 ノ 74 (7.83+0.38)x10.0

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 タ 73 (8.12+0.44)x10.0
4A kern 3 0.0pt (italic correction)
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 ノ 73 (7.83+0.38)x10.0
```

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49 whatsit 8 userid:4 (direction) (node list) dir: 4
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 」 73 (6.68+0.83)x10.0
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 258 ガ 73 (8.24+0.27)x10.0
3 penalty 0 10000 (for kinsoku)
44 glue 0 0.0pt plus 0.4pt minus 0.4pt (kanjiskip)
2 rule 3 (8.8+1.2)x0.0, dir=0
49 glyph 256 . 73 (1.35+0.0)x10.0
```
