

FORMULAE FOR COINING SPECIALIZED LUGANDA TERMS

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ABBREVIATIONS AND SYMBOLS

B	preprefix
C	combining form such that $C = S/ R \bullet L$
C ⁺	initial consonant of combining form C geminated
F	prefix
F ₊	prefix in plural
F _a	adjectival prefix
F _{nom}	nominal prefix
F _{pro}	pronominal prefix
H	suffix
<i>I</i>	<i>e or i</i>
L	postsuffix; $L = \bullet a/ wa// e/ u// i// o$
oku [•]	prefix of verb in citation form
R	verb root, simple or extended
R ⁺	initial consonant of verb root R geminated
S	nominal stem
S ⁺	initial consonant of nominal stem S geminated
S _{num}	numeral stem
SI	International System of Units
<i>U</i>	<i>o or u</i>
W	word in English/ German

•waZa	positive suffix in Luganda such that •waZa # •wuZa and •waZa = •waca/ •wala/ •wama/ •wana/ •wanwa/ •wapa/ •wata/ •watwa/ •wava/ •wawa
•wuZa	negative suffix in Luganda such that •wuZa # •waZa and •wuZa = •wuca/ •wuka/ •wuma/ •wuna/ •wunwa/ •wupa/ •wuta/ •wutwa/ •wuva/ •wuwa
X	constituent of a word in English/ German
Y	word in Luganda
Z	constituent of a word in Luganda
•	agglutinational boundary (in Luganda) ; syllable boundary (in English)
=	in-language synonym
#	contrasted with
≡	posited cross-language equivalent
/	alternative
~	variant form
<	from
□	special note

INTRODUCTORY NOTES ON THE SECOND EDITION

1. The first edition of this paper appeared in October 2022. The preparation of the second edition in quick succession has mainly been motivated by the wish or urge to present the formulae in a much more generalized, concise, and elegant form.
2. For this edition we have decided to present the following extrapolated cardinal formulae.

2.1 Complex formulae

$$(i) [F/ C \bullet X]/ [X \bullet H/ C] \equiv \text{oku} \bullet \text{S} \bullet \text{H} \bullet \text{a} \rightarrow \text{oku} \bullet \text{R} \bullet \text{a} \bullet \text{H} \bullet \text{a}$$

$$\begin{array}{ccc} \downarrow & & \downarrow \\ \text{F} \bullet \text{S} \bullet \text{H} \bullet \text{L} & & \text{F} \bullet \text{R} \bullet \text{a} \bullet \text{H} \bullet \text{L} \end{array}$$

$$(ii) [F/ C \bullet X]/ [X \bullet H/ C] \equiv \text{oku} \bullet \text{R} \bullet \text{H} \bullet \text{a} \rightarrow \text{F} \bullet \text{R} \bullet \text{H} \bullet \text{L}$$

2.2 Compound formulae

$$(i) [F/ C \bullet X]/ [X \bullet H/ C] \equiv [F_1 \bullet C_1 F_{1\text{pro}} \bullet \text{a} F_2 \bullet C_2] \rightarrow F_1 \bullet C_1 \bullet C_2^+$$

$$(ii) [F/ C \bullet X]/ [X \bullet H/ C] \equiv \text{oku} \bullet \text{R} \bullet \text{a} \rightarrow F_1 \bullet \text{R} \bullet \text{L} \bullet F_2 \bullet \text{C}$$

3. Now that we have this powerful Luganda term coiner, we are justified to urge all Luganda well-wishers to fund the project that will lead to the full terminological maturity of the language.

Let it unfold!

1. **ab(s)•X** \equiv (1) $\text{oku}\cdot\text{S}\cdot\text{viila} \rightarrow \text{oku}\cdot\text{R}\cdot\text{aviila}$
 $\downarrow \qquad \qquad \downarrow$
 $\text{F}\cdot\text{S}\cdot\text{viil}\cdot\text{L} \quad \text{F}\cdot\text{R}\cdot\text{aviil}\cdot\text{L}$
- (2) $\text{oku}\cdot\text{S}\cdot\text{wuZa} \rightarrow \text{F}\cdot\text{S}\cdot\text{wuZ}\cdot\text{L}$
2. **acting X** \equiv $\text{omu}\cdot\text{nga}\cdot\text{Z}$
3. **ad•X** \equiv (1) $\text{oku}\cdot\text{S}\cdot\text{lila} \rightarrow \text{oku}\cdot\text{R}\cdot\text{alila}$
 $\downarrow \qquad \qquad \downarrow$
 $\text{F}\cdot\text{S}\cdot\text{lil}\cdot\text{L} \quad \text{F}\cdot\text{R}\cdot\text{alil}\cdot\text{L}$
- (2) $\text{oku}\cdot\text{S}\cdot\text{waZa} \rightarrow \text{F}\cdot\text{S}\cdot\text{waZ}\cdot\text{L}$
4. **X•ad** \equiv $\text{oku}\cdot\text{S}\cdot\text{ma} \rightarrow \text{oku}\cdot\text{R}\cdot\text{ama}$
 $\downarrow \qquad \qquad \downarrow$
 $\text{F}\cdot\text{S}\cdot\text{ma} \quad \text{F}\cdot\text{R}\cdot\text{am}\cdot\text{L}$
5. **after•X** \equiv $\text{oku}\cdot\text{S}\cdot\text{gonga} \rightarrow \text{oku}\cdot\text{R}\cdot\text{agonga}$
 $\downarrow \qquad \qquad \downarrow$
 $\text{F}\cdot\text{S}\cdot\text{gonga} \quad \text{F}\cdot\text{R}\cdot\text{agong}\cdot\text{L}$
6. **X•age = X•ad** q.v.
7. **X•aholic ~ X•aholic** \equiv $\text{F}\cdot\text{sibe}\cdot\text{Z}$
8. **X•al** \equiv (1) $\text{oku}\cdot\text{S}\cdot\text{ta} \rightarrow \text{oku}\cdot\text{R}\cdot\text{ata}$
- (2) $\text{F}\cdot\text{mna}\cdot\text{Z}$
9. **X•algia** \equiv $\text{F}\cdot\text{luma}\cdot\text{Z}$
10. **X•alia** \equiv $\text{oku}\cdot\text{S}\cdot\text{nywama} \rightarrow \text{F}\cdot\text{S}\cdot\text{nywama}$
11. **all•X** \equiv $\text{oku}\cdot\text{S}\cdot\text{wanna} \rightarrow \text{F}\cdot\text{S}\cdot\text{wanna}$
12. **all- X** \equiv $\text{F}\cdot\text{S}\cdot\text{wanna}$
13. **allo•X** \equiv $\text{oku}\cdot\text{S}\cdot\text{lala} \rightarrow \text{F}\cdot\text{S}\cdot\text{lal}\cdot\text{L}$
14. **ambi•X** \equiv $\text{oku}\cdot\text{S}\cdot\text{zomba} \rightarrow \text{oku}\cdot\text{R}\cdot\text{azomba}$
15. **amphi•X = ambi•X** q.v.
16. **an•X ~ a•X** \equiv $\text{oku}\cdot\text{S}\cdot\text{wuna} \rightarrow \text{oku}\cdot\text{R}\cdot\text{una}$

17. $X\bullet an = X\bullet al$ q.v.
18. $ana\bullet X$ \equiv $oku\bullet S\bullet gula \rightarrow oku\bullet R\bullet agula$
 $\downarrow \qquad \qquad \downarrow$
 $F\bullet S\bullet gul\bullet L \qquad F\bullet R\bullet agul\bullet L$
19. $X\bullet ana \sim X\bullet iana$ \equiv (1) $oku\bullet S\bullet maala$
(2) $F\bullet S\bullet mmaali$
20. $aniso\bullet X$ \equiv $oku\bullet S\bullet nkuna \rightarrow F\bullet S\bullet nkun\bullet L$
21. $ante\bullet X$ \equiv $oku\bullet S\bullet maasa \rightarrow oku\bullet R\bullet amaasa$
 $\downarrow \qquad \qquad \downarrow$
 $F\bullet S\bullet maasa \qquad F\bullet R\bullet amaas\bullet L$
22. $anti\bullet X$ \equiv (1) $oku\bullet S\bullet konta \rightarrow oku\bullet R\bullet \mathbf{U}ta \quad F\bullet S\bullet konta$
 $\downarrow \qquad \qquad \downarrow$
 $F\bullet R\bullet \mathbf{U}t\bullet L$
(2) $omu\bullet wuga\bullet Z$
23. $apo\bullet X$ \equiv $oku\bullet S\bullet wala \rightarrow F\bullet S\bullet wal\bullet L$
 $oku\bullet S\bullet suula \rightarrow F\bullet S\bullet suul\bullet L$
24. $apr\grave{e}s\bullet X = after\bullet X$ q.v.
25. $X\bullet ar = X\bullet al$ q.v.
26. $arch\bullet X$ \equiv $sse\bullet F_+\bullet S$ (, where $F_0 = B\bullet F_2$)
27. $X\bullet arium \sim X\bullet ary$ \equiv $oku\bullet S\bullet wila \rightarrow oku\bullet R\bullet \mathbf{I}la$
 $\downarrow \qquad \qquad \downarrow$
 $F\bullet S\bullet wilo \qquad F\bullet R\bullet \mathbf{I}lo$
28. $artificial\ X$ \equiv $F\bullet S\bullet nnana$
29. $X\bullet ary = X\bullet arium, X\bullet al$ q.v.
30. $X\bullet asis \sim X\bullet osis$ \equiv $F\bullet \mathbf{l}wala\bullet Z$
31. $X\bullet aster$ \equiv $oku\bullet S\bullet geenya \rightarrow oku\bullet R\bullet ageenya$
 $\downarrow \qquad \qquad \downarrow$

		$F\cdot S\cdot \text{ton}\cdot L$	$F\cdot R\cdot \text{aton}\cdot L$
42. cata •X	≡	$\text{oku}\cdot S\cdot \text{gala} \rightarrow \text{oku}\cdot R\cdot \text{agala}$	
		↓ ↓	
		$F\cdot S\cdot \text{gal}\cdot L$	$F\cdot R\cdot \text{agal}\cdot L$
43. X •cele	≡	$F\cdot \text{zimba}\cdot Z$	
44. centi •X	≡	$\text{senti}\cdot S/ \text{ssepi}\cdot S$ (SI 10 ⁻²)	
45. circum •X	≡	$\text{oku}\cdot S\cdot \text{buga} \rightarrow \text{oku}\cdot R\cdot \text{abuga}$	
		↓ ↓	
		$F\cdot S\cdot \text{bug}\cdot L$	$F\cdot R\cdot \text{abug}\cdot L$
46. cis •X	≡	$\text{oku}\cdot S\cdot \text{luna} \rightarrow F\cdot S\cdot \text{lun}\cdot L$	
47. co •X	≡	(1) $\text{oku}\cdot S\cdot \text{wama} \rightarrow \text{oku}\cdot R\cdot \text{awama}$	
		↓ ↓	
		$F\cdot S\cdot \text{wam}\cdot L$	$F\cdot R\cdot \text{awam}\cdot L$
		(2) $\text{oku}\cdot S\cdot \text{mala} \rightarrow \text{oku}\cdot R\cdot \text{amala}$	
		↓ ↓	
		$F\cdot S\cdot \text{mal}\cdot L$	$F\cdot R\cdot \text{amal}\cdot L$
48. coeno •X	≡	$\text{oku}\cdot S\cdot \text{wama} \rightarrow F\cdot S\cdot \text{wam}\cdot L$	
49. common X	≡	$\text{oku}\cdot S\cdot \text{wama} \rightarrow F\cdot S\cdot \text{wam}\cdot L$	
50. complex X	≡	$[F\cdot S F_a\cdot \text{kaali}] \rightarrow F\cdot S\cdot \text{kkaali}$	
51. compound X	≡	$[F\cdot S F_a\cdot \text{gatte}] \rightarrow F\cdot S\cdot \text{ggatte}$	
52. comprehensive X	≡	$[F\cdot S F_a\cdot \text{zinge}] \rightarrow F\cdot S\cdot \text{zzinge}$	
53. computer X	≡	$[F\cdot S F_{\text{pro}}\cdot \text{a embaziso}] \rightarrow F\cdot S\cdot \text{bbaziso}$	
54. con •X ~ com •X	≡	$\text{oku}\cdot S\cdot \text{wama} \rightarrow \text{oku}\cdot R\cdot \text{awama}$	
		↓ ↓	
		$F\cdot S\cdot \text{wam}\cdot L$	$F\cdot R\cdot \text{awam}\cdot L$
55. contra •X ~ counter •X	≡	(1) = anti •X q.v.	

- (2) $oku\bullet S\bullet kasa \rightarrow oku\bullet R\bullet akasa$
 $\downarrow \qquad \qquad \downarrow$
 $F\bullet S\bullet kas\bullet L \qquad F\bullet R\bullet akas\bullet L$
56. X counterpart $\equiv F\bullet S\bullet kas\bullet L$
57. cross•X $\equiv oku\bullet S\bullet saaba \rightarrow oku\bullet R\bullet asaaba$
 $\downarrow \qquad \qquad \downarrow$
 $F\bullet S\bullet saab\bullet L \qquad F\bullet R\bullet asaab\bullet L$
58. crypto•X $\equiv oku\bullet S\bullet kiba \rightarrow oku\bullet R\bullet akisa$
 $\downarrow \qquad \qquad \downarrow$
 $F\bullet S\bullet kis\bullet L \qquad F\bullet R\bullet akis\bullet L$
59. X•cule ~ X•culus ~ X•cle $\equiv aka\bullet S$
60. cyber•X $\equiv F\bullet S\bullet kkasi$
61. de•X $\equiv (1) \quad oku\bullet S\bullet wuka, oku\bullet S\bullet wula$
 $(2) \quad oku\bullet S\bullet wuta, oku\bullet S\bullet wusa$
62. deca•X $\equiv deka\bullet S/ walu\bullet S\bullet ena$ (SI 10¹)
63. deci•X $\equiv desi\bullet S/ wapi\bullet S$ (SI 10⁻¹)
64. demi•X $\equiv oku\bullet S\bullet nusa \rightarrow F\bullet S\bullet nus\bullet L$
65. deputy X $\equiv F\bullet S\bullet ssigile$
66. dextro•X $\equiv [F\bullet S \text{ ku ddyo}] \rightarrow F\bullet S\bullet ddyo$
67. di•X = bi(n)•X q.v.
68. dia•X $\equiv (1) \quad oku\bullet S\bullet yima \rightarrow oku\bullet R\bullet ayima$
 $\downarrow \qquad \qquad \downarrow$
 $F\bullet S\bullet yim\bullet L \qquad F\bullet R\bullet ayim\bullet L$
 $(2) \quad = \text{cross}\bullet X \text{ q.v.}$
69. diplo•X $\equiv F\bullet S\bullet bbilibaze$
70. dis•X $\equiv (1) \quad = \text{de}\bullet X \text{ q.v.}$

		(2)	$F \cdot ta \cdot R \cdot a \cdot (Z)$
71. discrete X	≡		$oku \cdot S \cdot nyula \rightarrow oku \cdot R \cdot anyula$
			$\begin{array}{ccc} \downarrow & & \downarrow \\ F \cdot S \cdot nyul \cdot L & & F \cdot R \cdot anyul \cdot L \end{array}$
			$\square oku \cdot S \cdot nyula \# oku \cdot S \cdot nyila$
72. X•dom	≡	(1)	obu•S
		(2)	F•S•ma
73. double X	≡		F•S•bbilibaze
74. down•X	≡		$oku \cdot S \cdot gala \rightarrow oku \cdot R \cdot agala$
			$\begin{array}{ccc} \downarrow & & \downarrow \\ F \cdot S \cdot gal \cdot L & & F \cdot R \cdot agal \cdot L \end{array}$
75. duo•X	≡	(1)	$F_{nom} \cdot nna \cdot F_+ \cdot S \cdot F_{num} \cdot bilye$
		(2)	$F \cdot F_+ \cdot S \cdot F_{num} \cdot bili$
76. duplo•X = diplo•X q.v.			
77. X duration/ time/ period	≡		ekiseela•C⁺
78. dys•X	≡		F•S•zzibu
79. e- X (< electronic X)	≡		Z-m (<F_a•memoonata)
80. ecto•X	≡		F•S•bwa
81. X•ectomy	≡		F•saama•Z
82. X•ed¹	≡		F•nna•Z
83. X•ed²	≡		F•R•wa/ e/ u
84. eigen•X = auto•X q.v.			
85. X•eme	≡		F•S•lalama
86. empty- X	≡		F•leela•Z
87. en•X ~ endo•X ~ ento•X	≡		F•S•mwa

88. **enanti**•X = **anti**•X q.v.

89. X•**en** ≡ F•R•**wa/ e/ u**

90. **epi**•X ≡ F•S•**kunga** (<oku•S•**kunga**)

91. **equi**•X ≡ oku•S•**nkana** → oku•R•**ankana**
 ↓ ↓
 F•S•**nkan**•L F•R•**ankan**•L

92. X•**er** = X•**al** q.v.

93. X•**ery** = X•**al** q.v

94. X•**esce** ≡ oku•S•**wala/ wawa** → F•S•**wal**•L / **waw**•L

95. X•**ese** ≡ (1) F•S•**wa/ ta**

(2) F•**nna**•Z

(3) olu•**nna**•Z

96. X•**esque** ≡ oku•S•**gela** → F•S•**gel**•L

97. X•**etum** ≡ F•S•**wilo**

98. **eu**•X ≡ (1) F•S•**ggwoomu, F•R•a**•**ggwoomu**

(2) oku•R•**awooma**

99. **ex**•X ≡ (1) oku•S•**bwa** → F•S•**bwa**

(2) oku•S•**gula** → oku•R•**agula**

↓ ↓
 F•S•**gul**•L F•R•**agul**•L

(3) oku•S•**yima** → oku•R•**ayima**

↓ ↓
 F•S•**yim**•L F•R•**ayim**•L

(4) oku•S•**wula** → oku•R•**Ula**

↓ ↓

F•S•wul•L F•R•ul•L

- (5) oku•S•waza → F•S•waz•L
- (6) omu•yako•Z
100. **exa•X** ≡ **exa•S/ ogu•S•ena** (SI 10¹⁸; Computing 2⁶⁰)
101. **exo•X** ≡ (1) oku•S•bwala
- oku•S•bwala # oku•S•bwaka; exo•X # endo•X
102. **extensive X** ≡ **F•R•anyuut•L** (<oku•R•anyuuta)
103. **extra•X** ≡ (1) oku•S•bwela → F•S•bwela
- (2) oku•S•yela → oku•R•ayela
- ↓ ↓
- F•S•yel•L F•R•ayel•L**
104. **extreme X** ≡ **F•S•jja, F•R•ajj•L** (<oku•S•jja, oku•R•ajja)
105. **extro•X** ≡ oku•S•bwala
106. **X•facient** ≡ **F•kola•Z**
107. **fake X** ≡ **F•S•gginge**
108. **X-fashion** ≡ oku•S•gela → F•S•gel•L
109. **femto•X** ≡ **femto•S/ sseka•S** (SI 10⁻¹⁵)
110. **X•ferous ~ X•gerous** ≡ (1) oku•S•na
- (2) oku•S•baama/ baaka
111. **X•fold** ≡ oku•S_{num}•baza → F•S_{num}•baze
112. **fore•X** ≡ oku•S•maasa → oku•R•amaasa
- ↓ ↓
- F•S•maasa F•R•amaas•L**
113. **X•form** ≡ **F•kula•S⁺**

114. X•free	≡	F•buuma/ buuka•Z
115. X frequency	≡	omu•R•atelo
116. front X	≡	oku•S•bela → F•S•bela
117. X•ful	≡	(1) oku•S•na (2) F•jjudde•Z
118. further X	≡	oku•S•kila → oku•R•akila \downarrow \downarrow F•S•kila F•R•akil•L
119. X•gen	≡	F•zaala/ zaalwa•Z
120. general X	≡	ttaba•Z
121. X•genesis	≡	oku•S•waya → F•S•way•L
122. X•gerous = X•ferous q.v.		
123. giga•X	≡	giga•S/ sselu•S•ena (SI 10 ⁹ ; Computing 2 ³⁰)
124. gradual X	≡	oku•S•wola → oku•R•awola \downarrow \downarrow F•S•wol•L F•R•awol•L
125. X•gram	≡	F•kobwa•Z
126. X•graph	≡	F•koba•Z
127. X•graphy	≡	(1) enkoba•Z (2) kakoba•Z
128. half X	≡	oku•S•nusa → oku•R•anusa \downarrow \downarrow F•S•nus•L F•R•anus•L
129. half X•ed	≡	(1) F•R•e•nusa (2) F•S•nna•nusa

130. **haplo**•X ≡ oku•S•niina → F•S•nniina
131. **head** of X ≡ omu•kuu•Z
132. **hecto**•X ≡ hekto•S/ sselu•S•ena (SI 10²)
133. **hemi**•X = **half**•X q.v.
134. **hetero**•X ≡ oku•S•yawa → F•S•yawa
135. **holo**•X ≡ oku•S•va → F•S•va
136. **homeo**•X ≡ oku•S•kyana → F•S•kyana
137. **homo**•X ≡ oku•S•yuwa → F•S•yuwa
138. **hyper**•X ≡ (1) sselu•S
(2) oku•S•gulaja → F•S•gulaja
139. **hypo**•X ≡ (1) wapi•S
(2) oku•S•galaja → F•S•galajo
140. X•i ≡ (1) oku•S•ta → F•S•ta
(2) F•nna•Z
142. X•iana = X•ana q.v.
143. X•iatrics ~ X•iatry ≡ kasawa•Z
144. X•ic ~ X•ical = X•al q.v.
145. X•ics ~ X•ic ≡ kanna•Z
146. **idio**•X = **auto**•X q.v.
147. X•ile ≡ (1) F_{pro}•a•(o)•ku•R•a
(2) oku•R•ayinza → F•R•ayinzo
(3) oku•S_{num}•kuma
148. X•illion ≡ aka•S_{num}•kkadde

161. **iso**•X = **equi**•X q.v.

162. X•**ite** ≡ (1) F_a•S•**ta**

(2) F•**nna**•Z

163. X•**itis** ≡ F•**yaka**•Z

164. X•**ive** ≡ F•R•**i**

165. X•**ize** ≡ oku•S•**wala/ waza**

166. **juxta**•X ≡ oku•S•**alaana** → oku•R•**alaana**

167. **kilo**•X ≡ **kilo**•S/ **olu**•S•**ena** (SI 10³; Computing 2¹⁰)

168. X•**latry** ≡ F•**sinza**•Z

169. X•**less** ≡ F•S•**wunu**

170. X•**let** ≡ **aka**•S

171. X•**like** ≡ F•**wanga**•Z

172. X•**logy** ≡ **kanna**•Z, (**kalojja**•Z)

173. **macro**•X ≡ (1) **walu**•S•**ena**

(2) F•S•**ddene**, F•S•**ggwanvu**

□ **ultramacro**•X ≡ F•S•**ddeneja**

174. **macromacro**•X ≡ (1) **wagu**•S

(2) F•S•**ddenejja**, F•S•**ggwanvujja**

175. **mal**•X = **dys**•X q.v.

176. X•**mania** ≡ F•**lala**•Z

177. **many**-X ≡ (1) F•F₊•S•F_{num}•**ngi**

(2) F_{nom}•**nna**•F₊•S•F_{num}•**ngye**

- (3) $F_a \bullet \text{ngibaze}$
- (4) $F_{\text{nom}} \bullet R \bullet a \bullet F_{\text{num}} \bullet \text{ngye}$
178. **maxi**•X \equiv **olu**•S•ena
179. **medi**•X \equiv **oku**•S•kata \rightarrow **F**•S•kata
180. **mega**•X \equiv **mega**•S/ **walu**•S•ena (SI 10⁶; Computing 2²⁰)
181. **mer**•X \sim X•**mer** \sim X•**merous** \equiv (1) **oku**•S•ca \rightarrow **F**•S•cca
- (2) **F**•S•ttundu
182. **meso**•X = **medi**•X q.v.
183. **meta**•X \equiv (1) **oku**•S•gonga \rightarrow **F**•S•gonga
- (2) **oku**•S•yela \rightarrow **F**•S•yela
- (3) **oku**•S•kyuka \rightarrow **F**•S•kyuka
184. X•**metrics** \sim X•**metry** \equiv **kapima**•Z
185. **micro**•X \equiv (1) **mikro**•S/ **wapi**•S•ona (SI 10⁻⁶)
- (2) **F**•S•ttono
- \square **ultramicro**•X \equiv **F**•S•ttonoja; **micromicro**•X \equiv **F**•S•ttonojja
186. **micromicro**•X \equiv **waka**•S
187. **mid**•X = **medi**•X q.v.
188. **milli**•X \equiv **milli**•S/ **epi**•S•ona (SI 10⁻³)
189. **mini**•X \equiv **F**•S•ttono, **F**•S•ffunda
190. **mio**•X \equiv **F**•**keewa**•Z, **oku**•R•akeewa
191. **mixed**•X \equiv **oku**•S•yawa \rightarrow **F**•S•yawa
192. **mono**•X \equiv (1) **F**•F₁•S•F_{num}•**mu**
- (2) **F**_a•**mubaze**

- (3) $F_{\text{nom}} \bullet \mathbf{nna} \bullet F \bullet S \bullet F_{\text{num}} \bullet \mathbf{mwe}$
- (4) $F_{\text{nom}} \bullet \mathbf{R} \bullet \mathbf{a} \bullet F_{\text{num}} \bullet \mathbf{mwe}$
193. $X \bullet \mathbf{morphic} = X \bullet \mathbf{form}$ q.v.
194. $\mathbf{multi} \bullet X = \mathbf{many} \text{-} X$ q.v.
195. $\mathbf{nano} \bullet X \equiv \mathbf{nano} \bullet S / \mathbf{ssepi} \bullet S \bullet \mathbf{ona}$ (SI 10^{-9})
196. $\mathbf{neo} \bullet X \equiv$
- (1) $\mathbf{oku} \bullet S \bullet \mathbf{gya} \rightarrow F \bullet S \bullet \mathbf{ggya}$
- (2) $F \bullet S \bullet \mathbf{ggya}, F \bullet R \bullet \mathbf{agy} \bullet L$
197. $\mathbf{near} X \equiv$
- (1) $\mathbf{oku} \bullet S \bullet \mathbf{kumpa}$
- (2) $F \bullet S \bullet \mathbf{kkumpa}$
198. $X \mathbf{network} \equiv \mathbf{omutimbagano}$ gwa $F_+ \bullet S$
199. $X \bullet \mathbf{nomics} \sim X \bullet \mathbf{nomy} \equiv \mathbf{kanna} \bullet Z$ ($\mathbf{kateeka} \bullet Z$)
200. $\mathbf{non} \bullet X \equiv$
- (1) $F \bullet \mathbf{ta} \bullet R \bullet \mathbf{a} \bullet Z$
- (2) $\mathbf{oku} \bullet S \bullet \mathbf{leka} \rightarrow F \bullet S \bullet \mathbf{leka}$
201. $X \bullet \mathbf{oid} \sim X \bullet \mathbf{ode} \equiv F \bullet \mathbf{wanga} \bullet Z$
202. $\mathbf{oligo} \bullet X \equiv F \bullet S \bullet \mathbf{bbatu}$
203. $X \bullet \mathbf{oma} \equiv F \bullet \mathbf{zimba} \bullet Z$
204. $\mathbf{omni} \bullet X = \mathbf{all} \text{-} X$ q.v.
205. $\mathbf{one} \text{-} X = \mathbf{mono} \bullet X$ q.v.
206. $X \mathbf{organization} \equiv \mathbf{omukungo}$ gwa $F_+ \bullet S$
207. $\mathbf{original} X \equiv$
- (1) $\mathbf{oku} \bullet S \bullet \mathbf{nona}$
- (2) $F \bullet S \bullet \mathbf{nnona}$
208. $\mathbf{ortho} \bullet X \equiv$
- $\mathbf{oku} \bullet S \bullet \mathbf{tuuka} \rightarrow \mathbf{oku} \bullet R \bullet \mathbf{atuuka}$
- $\downarrow \qquad \qquad \downarrow$
 $F \bullet S \bullet \mathbf{ttuuka} \qquad F \bullet R \bullet \mathbf{atuuko}$

209. **X•ose** \equiv (1) **oku•S•ta** \rightarrow **F•S•ta**
 (2) **F•ma•Z**
210. **X•osis** \equiv **F•lwala•Z**
211. **X•ous** = **X•ose** q.v.
212. **out•X** \equiv (1) **oku•S•bwa** \rightarrow **F•S•bwa**
 (2) **oku•S•bwala** \rightarrow **F•S•bwala**
 (3) **oku•S•leebya** \rightarrow **oku•R•aleebya**
 \downarrow \downarrow
F•S•leeby•L **F•R•aleeby•L**
213. **over•X** \equiv (1) **oku•S•gwa** \rightarrow **F•S•gwa**
 (2) **oku•S•wagwa** \rightarrow **F•S•wagwa**
 (3) **oku•S•sukka** \rightarrow **oku•R•asukka**
 \downarrow \downarrow
F•S•sukka **F•R•asukk•L**
 (4) **F•sukka•Z, ssukka•Z**
214. **own-X** = **auto•X** q.v.
215. **paleo•X** \equiv **oku•S•kkaddejja** \rightarrow **F•S•kkaddejja**
216. **palin•X** = **back•X** q.v.
217. **pan•X** = **all•X** q.v.
218. **para•X**¹ \equiv (1) **oku•S•laana** \rightarrow **oku•R•alaana**
 \downarrow \downarrow
F•S•laana **F•R•alaan•L**
 (2) **oku•S•kiiba** \rightarrow **oku•R•akiiba**
 \downarrow \downarrow
F•S•kiiba **F•R•akiib•L**
219. **para•X**² \equiv **oku•S•taasa** \rightarrow **F•S•taasa**
220. **X•parous** = **F•zaala•Z**

221. **particular X** ≡ **oku•S•ca → F•S•ca**
222. **pen(e)•X = near X q.v.**
223. **X•penia** ≡ **F•liba•Z**
224. **per•X = dia•X q.v.**
225. **peri•X** ≡ **oku•S•buga → F•S•buga**
226. **X•person** ≡ (1) **omu•S•ta**
 (2) **omu•(nna)•Z**
 (3) **owa•F₁•F₂•S**
227. **peta•X** ≡ **peta•S/ ssegu•S (SI 10¹⁵; Computing 2⁵⁰)**
228. **X•philia** ≡ **F•ee•yuna•Z**
229. **X•phobia** ≡ **F•kyawa•Z**
230. **pico•X** ≡ **piko•S/ waka•S (SI 10⁻¹²)**
231. **plagio•X** ≡ **F•S•ssulika**
232. **pleo•X** ≡ **F•S•ggwela**
233. **pluri•X** ≡ **F•S•ggwaka**
234. **poikilo•X** ≡ **F_a•S•kyuna**
235. **poly•X = many-X q.v.**
236. **post•X = after-X q.v.**
237. **potenti•X** ≡ **F•S•jjinza**
238. **pre•X** ≡ **oku•S•maasa → F•S•maasa**

248. X- ready ≡ F•linze•Z
249. recti•X ≡ (1) oku•S•tuuka → oku•R•atuuka
(2) F•S•ttuuka; F•R•atuuk•L
250. retro•X ≡ oku•S•ka → oku•R•aka
↓ ↓
F•S•ka F•R•ak•L
251. same-X ≡ (1) oku•S•yuwa → F•S•yuwa
(2) oku•S•kima → F•S•kima
252. self-X ≡ (1) oku•S•yina, oku•R•ayina
(2) oku•ee•R•a
253. semi•X = half•X q.v.
254. serial X = F•S• nnyilo
255. side X ≡ (1) oku•S•luuya → oku•R•aluuya
(2) F•S•dduuya; F•R•aluuy•L
256. similar to X = F•faana•Z
257. simple X ≡ F•S•nniina
258. simultaneous X ≡ F•S Fa•seelankanyi
259. single X ≡ F•S Fa•mubaze
260. sinistro•X ≡ oku•S•kona, F•S•kkono
261. sole X ≡ oku•S•yakka → F•S•yakka
262. some X ≡ oku•S•wunna → F•S•wunna
263. X•some ≡ (1) F•S_{num}•ma
(2) F•S•ca
(3) F•zaala•Z

264. X•speak	≡	F•S•ddikya
265. X-shaped	≡	F•kula•S ⁺
266. X•ship	≡	F•S•ma
267. special X	≡	(1) F•S•kkiza
		(2) ttuba•Z
		□ ttuba•Z # ttaba•Z
268. X•stasis	≡	F•komya•Z
269. step•X	≡	F•S•ffumbo
270. X-style	≡	F•S•gel•L
271. X structure	≡	omuzimbe gwa F ₊ •S
272. sub•X	≡	(1) wapi•S
		(2) oku•S•gala → oku•R•agala
		$\begin{array}{ccc} \downarrow & & \downarrow \\ \text{F}\cdot\text{S}\cdot\text{gala} & & \text{F}\cdot\text{R}\cdot\text{agal}\cdot\text{L} \end{array}$
273. sudden X	≡	F•S•yanga, oku•R•ayanga
274. super•X	≡	(1) walu•S
		(2) F•S•gula, oku•R•agula □ cf sub•X
		(3) = over•X q.v.
275. syn•X = con•X ~ com•X q.v.		
276. X system	≡	omuyungo gwa F ₊ •S
277. systematic X	≡	F•R•amugo
		□ oku•R•amaga # oku•R•amuga
278. sui•X	≡	oku•ee•R•a
279. tauto•X	≡	F•S•kkima

280. **tele•X** ≡ **F•S•ggwala** (<oku•S•wala <ewala)
281. **ter•X** ≡ (1) **F•F₊•F_{num}•satu**
 (2) **F_{nom}•nna•F₊•S•F_{num}•satwe**
282. **tera•X** ≡ **tera•S/ wagu•S** (SI 10¹²; Computing 2⁴⁰)
283. **top X** ≡ **F•S•ttikko**
284. **trans•X** ≡ (1) **oku•S•yima → oku•R•ayima**
 (2) **oku•S•lula → oku•R•alula**
 (3) **oku•S•yela → oku•R•ayela**
 (4) **oku•S•saaba → oku•R•asaaba**
285. **tri•X**: cf **bi(n)•X**
286. **X•tuple** ≡ **F•S_{num}•baze**
287. **uber•X** ≡ **F•S•ggulajja**
288. **ultra•X** ≡ (1) **F•S•ggulaja**
 (2) **oku•S•lula; F•S•ddula**
 (3) **oku•S•yela; F•S•jjela**
289. **ultramacro•X** ≡ (1) **F•S•gulaja**
 (2) **sselu•S•ena**
290. **ultramicro•X** ≡ (1) **F•S•galaja**
 (2) **ssepi•S•ona**
291. **un•X** ≡ (1) **F•ta•R•a•Z**
 (2) **oku•S•konta → oku•R•Uta**
 (3) **oku•R•Uka/ Ula**

- (2) oku•S•waZa
305. X•ware ≡ F•S•nywama
306. X•work = (1) omu•S•cama
- (2) omuzimbe gwa F+•S
- (3) oku•S•yunga
307. worth X-ing, X•worthy = oku•saana/ gasa•ku•R•a
308. X•y ≡ (1) F_a•S•ta
- (2) F•nna•Z
309. yotta•X ≡ yotta•S/ ssegu•S•ena (SI 10²⁴)
310. yocto•X ≡ yokto•S/ sseka•S•ona (SI 10⁻²⁴)
311. zepto•X ≡ zepto•S/ waka•S•ona (SI 10⁻²¹)
312. zetta•X ≡ zetta•S/ wagu•S•ena (SI 10²¹)

PART 2: GERMAN-LUGANDA FORMULAE

1. X•**aehnlich** ≡ oku•S•faana = [F'•S' okufaanana F•S]
- oku•S•faana → F•S•faana
2. **Allein**•X ≡ oku•S•yakka = [F'•S' okuba F•S kyokka]
- oku•S•yakka → F•S•yakka

		F•S•ggana	F•R•agano
39. X•gerecht	≡	F•S•ssimba	
40. Gesamt•X	≡	oku•S•zinga	→ F•S•zzinga
41. Gleich•X	≡	oku•S•nkana	→ oku•R•ankana
		↓	↓
		F•S•nkan•L	F•R•ankan•L
42. Gross•X	≡	(1) F•S•nnene	
		(2) oku•R•anena	→ F•R•anen•L
43. Grund•X	≡	F•S•ssingi	
44. X•gut	≡	F•S•mmaali	
45. X•haft	≡	oku•S•wanga	→ F•S•wanga
46. Halb•X	≡	oku•S•nusa	→ oku•R•anus•L
		↓	↓
		F•S•nus•L	F•R•anus•L
47. X•haltig	≡	oku•S•baama	→ F•S•baama
48. Haupt•X	≡	oku•S•twa	→ F•S•twa
49. Heim•X	≡	oku•S•yeka	→ oku•R•ayeka
		↓	↓
		F•S•yeka	F•R•ayek•L
50. Hinter•X	≡	oku•S•bega	= [F'•S' okuba F•S eky'emabega]
		oku•S•bega	→ F•S•bega
51. Hoch•X	≡	oku•S•gula	→ oku•R•agula
		↓	↓
		F•S•gula	F•R•agul•L
52. Hoechst•X	≡	F•S•gulajja	
53. X•hungrig	≡	oku•S•yala	→ F•S•yala
54. Innen•X	≡	oku•S•mwa	= [F'•S' okuba F•S eky'omunda]
		oku•S•mwa	→ F•S•mwa
55. inner•X	≡	oku•S•munda	= [F'•S' okuba munda mwa F•S]

oku•S•munda → F•S•munda

56. Kern•X ≡ F•S•ddamwa
57. Klein•X ≡ (1) F•S•ttono
 (2) oku•R•atona → F•R•aton•L
58. Kreuz•X ≡ (1) F•S•kkiika
 (2) F•S•ssaaba
59. X•kunde ≡ kamanya•Z
60. X•lang ≡ F•S•ggwanva
61. X•leer ≡ F•S•ddeele
62. X•lehre ≡ kamanya•Z
63. Leicht•X ≡ F•S•ggwewa
64. X•los ≡ oku•S•wuna → F•S•wunu
65. X•luestern ≡ F•S•ttinka
66. X•macher ≡ kkola•Z
67. X•maessig ≡ oku•S•gonda → F•S•gonda
68. X•mal ≡ oku•S•lunda → F•S•lunda
69. X•massen ≡ oku•S•gela → oku•R•agela
 $\begin{array}{ccc} \downarrow & & \downarrow \\ \text{F}\cdot\text{S}\cdot\text{gel}\cdot\text{L} & & \text{F}\cdot\text{R}\cdot\text{agel}\cdot\text{L} \end{array}$
70. mehr•X ≡ (1) F•F₊•S•F_{num}•ngi
 (2) F_{nom}•nna•F₊•S•F_{num}•ngye
 (3) F_a•ngibaze
 (4) F_{nom}•R•a•F_{num}•ngye

81. **Quer**•X = **Kreuz**•X q.v.
82. **recht**•X \equiv (1) oku•S•**tuuka** \rightarrow oku•R•**atuuka**
 (2) F•S•**ttuuka** F•R•**atuuk**•L
83. X•**reich** \equiv (1) oku•S•**wela** \rightarrow oku•R•**awela**
 (2) F•S•**ggwela** F•R•**awel**•L
84. **Rueck**•X \equiv oku•S•**ka** \rightarrow oku•R•**aka**
 \downarrow \downarrow
 F•S•**ka** F•R•**ak**•L
85. **Schein**•X \equiv (1) oku•S•**dyeka** \rightarrow oku•R•**adyeka**
 (2) F•S•**ddyeka**; F•R•**adyek**•L
86. **Schwer**•X \equiv (1) oku•S•**lemba** \rightarrow oku•R•**alemba**
 (2) F•S•**ddembe**; F•R•**alemb**•L
 (3) oku•S•**ziba** \rightarrow oku•R•**aziba**
 (4) F•S•**zzibu**; F•R•**azib**•L
 (5) oku•S•**zita** \rightarrow oku•R•**azita**
 (6) F•S•**zzito**; F•R•**azit**•L
87. X•**seitig** \equiv F•**nna**•**njuyi**•S_{num}•**e**
88. **Selbst**•X = **Auto**•X q.v.
89. X•**sicher** \equiv F•**lemya**•Z
90. **Sonder**•X \equiv (1) oku•S•**yuuka** \rightarrow oku•R•**ayuuka**
 (2) F•S•**juuka** F•R•**ayuuk**•L
91. **Spitzen**•X \equiv F•S•**ttikko**
92. X•**sucht** \equiv F•**sibe**•Z
93. X•**tauglich** \equiv oku•S•**saana** \rightarrow F•S•**saana**

(2) $F \bullet S \bullet ssaana; F \bullet R \bullet asaan \bullet L$

109. $X \bullet wesen \equiv ebya \bullet F_1 \bullet F_2 \bullet S$

110. $wieder \bullet X \equiv \begin{array}{ccc} oku \bullet S \bullet nata & \rightarrow & oku \bullet R \bullet anata \\ \downarrow & & \downarrow \\ F \bullet S \bullet nat \bullet L & & F \bullet R \bullet anat \bullet L \end{array}$

111. $Wohl \bullet X \equiv (1) \quad oku \bullet S \bullet lunga \rightarrow oku \bullet R \bullet alunga$

(2) $F \bullet S \bullet ddunga; F \bullet R \bullet alung \bullet L$

112. $X \bullet wuerdig = X \bullet wert$ q.v.

113. $zurecht \bullet X = recht \bullet X$ q.v.

114. $zusammen \bullet X \equiv oku \bullet R \bullet awama \rightarrow F \bullet R \bullet awam \bullet L$

115. $Zwischen \bullet X \equiv oku \bullet S \bullet wakata = [F' \bullet S' \text{ okuba mu makati ga } F \bullet S]$

$oku \bullet S \bullet wakata \rightarrow F \bullet S \bullet wakata$