

## First Asia Pacific Linguistics Olympiad

May 5, 2019

Solutions

Problem 1. Rules

- $k\ddot{o}n$  — 1,  $le\ddot{b}etse$  — 2,  $ad\ddot{e}$  — 3,  $ts'ag\ddot{u}s\ddot{e}$  — 4,  $t\ddot{u}de$  — 5.
- $10 = \text{tomíni}$   $10 Y = \text{tomínékwa } Y \quad (2 \leq Y \leq 9)$   
 $100 = \text{ŋamiá } k\ddot{o}n$   $100 Y = \text{ŋamiá } Y \quad (2 \leq Y \leq 9)$   
 $1000 = \text{álika } k\ddot{o}n$   $1000 Y = \text{álfika } Y \quad (2 \leq Y \leq 999)$
- cf. **tomíni** (< Turkana *tomon*), **ŋamiá**, **álika** (< Swahili *mia*, *elfu*)
- $5 + X = \begin{cases} t\ddot{u}de \boxed{\text{ńda kídfí}} X & (X = 1) \\ t\ddot{u}de \boxed{\text{ńda kidí}} X & (2 \leq X \leq 4) \end{cases}$   
 $10 Z + W = \begin{cases} 10 Z \boxed{\text{ńda nébëe}} W & (1 \leq Z \leq 9, W = 1) \\ 10 Z \boxed{\text{ńda jirimí}} W & (1 \leq Z \leq 9, 2 \leq W \leq 9) \end{cases}$   
 $100 Z + W = 100 Z \boxed{\text{ńda}} W \quad (1 \leq Z \leq 9, 10 \leq W \leq 99)$   
 $1000 Z + W = 1000 Z \boxed{\text{ńda}} W \quad (1 \leq Z \leq 999, 100 \leq W \leq 999)$
- Final vowel is deleted (e.g.  $ts'ag\ddot{u}s\ddot{e} \rightarrow ts'ag\ddot{u}s$ ).

Answers

- (a) a. 256 ( $= 4^4$ ); b. 4096 ( $= 8^4$ ); c. 6561 ( $= 9^4$ ); d. 10000 ( $= 10^4$ ); e. 1296 ( $= 6^4$ ); f. 81 ( $= 3^4$ ); g. 16 ( $= 2^4$ ); h. 1 ( $= 1^4$ ); i. 2401 ( $= 7^4$ ); j. 625 ( $= 5^4$ ).
- (b) k. **álfika tomíni** **ńda** **jirimí** **lebets** — 12000  
l. **tomínékwa** **túde** **ńda** **kídfí** **k\ddot{o}n** — 60  
m. **tomínékwa** **túde** **ńda** **nébëe** **k\ddot{o}n** — 51  
n. **álfika** **ŋamiá** **k\ddot{o}n** — 100000
- (c) 3108 — **álfika** **ad\ddot{e}** **ńda** **ŋamiá** **k\ddot{o}n** **ńda** **túde** **ńda** **kidí** **ad**
- (d) 14641 — **álfika** **tomíni** **ńda** **jirimí** **ts'ag\ddot{u}s\ddot{e}** **ńda** **ŋamiá** **túde** **ńda** **kídfí** **k\ddot{o}n** **ńda** **tomínékwa** **ts'ag\ddot{u}s\ddot{e}** **ńda** **nébëe** **k\ddot{o}n**

**Problem 2.** Rules

1. Sentence structure: (Ta) (O) V (S) (Ta is used for a negative question.)

2. Verb structure:



- Object:

Stem begins with	C	V
1st person singular	ka-	k-
2nd person singular	i-	dʒ-
3rd person singular	∅-	∅-

(C = consonant, V = vowel)

- Aspect:

$\begin{cases} -\emptyset \\ -\text{si} \\ \begin{cases} -\text{he} & \text{if stem ends with } -\text{a} \\ -\text{ahe} & \text{otherwise} \end{cases} \end{cases}$	$\begin{cases} \dots\text{-ed} \dots \\ \dots \text{ had finished -ing} \dots \\ \dots \text{ was -ing} \dots \end{cases}$
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- Subject: 2nd person singular **-i**, 3rd person singular **-a**.

- Politeness: **-tce**

- Used when communicating with adults of the opposite sex.
- Exception for males: The marker is used when speaking with son-in-laws/father-in-laws.

- Question: 
$$\begin{cases} -\text{na} & \text{positive question} \\ -\text{ne} & \text{negative question} \end{cases}$$

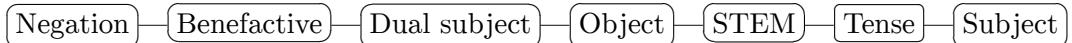
3. **e** → **i** / **\_\_a** (i.e. e is raised to i when followed by a.)

Answers

1. *The dark capuchin monkey told (it) to me.*
2. *Was the owl monkey meeting the woman?*
3. *Hadn't he/she finished looking for the man?*
4. All males, i.e. Manoel, Hwāa, Fwerisi, Tçūki and Fwaboro.
5. All females, i.e. Lomaj, Marja, Isabeli and Marata.
6. Tçūki, Fwaboro and Manoel.
7. **Etoe kuretiahiatçena**
8. **Dʒesenetaatçe kati**
9. **Katçɑ ariahiatçe**
10. **Ibiana**

**Problem 3.** Rules

1. Verb structure:



- Negation: *tee-*

- Benefactive ('for ... '):

	singular	plural
1st person	<i>na-</i>	<i>niya-</i>
2nd person	<i>ka-</i>	<i>kiya-</i>
3rd person	<i>ya-</i>	—

- Dual subject: *aa-*

- Object:

	singular	plural
1st person	<i>na-</i>	<i>ne-</i>
2nd person	<i>ka-</i>	<i>ke-</i>
3rd person	<i>e-</i>	<i>e-</i>
reciprocal		<i>aka-</i>

- Tense:

$$\begin{cases} -p & \text{past } (\neq \text{today}) \\ -g & \text{past (today)} \end{cases}$$

- Subject:

	singular	plural
1st person	<i>-a</i>	<i>-e</i>
2nd person	<i>-e</i>	<i>-aa</i>
3rd person	<i>-i</i>	<i>-ai</i>

2. Meanings of the verbs:

	intransitive	transitive	reciprocal
<i>mee</i>	<i>come</i>	<i>bring</i>	—
<i>doo</i>	—	<i>see</i>	<i>meet</i>
<i>bukai</i>	—	<i>save</i>	<i>save each other</i>
<i>dokai</i>	—	<i>carry</i>	—
<i>wagee</i>	—	—	<i>fight</i>

Answers

- (a) 13. *aameepai* — They two came.  
 14. *teekedoogi* — He did not see you(pl) today.  
 15. *naaameegaa* — You two came for me today.  
 16. *teenadokaiapaa* — You(pl) did not carry me.
- (b) 17. You(sg) saw them today. — *edooge*  
 18. I did not come for him today. — *teeyameega*  
 19. You two saw him for us. — *niyaaaedoopaa*  
 20. They saved each other. — *akabukaipai*
- (c) 21. *kameepi* — (1) He brought you(sg); (2) He came for you(sg).  
 22. *edoope* — (1) You(sg) saw him; (2) You(sg) saw them; (3) We saw him; (4) We saw them.

**Problem 4.** Rules

1. Verb roots: **g-d-l** — grow up; **z-k-n** — grow old; **kh-l** — eat; **h-v** — love; **g-n-v** — steal; **k(~x)-t-v** — write; **b-t-l** — shame; **sh-m-r** — guard.

Root	→	Simple	Intense	Causative	Reflexive
<b>p-’-l</b>	→	<b>pa’al</b>	<b>pi’el</b>	<b>hif’il</b>	<b>hitpa’el</b>
$(C_1)-C_2-C_3$	→	$(C_1)aC_2aC_3$	$(C_1)iC_2eC_3$	$hi(C_1)C_2iC_3$	$hit(C_1)aC_2eC_3$

3. Person and gender:

- Subject = 1st person:  $V_\omega \rightarrow a$ ; suffix **-ti**.
- Subject = 2nd person male:  $V_\omega \rightarrow a$ ; suffix **-ta**.
- Subject = 2nd person female:  $V_\omega \rightarrow a$ ; suffix **-t**.
- Subject = 3rd person female:  $V_\omega (\neq i) \rightarrow \sigma$ ; suffix **-a**.

$(V_\omega = \text{final vowel})$

Answers

- (a) 1. *I grew up.* — **gadalti**  
 2. *She loved (someone).* — **ahəva**  
 3. *She grew up.* — **gadəla**  
 4. *I rewrote (something).* — **kitavti**  
 5. *You(masc) grew old.* — **zakanta**  
 6. *He stole (something) repeatedly.* — **ginev**  
 7. *You(fem) humiliated (someone).* — **bitalt**  
 8. *You(fem) corresponded (with someone).* — **hitxatavt**  
 9. *She wrote (something).* — **katəva**  
 10. *He grew (something).* — **higdil**  
 11. *You(masc) fed (someone).* — **hikhalta**  
 12. *She smuggled (something).* — **higniva**  
 13. *He shamed himself.* — **hitbatel**  
 14. *I guarded (something) firmly.* — **shimarti**
- (b) **zakan** — *He grew old.*  
**katav** — *He wrote (something).*  
**hitshaməra** — *She guarded herself.*  
**ganavt** — *You(fem) stole (something).*
- (c) 15. *I wrote (something).* — **katavti**  
 16. *You(masc) shamed (someone).* — **batal**  
 17. *She loved (someone) back.* — **hitahēv**

**Problem 5.**

- (a)
- |    |           |          |                                 |
|----|-----------|----------|---------------------------------|
| 1. | ئەن       | ärän     | men                             |
| 2. | ئىچىرى    | bïčdïr   | he/she cut                      |
| 3. | ئەئىل     | köñül    | heart                           |
| 4. | ئەتىز     | otuz     | thirty                          |
| 5. | ئەقان     | qayan    | khagan                          |
| 6. | ئەئەئەتەن | tizligig | the knee-bearer, the mighty one |
- (b)
- ئەئەئەن = ölägäm, ölägim, ölgäm, ölgüm, ölügäm, ölügüm,  
ülägäm, ülägim, ülgäm, ülgüm, ülügäm, ülügüm.

- (c)
1. The Old Turkic script is written from right to left.
  2. “Front” and “back” consonant letters:

Adjacent vowels	b	n	t	d	s	r	l	y	k/q	g/y
Front (ä/i/ö/ü)	❖	ئ	ئ	ئ	ئ	ئ	ئ	ئ	ئ (k)	ئ (g)
Back (a/ı/o/u)	ئ	ئ	ئ	ئ	ئ	ئ	ئ	ئ	ئ (q)	ئ (y)

❖ (m), ئ (z), ئ (č), ئ (š) and ئ (ŋ) do not have front/back glyph pairs.

3. Rules for writing vowels (+: written, -: not written):

Vowels	Letter	(1)	(2)	(3)	(4)
a/ä	ئ	-	+	-	-
ı/i	ئ	+	+	-	+
o/u	ئ	+	+	+	-
ö/ü	ئ	+	+	+	-

- (1) first vowel in the word;
- (2) word-finally;
- (3) elsewhere, after a/ä/ı/i;
- (4) elsewhere, after o/u/ö/ü.

4. Syllable structure (C = consonant, V = vowel):

- first syllable: (C)V(C)
- elsewhere: CV(C)

5. The rounded low vowels o and ö appear only in the first syllable.