

Fifteenth International Linguistics Olympiad

Dublin (Ireland), 31 July – 4 August 2017

Individual Contest Problems

Rules for writing out the solutions

Do not copy over the problems. Write down your solution to each problem on a separate sheet or sheets. On each sheet indicate the number of the problem, the number of your seat and your surname. Otherwise your work may be mislaid or misattributed.

Your answers must be well-supported by argument. Even a perfectly correct answer will be given a low score unless accompanied by an explanation.

Problem 1 (20 points). Here are some arithmetic equalities in Birom:

1. $\text{tùḡūn}^2 + \text{tāt} + \text{nààs} = \text{bākūrū bībā ná vè rwīt}$
2. $\text{tāt} \text{nààs} = \text{bākūrū bītīmìn ná vè fāātāt}$
3. $\text{tàāmà}^2 + \text{fāātāt} + \text{gwīnìḡ} = \text{bākūrū bīnāàs ná vè fāāgwīnìḡ}$
4. $\text{fāātāt} \text{gwīnìḡ} = \text{fāātāt}$
5. $\text{rwīt}^2 + \text{bà} + \text{tùḡūn} = \text{bākūrū bītūḡūn ná vè fāāgwīnìḡ}$
6. $\text{bà} \text{tùḡūn} = \text{bākūrū bībā ná vè rwīt}$
7. $\text{fāātāt}^2 + \text{nààs} + \text{tāt} = \text{bākūrū bītāāmà ná vè nààs}$
8. $\text{nààs} \text{tāt} = \text{bākūrū bītūḡūn ná vè nààs}$
9. $\text{kūrū ná vè nààs} + \text{kūrū ná vè fāātāt} = \text{kūrū ná vè tīmìn} + \text{bà} + \text{kūrū ná vè tùḡūn}$

All numbers in this problem are greater than 0 and less than 125.

- (a) Write the equalities (1–9) in numerals.
- (b) Write the numbers **bākūrū bītāt**, **fāāgwīnìḡ**, **kūrū** and the equalities (A) and (B) in numerals.

A. $\text{bākūrū fāābītāt} - \text{tāt} - \text{kūrū ná gwē gwīnìḡ} = \text{bākūrū bītāāmà ná vè rwīt}$

B. $\text{bākūrū bīnāàs ná gwē gwīnìḡ} - \text{kūrū ná vè bà} - \text{kūrū ná vè tāt} = \text{kūrū ná vè rwīt}$

- (c) Write out in Birom: 6, 22, 97, 120.

⚠ Birom belongs to the Plateau group of the Benue-Congo branch of the Atlantic-Congo family. It is spoken by approx. 1,000,000 people in Nigeria.

ε is a vowel. ḡ and ƶ are consonants. The doubling of a vowel denotes length. The marks ´, ¯ and ` indicate high, middle, and low tone, respectively.

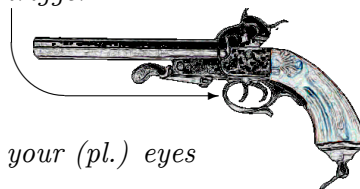
$$a^k = \underbrace{a \times a \times \cdots \times a}_{k \text{ times}}; a^1 = a.$$

—Milena Veneva

Problem 2 (20 points). Here are some words and word combinations in Abui and their English translations in arbitrary order:

1. **abang**
2. **atáng heya**
3. **bataa hawata**
4. **dekafi**
5. **ebataa hatáng**
6. **ekuda hawata**
7. **falepak hawei**
8. **hatáng hamin**
9. **helui**
10. **maama hefalepak**
11. **napong**
12. **rièng**
13. **ritama**
14. **riya hatáng**
15. **tama habang**
16. **tamin**
17. **tefe hawei**

- a. *his fingertip*
- b. *your (sg.) branch*
- c. *my face*
- d. *one's own rope*
- e. *your (sg.) shoulder*
- f. *your (pl.) mother's hand*
- g. *our pigs' ears*
(the ear of the pig of each of us)
- h. *father's pistol*
- i. *your (sg.) horse's neck*
- j. *trigger*



- k. *your (pl.) eyes*
- l. *our noses*
(the nose of each of us)
- m. *his knife*
- n. *seashore*
- o. *upper part of a tree*
- p. *your (sg.) thumb*
- q. *your (pl.) sea*

- (a) Determine the correct correspondences.
- (b) Translate into English: 1. **amin**; 2. **deya hebataa**.
- (c) Translate into Abui:

1. *pig*
2. *your (pl.) knife*
3. *your (sg.) mother's father*
4. *my father's face*
5. *one's own ear*
6. *my sea*

⚠ Abui belongs to the Timor-Alor-Pantar family. It is spoken by approx. 16,000 people in Indonesia.

The marks ´ and ` denote tones.

—Aleksejs Peguševs

Problem 3 (20 points). Here are some sentences in Kimbundu and their English translations:

1. **ngámónà dìhónzò mùdìlóngà**
I saw the banana on the plate.
2. **àlózí ásángá djálà mùdikúgù**
The sorcerers met the man in the cave.
3. **ngádjà dìhónzó djámì**
I ate my banana.
4. **mùdjúlù mwálà zìtéténbwà**
There are stars in the sky.
5. **dikámbá djámí djáfíkà nì djákínà**
My friend sang and danced.
6. **ngámónà dìkúngú djámí**
Did I see my cave?
7. **ngámóná málà mùkítándà**
I saw the men in the square.
8. **ngásángá múlózí mwámì mùlwándà**
I met my sorcerer in Luanda.
9. **mùkítándà mwálá djálá djámì**
My man (husband) is in the square.
10. **mùdikúgù ngámónà màkòlómóló**
Did I see the roosters in the cave?
11. **àtú ádjà dìhónzò mùlwándá**
Did the people eat the banana in Luanda?

(a) Translate into English (one of the sentences is very similar in meaning to one of the sentences above):

12. **múlózí mwámónà zìtéténbwá**
13. **zìtéténbwá zjálà mùdjúlù**
14. **ngákínà**
15. **djálá djámónà màhónzò mùlwándá**

(b) Translate into Kimbundu (one of the sentences may have more than one translation):

16. *Did I sing?*
17. *The person met the sorcerer and the friend in the square.*
18. *My man (husband) saw the cave.*
19. *There are sorcerers in Luanda.*

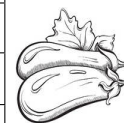
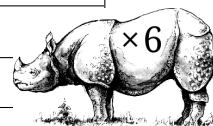
⚠ Kimbundu (North Mbundu) belongs to the Bantu group of the Benue-Congo branch of the Atlantic-Congo family. It is spoken by approx. 50,000 people in Angola.

w = *w* in *win*. **j** = *y* in *yum*. **ʃ** and **ʒ** are consonants. The marks ´ and ` indicate high and low tone, respectively.

—Bruno L'Astorina

Problem 4 (20 points). Here are some word combinations in Laven written in the Khom script and in phonetic transcription and their English translations:

1	𑌢𑌣𑌤 𑌢𑌣	praj trie	to wake up the wife
2	𑌢𑌣𑌤 𑌢𑌣	ca:k caj	from the heart/mind/soul
3	?	taw bæ:	to see the raft
4	𑌢𑌣𑌤 𑌢𑌣	kriət blaw	to scratch the thigh
5		plaj priət	banana
6	?	?	three bananas
7	𑌢𑌣𑌤 𑌢𑌣	?	six rhinoceros
8	𑌢𑌣𑌤 𑌢𑌣	?	four hands of bananas
9	𑌢𑌣𑌤 𑌢𑌣	?	?
10	?	cie pɔh la:	seven sheets of paper
11	𑌢𑌣𑌤 𑌢𑌣	?	aubergine/eggplant leaf
12		?	two aubergines/eggplants
13	𑌢𑌣𑌤 𑌢𑌣 𑌢𑌣 𑌢𑌣	plaj hnat pɔh plaj	seven pineapples
14	𑌢𑌣𑌤 𑌢𑌣	kruat pɛ: to:	three bees
15		la: priət traw la:	?
16	?	kə:r bə:r to:	two doves
17		bla:k puan ka:	four carp
18	𑌢𑌣𑌤 𑌢𑌣 𑌢𑌣	piet traw pla:	six knives
19	𑌢𑌣𑌤 𑌢𑌣	bə:r ka:	?
20	𑌢𑌣𑌤 𑌢𑌣	?	four blades



Fill in the cells with the question marks (you don't have to fill in the shaded ones).

⚠ Laven (Jru') belongs to the Austroasiatic family. It is spoken by approx. 28,000 people in Laos. The Khom script was used for this language from 1924 to 1936. —Tae Hun Lee

Problem 5 (20 points). Here are some words in Madak and their English translations:

lavatbungmenemen	<i>the whole world</i>	loxongkao	<i>hot coal (ember)</i>
laxangkatli	<i>many eyes</i>	loxontaamang	<i>part of a garden</i>
laxanoos	<i>many vines</i>	lualeng	<i>two days</i>
laxao	<i>fire</i>	lubungtadi	<i>group of men</i>
lemparoos	<i>big vines</i>	luneton	<i>two brothers; two sisters</i>
lengkompixan	<i>songs</i>	lurubuno	<i>grandchild</i>
levempeve	<i>hearts</i>	luuna	<i>tree</i>
levenaleng	<i>days</i>	luvanga	<i>two things</i>
levengkot	<i>places</i>	luvatpeve	<i>two big hearts</i>
levenmenemen	<i>villages</i>	luvutneton	<i>brothers; sisters</i>
livixan	<i>singing (noun)</i>	luvuttadi	<i>men</i>
loroonan	<i>spirit</i>	luxavus	<i>two white men</i>

(a) Give a literal translation of the word **lavatbungmenemen**.

(b) Translate into English:

(c) Translate into Madak:

- | | |
|-----------------------|---|
| 1. laradi | 8. <i>heart</i> |
| 2. lavatkonuna | 9. <i>gardens</i> |
| 3. laxantoonan | 10. <i>many things</i> |
| 4. levengkatli | 11. <i>grandchildren</i> |
| 5. loxot | 12. <i>two parts of day (two moments)</i> |
| 6. lubungkavus | 13. <i>branches</i> |
| 7. luvaroos | 14. <i>big branches</i> |

⚠ Madak belongs to the Meso-Melanesian group of the Malayo-Polynesian branch of the Austronesian family. It is spoken by approx. 3,000 people in Papua New Guinea (New Ireland).

ng = *ng* in *hang*. **x** is the voiced counterpart of *ch* in Scottish *loch* or German *Bach*.

—Ivan Derzhanski

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Good luck!