

# Sixteenth International Linguistics Olympiad

Prague (Czechia), 26–30 July 2018

## Individual Contest Problems

### Rules for writing out the solutions

Do not copy 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 words in Creek and their English translations. The mark [ˈ] indicates stress:

[cokó]	<i>house</i>	[imahicíta]	<i>to look out for</i>
[cá:lo]	<i>trout</i>	[inkosapítá]	<i>to implore</i>
[sókca]	<i>sack</i>	[tapassó:la]	<i>daddy longlegs</i>
[wa:kocí]	<i>calf</i>	[akkopánka]	<i>playing</i>
[pocóswa]	<i>axe</i>	[cokpilâ:pilá]	<i>whippoorwill</i>
[famí:ca]	<i>muskmelon</i>	[tokna:photí]	<i>wallet</i>
[yanása]	<i>bison // buffalo</i>	[co:kakíṭitá]	<i>learning</i>
[iyanawá]	<i>his/her cheek</i>	[ṭafotaháya]	<i>pumpkin // winter squash</i>
[hî:spákwa]	<i>robin</i>	[itiwanayipíta]	<i>to tie each other</i>
[aklowahí:]	<i>mud</i>	[ipahankatíta]	<i>to count us</i>
		[pokkoṭakkoakkopankacóko]	<i>basketball gym</i>

Mark the stress:

[ifa]	<i>dog</i>	[ifoci]	<i>puppy</i>
[nâ:naki]	<i>things</i>	[sâ:sakwa]	<i>goose</i>
[aktopa]	<i>bridge</i>	[hoktaki]	<i>women</i>
[wanayita]	<i>to tie</i>	[awanayita]	<i>to tie to</i>
[isiskitoci]	<i>little drinking vessel</i>	[a:tamihoma]	<i>bonnet (car hood)</i>
[honanta:ki]	<i>men</i>	[ilitohtaṭita]	<i>to cross legs</i>

⚠ Creek (Muskogee) belongs to the Muskogean family. It is spoken by approx. 4,500 people in the state of Oklahoma, USA.

[ṭ] is a consonant. The mark [ˆ] indicates falling tone. The mark [:] indicates that the preceding vowel is long.  
—Aleksejs Peguševs

**Problem 2 (20 points).** Here are some sentences in Hakhun and their English translations:

1. **ŋa ka kɾ ne** — *Do I go?*
2. **nɾ ʒip tu? ne** — *Did you<sub>sg</sub> sleep?*
3. **ŋabə ati lapkʰi tɾ? ne** — *Did I see him?*
4. **nirum kəmə nuʔrum cʰam ki ne** — *Do we know you<sub>pl</sub>?*
5. **nɾbə ŋa lapkʰi rɾ ne** — *Do you<sub>sg</sub> see me?*
6. **tarum kəmə nɾ lan tʰu ne** — *Did they beat you<sub>sg</sub>?*
7. **nuʔrum kəmə ati lapkʰi kan ne** — *Do you<sub>pl</sub> see him?*
8. **nɾbə ati cʰam tu? ne** — *Did you<sub>sg</sub> know him?*
9. **tarum kəmə nirum lapkʰi ri ne** — *Do they see us?*
10. **ati kəmə ŋa lapkʰi tʰɾ ne** — *Did he see me?*

(a) Translate into English:

1. **nɾ ʒip ku ne**
2. **ati kəmə nirum lapkʰi tʰi ne**
3. **tarum kəmə nuʔrum cʰam ran ne**
4. **nirum kəmə tarum lan ki ne**
5. **nirum kəmə nɾ cʰam ti? ne**
6. **nirum ka ti? ne**

(b) Translate into Hakhun:

7. *Did I beat you<sub>sg</sub>?*
8. *Did they see me?*
9. *Does he know you<sub>sg</sub>?*
10. *Do you<sub>pl</sub> sleep?*

△ Hakhun belongs to the Sal branch of the Sino-Tibetan family. It is spoken by approx. 10,000 people in the extreme East of India and the neighbouring districts of Myanmar.

ə and ɾ are vowels. cʰ, kʰ, ŋ, tʰ, ʒ and ʔ are consonants.

—Peter Arkadiev

**Problem 3 (20 points).** Here are some words in Terêna in two grammatical forms (1st person sg, *my ... or I ...* ; 2nd person sg, *your<sub>sg</sub> ... or you<sub>sg</sub> ...*) and their English translations. Some forms are missing.

1st person sg	2nd person sg		1st person sg	2nd person sg	
<b>îmam</b>	<b>îme</b>	<i>husband</i>	<b>enjóvi</b>	<b>yexóvi</b>	<i>elder sibling</i>
<b>mbîho</b>	..... <sub>1</sub>	<i>to go</i>	<b>noínjoa</b>	..... <sub>8</sub>	<i>to see it</i>
<b>yónom</b>	<b>yéno</b>	<i>to walk</i>	<b>vanénjo</b>	..... <sub>9</sub>	<i>to buy</i>
<b>mbôro</b>	<b>peôro</b>	<i>pants</i>	<b>mbepékena</b>	<b>pipíkina</b>	<i>drum</i>
<b>ndûti</b>	<b>tiûti</b>	<i>head</i>	<b>ongóvo</b>	<b>yokóvo</b>	<i>stomach, soul</i>
<b>âyom</b>	<b>yâyo</b>	<i>brother of a woman</i>	<b>rembéno</b>	<b>ripíno</b>	<i>shirt</i>
..... <sub>2</sub>	<b>píyo</b>	<i>animal</i>	<b>nje'éxa</b>	<b>xi'íxa</b>	<i>son/daughter</i>
<b>yênom</b>	..... <sub>3</sub>	<i>wife</i>	<b>ivándako</b>	<b>ivétako</b>	<i>to sit</i>
<b>mbûyu</b>	<b>piûyu</b>	<i>knee</i>	<b>mbiritauna</b>	<b>piríteuna</b>	<i>knife</i>
<b>njûpa</b>	<b>xiûpa</b>	<i>manioc</i>	<b>mómindî</b>	..... <sub>10</sub>	<i>to be tired</i>
..... <sub>4</sub>	<b>yéno</b>	<i>mother</i>	<b>njovó'i</b>	<b>xevó'i</b>	<i>hat</i>
<b>nênem</b>	<b>nîni</b>	<i>tongue</i>	<b>ngónokoa</b>	<b>kénokoa</b>	<i>to need it</i>
<b>mbâho</b>	<b>peâho</b>	<i>mouth</i>	<b>ínzikaxovoku</b>	..... <sub>11</sub>	<i>school</i>
<b>ndâki</b>	<b>teâki</b>	<i>arm</i>	..... <sub>12</sub>	<b>yôxu</b>	<i>grandfather</i>
<b>vô'um</b>	<b>veô'u</b>	<i>hand</i>	<b>íningone</b>	<b>ínikene</b>	<i>friend</i>
<b>ngásaxo</b>	..... <sub>5</sub>	<i>to feel cold</i>	<b>vandékena</b>	<b>vetékena</b>	<i>canoe</i>
<b>njérere</b>	..... <sub>6</sub>	<i>side</i>	<b>óvongu</b>	<b>yóvoku</b>	<i>house</i>
<b>mônzi</b>	<b>meôhi</b>	<i>toy</i>	..... <sub>13</sub>	<b>nîwo</b>	<i>nephew</i>
<b>ndôko</b>	..... <sub>7</sub>	<i>nape</i>	<b>ánzarana</b>	..... <sub>14</sub>	<i>hoe</i>
<b>ímbovo</b>	<b>ípevo</b>	<i>clothes</i>	<b>nzapátuna</b>	<b>hepátuna</b>	<i>shoe</i>

- (a) Fill in the gaps.
- (b) Some Terena words are borrowed from Portuguese, the national language of Brazil. One example is the word 'shoe' above (← Portuguese *sapato*). Sometimes Portuguese borrowings behave in an unusual way in Terena.

1st person sg	2nd person sg	
<b>lâmbina</b>	<b>leápina</b>	<i>pencil</i> (← Portuguese <i>lâpis</i> )
	<b>leátana</b>	<i>tin can</i> (← Portuguese <i>lata</i> )
	<b>keápana</b>	<i>cloak</i> (← Portuguese <i>capa</i> )

1. In what way are these words different from native Terena words?
2. Translate into Terêna: *my tin can*, *my cloak*.

⚠ Terêna belongs to the Bolivia-Paraná branch of the Arawakan family. It is spoken by approx. 15,000 people in Brazil.

' is a consonant (known as the glottal stop). **x** = *sh* in *sheesh*. **y** = *y* in *yum*. **nj** = *n + si* in *vision*. Word-final **m** indicates the nasal pronunciation of the whole word. The mark ^ indicates that the vowel is lengthened and pronounced with a falling pitch. The mark ' indicates that the following consonant is lengthened.  
—André Nikulin

**Problem 4 (20 points).** Here are some word combinations in Mountain Arapesh and their English translations:

1. <b>biaruh atuh araruh</b>	3 sugar canes
2. <b>nybat biabys juhurubys</b>	6 eggs
3. <b>anowip biabys bøbys</b>	8 betel nuts
4. <b>biogu nybat atuh araruh</b>	9 sugar canes
5. <b>anowip biagas atugas atug baigas</b>	10 sheets of sago bark
6. <b>biogu atut atub juhurubys</b>	13 eggs
7. <b>wiwis atug baigas</b>	13 sheets of sago bark
8. <b>wiwis biabys bøbys</b>	14 betel nuts
9. <b>biogu atugu biogu biaruh atuh araruh</b>	23 sugar canes
10. <b>araman biabys bøbys</b>	26 betel nuts
11. <b>anowip biabys juhurubys</b>	26 eggs

(a) A linguist who was examining the data first thought that the word *X* was missing in three of the examples above. However, studying the language further, the linguist went on to realize that no word is missing, as the word *X* is usually not used but implied by the context. Name the word *X*. In which three examples did the linguist think it was missing? How is it implied by the context?

(b) Translate into English:

12. **biabys atub bøbys**
13. **atub juhurub**
14. **nybat atuh araruh**
15. **biagas atugas biagas baigas**
16. **wiwis baigas**

(c) Translate into Mountain Arapesh:

17. 4 betel nuts
18. 11 eggs
19. 20 eggs
20. 25 sheets of sago bark

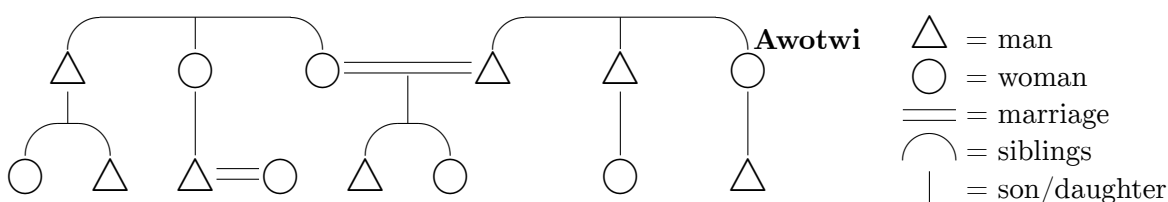
⚠ Mountain Arapesh (Bukiyip) belongs to the Torricelli family. It is spoken by approx. 15,000 people in Papua New Guinea.

Betel nuts are actually seeds of a certain kind of palm.

—*Aleksejs Peguševs*

**Problem 5 (20 points).** Below three Akan men who belong to one family introduce themselves and some members of their family (see the family tree):

1. Yɛfrɛ me Enu. Yɛfrɛ me banom Thema ne Yaw ne Ama. Yɛfrɛ me yere Kunto. Yɛfrɛ me nuanom Awotwi ne Nsia. Yɛfrɛ me wɔfaase Berko.
2. Yɛfrɛ me Kofi. Yɛfrɛ me nua Esi. Yɛfrɛ me agya Ofori. Yɛfrɛ me sewaanom Dubaku ne Kunto. Yɛfrɛ me sewaabanom Yaw ne Ama ne Kobina.
3. Yɛfrɛ me Kobina. Yɛfrɛ me ɛnanom Dubaku ne Kunto. Yɛfrɛ me nuanom Yaw ne Ama. Yɛfrɛ me wɔfa Ofori. Yɛfrɛ me yere Efua.



(a) Supply the family tree with names.

(b) Here are some more statements by two other men from this family:

1. Yɛfrɛ me Yaw. Yɛfrɛ me ɛnanom \_\_\_\_\_. Yɛfrɛ me \_\_\_\_\_ Nsia ne \_\_\_\_\_. Yɛfrɛ me nuanom Thema ne \_\_\_\_\_. Yɛfrɛ me \_\_\_\_\_ Awotwi. Yɛfrɛ me \_\_\_\_\_ Ofori. Yɛfrɛ me \_\_\_\_\_ Esi ne \_\_\_\_\_. Yɛfrɛ me \_\_\_\_\_ Berko.
2. Yɛfrɛ me \_\_\_\_\_. Yɛfrɛ me banom Kofi ne \_\_\_\_\_. Yɛfrɛ me \_\_\_\_\_ Yaw ne \_\_\_\_\_. Yɛfrɛ me \_\_\_\_\_ Kunto ne \_\_\_\_\_.

Fill in the gaps. (Some gaps contain more than one word.)

⚠ Akan belongs to the Kwa group of the Atlantic-Congo family. It is spoken by approx. 8,000,000 people in Ghana. —Ksenia Gilyarova

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Good luck!