

## Twenty-first International Linguistics Olympiad

Brasília (Brazil), 23–31 July 2024

## 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. If you do not do this, your work may be mislaid or misattributed.

Unless stated differently, you should describe any patterns or rules that you identified in the data. Otherwise your solution will not be awarded full marks.

**Problem 1 (20 points).** Here are some verb forms in Koryak and their English translations:

- |                    |                                                                                                                                                               |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. tǝjekmĩŋŋǝnet   | <i>I will catch them<sub>(du)</sub></i>                                                                                                                       |
| 2. kekmiŋŋǝnew     | <i>you<sub>(sg)</sub> catch them<sub>(pl)</sub></i>                                                                                                           |
| 3. mǝtǝlhun        | <i>we<sub>(du)</sub> saw him</i>                                                                                                                              |
| 4. kujguŋnet       | <i>you<sub>(sg)</sub> bite them<sub>(du)</sub></i>                                                                                                            |
| 5. kinuheŋŋǝtǝk    | <i>you<sub>(du)</sub> wait for me</i>                                                                                                                         |
| 6. nekmitǝn        | <i>they caught him</i>                                                                                                                                        |
| 7. mǝtkolholǝŋǝn   | <i>we<sub>(pl)</sub> see him</i>                                                                                                                              |
| 8. mǝtuhennet      | <i>we<sub>(du)</sub> waited for them<sub>(du)</sub></i>                                                                                                       |
| 9. enanŋevlatǝk    | <i>you<sub>(pl)</sub> sent me</i>                                                                                                                             |
| 10. tuhettǝk       | <i>I waited for you<sub>(du)</sub></i>                                                                                                                        |
| 11. mǝccuheŋŋǝtǝk  | <i>we<sub>(du)</sub> will wait for you<sub>(du)</sub></i>                                                                                                     |
| 12. inekmittǝk     | <i>you<sub>(du)</sub> caught me</i>                                                                                                                           |
| 13. tǝjelleŋǝn     | <i>I will lead him</i>                                                                                                                                        |
| 14. nekulhuŋnew    | <i>they see them<sub>(pl)</sub></i>                                                                                                                           |
| 15. najalholǝŋtǝk  | <i>they will see you<sub>(pl)</sub></i>                                                                                                                       |
| 16. mǝccenŋivŋǝnew | <i>we<sub>(du)</sub> will send them<sub>(pl)</sub></i>                                                                                                        |
| 17. nejenŋivŋǝnet  | <i>they will send them<sub>(du)</sub></i>                                                                                                                     |
| 18. mǝccallalǝŋtǝk | <i>we<sub>(du)</sub> will lead you<sub>(pl)</sub>,<br/>we<sub>(pl)</sub> will lead you<sub>(pl)</sub>,<br/>we<sub>(pl)</sub> will lead you<sub>(du)</sub></i> |

|                             |
|-----------------------------|
| (sg) = one person           |
| (du) = two people           |
| (pl) = three or more people |

(a) Translate into English:

19. kulleŋǝn
20. jinejguŋtǝk
21. tekminnew
22. tǝjohallǝŋtǝk
23. mǝtkonŋevlaŋǝn

(b) Translate into Koryak:

24. you<sub>(sg)</sub> will see them<sub>(du)</sub>
25. we<sub>(pl)</sub> bit him
26. you<sub>(pl)</sub> catch me
27. they send you<sub>(du)</sub>
28. you<sub>(du)</sub> led me

△ The Koryak language belongs to the Chukotko–Kamchatkan family. It is spoken by approx. 1665 people in the extreme east of Siberia. ǝ = *a* in *comma*. c = *ch* in *church*. g is not unlike French *r*. j = *y* in *yolk*. ŋ ≈ *ny* in *canyon*. ŋ = *ng* in *hang*. h and w are consonants.

—Ivan Derzhanski

**Problem 2 (20 points).** Here are some word combinations in Hadza and their English translations. (See next page for images.)

|                               |                                                   |
|-------------------------------|---------------------------------------------------|
| 1. chutisa zzokwanako         | <i>the giraffe's neck</i>                         |
| 2. athuitcha slimibii         | <i>the men's axe (for collecting honey)</i>       |
| 3. panjubeema popho           | <i>the male impala's l. transvaalensis tubers</i> |
| 4. do'aikuitcha sisimibii     | <i>the lions' V. macrorhyncha tuber</i>           |
| 5. uphukwabiitcha zzokwanabii | <i>the male giraffes' legs</i>                    |
| 6. chutikoma beggau           | <i>the male elephant's neck</i>                   |
| 7. uthumeckoeta dlakwebee     | <i>the girls' spear</i>                           |
| 8. makokoma erati             | <i>the boy's short, wide cooking pot</i>          |
| 9. midlabiisa neeko           | <i>the baboon's bones</i>                         |
| 10. dungubiima hazzake        | <i>the male thief's male zebras</i>               |
| 11. athobeema sleme           | <i>the man's axes (for splitting firewood)</i>    |
| 12. uphukwakosa beggauko      | <i>the elephant's leg</i>                         |
| 13. shumusa nqeko             | <i>the female leopard's V. pseudolablab vine</i>  |
| 14. gogogogoma uhuyiti        | <i>the male stranger's flamingo</i>               |
| 15. uthumesa dlakweko         | <i>the girl's long spear</i>                      |
| 16. do'aisa sesemeko          | <i>the female lion's V. macrorhyncha vine</i>     |
| 17. midlaitcha niibii         | <i>the male baboons' bone</i>                     |
| 18. garibiieta akhwitibee     | <i>the women's lorries</i>                        |

(a) Determine the correct correspondences:

|              |                              |
|--------------|------------------------------|
| 19. wiriko   | A. tails (e.g., of leopards) |
| 20. roobee   | B. thin twig                 |
| 21. mu'a     | C. horns (e.g., of dik-diks) |
| 22. zzahubii | D. short, thick root         |

(b) Translate into English:

23. gariko
24. makubii
25. hazzakeko
26. dongobee
27. zzahoko
28. nqibii

(c) Translate into Hadza:

29. *the flamingo's leg*
30. *the zebra's V. pseudolablab tuber*
31. *the male impalas' horns*
32. *the female strangers' thick stick*
33. *the boys' tall cooking pot*
34. *the impala's long, thin roots*

△ The Hadza language is a language isolate. It is spoken by approx. 1000 people in Tanzania. **ch, dl, gg, khw, kw, nj, nq, ph, sh, sl, tch, th, w, y, zz** are consonants. ' is the so-called glottal stop (a brief blocking of the flow of air in the throat). Consecutive identical vowels are pronounced separately (with intervening ').

*Ipomoea (I.) transvaalensis*, *Vatovaea (V.) pseudolablab* and *Vigna (V.) macrorhyncha* are vine plants with edible thickened underground stems called tubers (which are like potatoes). Any differences between these plants are not relevant to the solution of this problem.  
—Samuel Ahmed



giraffe



impala



dik-dik



lion



flamingo



baboon



elephant

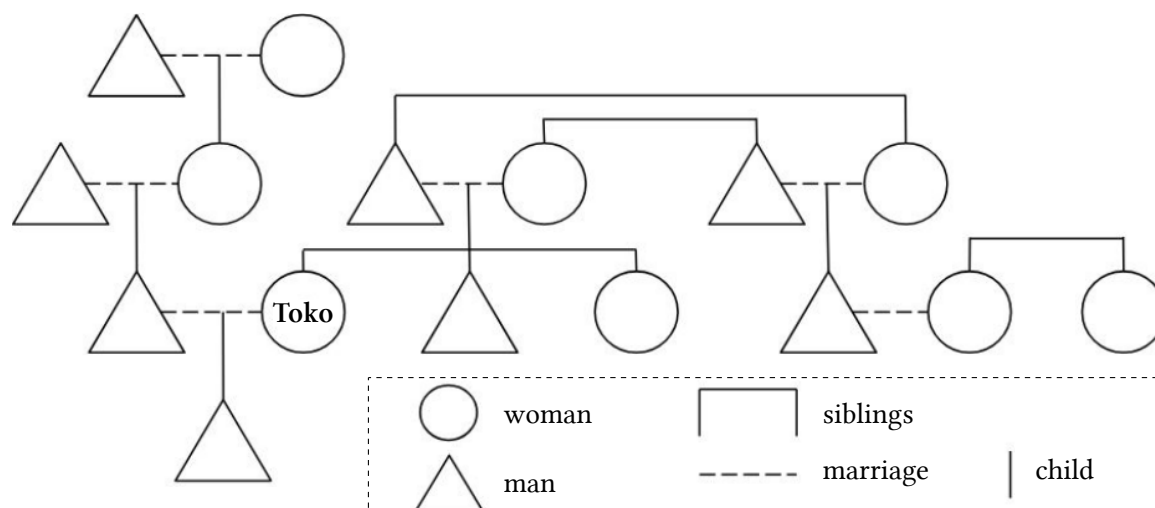


zebra



leopard

**Problem 3 (20 points).** You are given the family tree of a Komnzo-speaking family and statements describing the family members' relation to each other. Siblings are displayed in descending age order from left to right. The position of one family member, **Toko**, is known.



1. Wafine Kuraiane nge rä.
2. Mea Gwamane bäñaf yé.
3. Naimr Tokoane ñame rä.
4. Mea Wimsane ñafe yé.
5. Marua Kuraiane enat yé.
6. Naimr Gwamane ...<sup>①</sup>.
7. Abia Maragaane ñäwi yé.
8. Tawth Kuraiane zath yé.
9. Trafe Wafineane ñame rä.
10. Marua Maragaane zath yé.
11. Tawth Meaane ...<sup>②</sup>.
12. Abia Gwamane yamit yé.
13. Tawth Wafineane nge yé.
14. Wafine Maragaane zath ñare rä.
15. Kurai Wafineane ñafe yé.
16. Trafe Tawthane ...<sup>③</sup>.
17. Mea Maragaane zath yé.
18. Nfiyam Wimsane bäñam rä.
19. Wims Gwamane yamit rä.
20. Maraga Tawthane ...<sup>④</sup>.
21. Skri Gwamane ñafe yé.
22. Naimr Maragaane zath ñare rä.
23. Maraga Tokoane nge yé.
24. Abia Tokoane ngth yé.
25. Toko Wimsane nane rä.
26. Toko Gwamane yamit rä.
27. Maraga Wafineane zath yé.
28. Nakre Wimsane yumad rä.
29. Abia Wimsane nane yé.
30. Mabata ...<sup>⑤</sup> ngth ...<sup>⑥</sup>.

- (a) Fill in the family tree.
  - (b) Fill in the gaps (1–6).
  - (c) The following statement is incorrect. Explain why and correct the mistake.
31. Skri Abiaane ñäwi yé.

△ The Komnzo language belongs to the Yam family. It is spoken by approx. 250 people in Rouku village and the town of Morehead in the Western Province of Papua New Guinea. The Farem people – the primary speakers of Komnzo – practice sister exchange, whereby two men from different clans marry each other's sisters (as seen in the family tree).

ä = a in *cat*. ñ = ng in *hang*. th = th in *leather*. z = ts in *cats*.

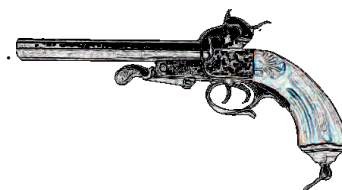
—Aida Davletova

**Problem 4 (20 points).** Here are some word combinations in Dâw and their English translations in arbitrary order:

- |                            |                                   |
|----------------------------|-----------------------------------|
| 1. <b>çum 'aa'</b>         | A. <i>ring</i>                    |
| 2. <b>dâw çuum</b>         | B. <i>mouth</i>                   |
| 3. <b>dâw nôr</b>          | C. <i>flip-flops</i>              |
| 4. <b>dâw nôr keet</b>     | D. <i>little finger</i>           |
| 5. <b>dâw tôog</b>         | E. <i>to decrease (something)</i> |
| 6. <b>dâw sôb pis piis</b> | F. <i>daughter</i>                |
| 7. <b>dâw tôoj</b>         | G. <i>can of flour</i>            |
| 8. <b>dôo' piis</b>        | H. <i>tongue</i>                  |
| 9. <b>sôb dak</b>          | I. <i>foot</i>                    |
| 10. <b>suk 'aa'</b>        | J. <i>nose</i>                    |

Here are some more word combinations in Dâw and their English translations, again in arbitrary order:

- |                      |                                 |
|----------------------|---------------------------------|
| 11. <b>be keet</b>   | K. <i>domesticated tapir</i>    |
| 12. <b>be tum</b>    | L. <i>capybara</i>              |
| 13. <b>yak yaa'</b>  | M. <i>leaf</i>                  |
| 14. <b>yak nâax</b>  | N. <i>glasses (spectacles)</i>  |
| 15. <b>nâx pôog</b>  | O. <i>revolver</i> .....        |
| 16. <b>nâx taax</b>  | P. <i>main river</i>            |
| 17. <b>taax 'uuy</b> | Q. <i>seed</i>                  |
| 18. <b>tum tâag</b>  | R. <i>domesticated anteater</i> |
| 19. <b>yon 'uuy</b>  | S. <i>tucupi</i>                |
| 20. <b>yon tôoj</b>  | T. <i>macaxeira</i>             |



(a) Determine the correct correspondences.

(b) Translate into English:

21. **dâw sôb piis**

22. **dâw sôob pis**

23. **dâw çum piis**

(c) Translate into Dâw:

24. *brook, stream*

25. *little tapir*

26. *eye*

27. *granddaughter (daughter's daughter)*

△ The Dâw language belongs to the Naduhup family. It is spoken by approx. 140 people in the Brazilian state of Amazonas.

ç ≈ *k* in *king*, but pronounced further forward in the mouth using the hard palate. j ≈ *g* in *gift*, but pronounced further forward in the mouth using the hard palate. r = *h* in *hope*. s = *sh* in *shine*. x = *ch* in *loch* or *Bach*. y = *y* in *yolk*. ' is the so-called glottal stop (a brief blocking of the flow of air in the throat). ã = nasalised sound. â, ô and u are vowels. A double vowel (including âa, ôo) indicates falling or rising tone.

Capybaras, tapirs, and anteaters are mammals found in Brazil. Capybaras are known for living in the margins of lakes, rivers, and swamps. Anteaters are known for their long noses, used to collect ants. (See next page for images.) Tucupi is a strong-tasting liquid extracted from the manioc tuber by squeezing. Macaxeira is a kind of manioc known for being less toxic.

—João Henrique Oliveira Fontes (consultant: Karolin Obert)



capybara



tapir



anteater

**Problem 5 (20 points).** In Yanyuwa, men and women have some differences in how they speak. Here are some sentences in the women's dialect of Yanyuwa and their English translations:

1. **nya-ardu kiwa-wani**  
*The boy returned.*
2. **rru-bardibardilu kanda-wubala ma-burlurlu**  
*The old woman will bake the bread.*
3. **nyu-marralngujilu jarrilu-yabimanji rra-walkuru**  
*The doctor is healing the pregnant woman.*
4. **wakuku ji-wulumanji**  
*The dog is running.*
5. **linji-nhanawalu kanyalu-wudurumala nya-mirningiya**  
*The women will feed the man.*
6. **ji-jakudukudulu kanyinju-athama nya-munanga**  
*The emu chased the white man.*
7. **nyu-ardulu jilu-nganji warrbima**  
*The boy is looking at the dingo.*

For contrast, below are some sentences in the men's dialect and their English translations:

8. **li-walkuru kalu-walanyma**  
*The pregnant women emerged.*
9. **ki-warrbimalu kilu-tha wunala**  
*The dingo ate the kangaroo.*
10. **rra-bardibardi janda-waninji**  
*The old woman is returning.*
11. **ki-bulijimanjilu karrilu-yngkarri rra-ardu**  
*The policeman heard the girl.*
12. **ki-mirningiyalu jilu-wubanji ma-ngarra**  
*The man is cooking the food.*
13. **rru-yanyuwalu kanda-ngala munanga**  
*The Yanyuwa woman will look at the white man.*
14. **linji-marralngujilu kalalu-yabimala li-malbu**  
*The doctors will heal the old men.*

(a) Translate into English:

15. **mirningiya ka-wulumala**
16. **nyu-munangalu kalilu-wudurruma li-wakuku**
17. **linji-ardulu jalu-wubanji ma-burlurlu**
18. **rru-nhanawalu janda-athamanji ardu**

(b) For each of the Yanyuwa sentences in (a), indicate whether it is in the women's dialect (♀), the men's dialect (♂), or whether it is unclear (?).

(c) Translate into Yanyuwa, giving both men's and women's options if these differ:

19. *The dog chased the girl.*
20. *The pregnant woman is feeding the old women.*
21. *The old man healed the Yanyuwa man.*
22. *The kangaroo will return.*

△ The Yanyuwa language belongs to the Ngarna branch of the Pama–Nyungan family. It is currently spoken fluently by three women living in the Northern Territory, Australia.

**k** ≈ *g* in *lag*. **nh** = *n* in *month*. **rr** = *rr* in Spanish *perro*. **th** = *th* in *leather*. **r**, **rd**, **rl** and **rn** are pronounced like **rr**, **d**, **l** and **n** but with the tip of the tongue curled backwards. **n** before **j** and **d** indicates some air flows through the nose before the consonant.

Dingos and emus are animals found in Australia.

—Dan-Mircea Mirea (consultant: John Bradley)

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Good luck!