



Hong Kong Linguistics Olympiad  
香港語言學奧林匹克

en

## Sixth Hong Kong Linguistics Olympiad

March 10<sup>th</sup>, 2024

### Problems

- Listen carefully to the invigilators and follow their instructions.
- The contest lasts four hours. The problem set consists of six pages and contains four problems. You may solve the problems in any order.
- You are not allowed to use any electronic device, written or printed material or other external sources of information during the contest.
- If you have a question about any of the problems, put up your hand and ask an invigilator. The invigilator will consult with the jury before answering.
- Rules for writing out solutions:
  - Do not copy the statements of the problems.
  - Write down your solution to each problem on a separate sheet or sheets.
  - Use only the front side of the answer sheet.
  - On each sheet, write your name, the number of the problem, and the page sequence of that sheet within the problem, e.g.:

Name	...
Problem #	4
Page #	1 / 3

Name	...
Problem #	4
Page #	2 / 3

Name	...
Problem #	4
Page #	3 / 3

(meaning first, second, and third sheet out of three for the fourth problem.)

Otherwise, your work may be mislaid or misattributed.

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

**The problem set must be kept confidential until it is published on the official HKLO website. Do not disclose nor discuss the problems online until that date.**

**Problem 1 (25 points).** Here are some pairs of Tiene verbs along with a possible English translations. The two forms are referred to as “basic” verbs and “extended” verbs:

Basic		Extended		Basic		Extended	
<b>bela</b>	<i>speak</i>	<b>bele</b>	<i>speak for</i>	<b>kota</b>	<i>tie</i>	<b>kote</b>	<i>untie</i>
<b>bela</b>	<i>speak</i>	<b>bese</b>	<i>make speak</i>	<b>pina</b>	<i>be black</i>	<b>piɛ</b>	<i>blacken</i>
<b>bika</b>	<i>become cured</i>	<b>bilekɛ</b>	<i>become cured for</i>	<b>suma</b>	<i>stick into the ground</i>	<b>sunemɛ</b>	<i>pull out of the ground</i>
<b>bota</b>	<i>give birth</i>	<b>botɛ</b>	<i>give birth for</i>	<b>toma</b>	<i>send</i>	<b>tosebɛ</b>	<i>make send</i>
<b>duma</b>	<i>run fast</i>	<b>dunemɛ</b>	<i>run fast for</i>	<b>yoka</b>	<i>hear</i>	<b>yolekɛ</b>	<i>listen</i>
<b>kena</b>	<i>dance</i>	<b>kene</b>	<i>dance for</i>	<b>yoma</b>	<i>become dry</i>	<b>yosebɛ</b>	<i>dry out</i>

(a) Translate into Tiene:

1. *become dry for*
2. *be black for*
3. *make stick into the ground*
4. *make tie*

Below are some more pairs of Tiene verbs with their possible English translations:

Basic		Extended		Basic		Extended	
<b>fasa</b>	<i>drive through</i>	<b>fasaka</b>	<i>be driven through</i>	<b>lɔŋɔ</b>	<i>load</i>	<b>lɔnɔŋɔ</b>	<i>be loaded</i>
<b>kaba</b>	<i>divide</i>	<b>kalaba</b>	<i>be divided</i>	<b>mata</b>	<i>go away</i>	<b>masa</b>	<i>drive away</i>
<b>kama</b>	<i>twist</i>	<b>kanama</b>	<i>be twisted</i>	<b>ɲaka</b>	<i>tear</i>	<b>ɲasaka</b>	<i>make tear</i>
<b>kəlɔ</b>	<i>become tired</i>	<b>kəlɔ</b>	<i>become tired for</i>	<b>sɔnɔ</b>	<i>write</i>	<b>sɔnɔŋɔ</b>	<i>be written</i>
<b>kəlɔ</b>	<i>become tired</i>	<b>kəsɔ</b>	<i>tire out</i>	<b>yala</b>	<i>spread out</i>	<b>yala</b>	<i>roll up</i>
<b>kona</b>	<i>plant</i>	<b>koneŋɛ</b>	<i>be planted</i>	<b>yata</b>	<i>split</i>	<b>yataka</b>	<i>be split</i>
<b>lɔŋɔ</b>	<i>load</i>	<b>lɔnɔŋɔ</b>	<i>load for</i>	<b>yɔbɔ</b>	<i>bathe</i>	<b>yɔləbɔ</b>	<i>bathe for</i>
				<b>yɔbɔ</b>	<i>bathe</i>	<b>yɔsɔbɔ</b>	<i>make bathe</i>

(b) Given that **kasa** is an extended form of the verb *fight*, and **tinemɛ** is an extended form of the verb *dig*, give three distinct possibilities for what each of the two extended forms could mean.

(c) Knowing that **bolekɛ** means *be broken* and **solekɛ** means *take out*, translate into Tiene:

5. *be torn*
6. *break*
7. *deliver (a baby)*
8. *dig*
9. *make twist*
10. *make put in*
11. *send to/for*
12. *write for*

One of the verbs has two possible translations. Give them both.

△ Tiene is a Bantu language spoken by 24,000 people in the Democratic Republic of the Congo. Words in Tiene distinguish length and tone, but this is not relevant to the problem and has not been marked.

ɲ = *ng* in *king*; ɲ = *ny* in *canyon*; ɛ and ɔ are vowels similar to *e* and *o* respectively, but pronounced more open (closer to *a*).

—*Simi Hellsten*

**Problem 2 (25 points).** Here are some mathematical expressions in Outuan Hmong, all of which have only a single result:

- (1)  $\text{pei}^{33} \text{pai}^{55} \text{au}^{33} \text{t}^{\text{h}}\text{u}^{13} \text{sau}^{33} \div \text{t}^{\text{h}}\text{u}^{13} \text{i}^{13} = 18$
- (2)  $\text{pei}^{33} \text{pai}^{55} \text{qei}^{43} - (\text{t}^{\text{h}}\text{u}^{13} \text{tsi}^{33} \times \text{t}^{\text{h}}\text{u}^{13} \text{t}^{\text{u}}^{55})$
- (3)  $\text{eoj}^{52} \text{t}^{\text{h}}\text{u}^{13} \text{qei}^{43} + \text{i}^{13} \text{t}^{\text{h}}\text{u}^{13} \text{qei}^{43}$
- (4)  $\text{au}^{33} \text{pai}^{55} \text{eoj}^{52} \text{t}^{\text{h}}\text{u}^{13} \text{tsi}^{33} + \text{sau}^{33} \text{pai}^{55} \text{qei}^{43} - \text{t}^{\text{u}}^{55} \text{pai}^{55} \text{ljen}^{31} \text{t}^{\text{ou}}^{31}$
- (5)  $\text{au}^{33} \text{t}^{\text{h}}\text{u}^{13} - \text{t}^{\text{h}}\text{u}^{13} \text{qei}^{43}$
- (6)  $\text{tsi}^{33} \text{pai}^{55} \text{ljen}^{31} \text{qei}^{43} \div \text{pei}^{33} - \text{sau}^{33} \text{t}^{\text{h}}\text{u}^{13} \text{qei}^{43}$

Here are the results of the expressions above in random order (the result 18 is already given):

9, 18, 70, 76, 126, 152

(a) Determine the correct correspondences.

The following expressions all equate to the same number (some of them, however, can produce multiple results).

- (7)  $\text{i}^{13} \text{pai}^{55} \text{ljen}^{31} \text{t}^{\text{u}}^{55} + \text{i}^{13}$
- (8)  $\text{i}^{13} \text{pai}^{55} \text{sau}^{33} \text{t}^{\text{h}}\text{u}^{13} \text{t}^{\text{ou}}^{31} - \text{sau}^{33} \text{t}^{\text{h}}\text{u}^{13} \text{au}^{33}$
- (9)  $\text{t}^{\text{ou}}^{31} \text{t}^{\text{h}}\text{u}^{13} \text{au}^{33} + (\text{i}^{13} \text{pai}^{55} \text{ljen}^{31} \text{tsi}^{33} \div \text{eoj}^{52})$
- (10)  $\text{t}^{\text{h}}\text{u}^{13} \text{t}^{\text{ou}}^{31} + \text{i}^{13} \text{t}^{\text{h}}\text{u}^{13} \text{i}^{13}$
- (11)  $\text{i}^{13} \text{pai}^{55} \text{tsi}^{33} \text{t}^{\text{h}}\text{u}^{13} \text{t}^{\text{u}}^{55} \div \text{i}^{13}$

(b) What is the number that all expressions (7-11) equate to?

(c) Write expressions (7-11) with digits in all possible ways.

(d) Write in digits:

- a.  $\text{tsi}^{33}$
- b.  $\text{au}^{33} \text{t}^{\text{h}}\text{u}^{13}$
- c.  $\text{t}^{\text{ou}}^{31} \text{pai}^{55} \text{qei}^{43}$
- d.  $\text{t}^{\text{u}}^{55} \text{pai}^{55} \text{ljen}^{31} \text{i}^{13}$

(e) Write in Outuan Hmong: 1, 17, 96, 102, 540.

△ Outuan Hmong is a variety belonging to the Eastern dialects of Hmu, a Hmong-Mien language. It is spoken by around 250,000 people in Hunan, China.

—Pan Tung-Le

**Problem 3 (25 points).** Here are some words and word combinations in Tlingit and their English translations in random order:

- |                                 |   |
|---------------------------------|---|
| 1. <b>lingit'aaní</b>           | A. <i>around the outside of a house</i> |
| 2. <b>daaká.hít</b>             | B. <i>(a) person's footprint</i>        |
| 3. <b>dáanaa s'aatí</b>         | C. <i>roofing material</i>              |
| 4. <b>dáanaa yéilaa</b>         | D. <i>rich person</i>                   |
| 5. <b>Gagaan Hít</b>            | E. <i>descendants of Raven</i>          |
| 6. <b>gagaan wakdáana</b>       | F. <i>sunglasses</i>                    |
| 7. <b>gagaan x'us.eetí</b>      | G. <i>sunlight</i>                      |
| 8. <b>hít s'aatí</b>            | H. <i>clan leader</i>                   |
| 9. <b>héen x'aká</b>            | I. <i>Raven House</i>                   |
| 10. <b>kaa s'aatí</b>           | J. <i>Milky Way</i>                     |
| 11. <b>kaa x'us.eetí</b>        | K. <i>Sun House</i>                     |
| 12. <b>Lk'ayáak'w X'us.eetí</b> | L. <i>Winter Village</i>                |
| 13. <b>Lk'ayáak'w.x'ahéeni</b>  | M. <i>(the) world</i>                   |
| 14. <b>Tàakw.àani</b>           | N. <i>envelope</i>                      |
| 15. <b>hít kax'úx'u</b>         | O. <i>Lk'ayáak'w's saliva</i>           |
| 16. <b>x'a</b>                  | P. <i>on the mouth of the water</i>     |
| 17. <b>x'úx' daakáx'úx'u</b>    | Q. <i>Halloween mask</i>                |
| 18. <b>Yéil Hít</b>             | R. <i>counterfeit money</i>             |
| 19. <b>yéil.eetí kaa</b>        | S. <i>(a) person's boss</i>             |
| 20. <b>yéilaa</b>               | T. <i>mouth</i>                         |

(a) Determine the correct correspondences.

(b) What is the literal translation of **Lk'ayáak'w X'us.eetí**?

*(continued on next page)*

(c) Translate literally into English:

21. **wax'ahéeni** (*tears*)
22. **kaa x'a.eetí** (*leftover food*)
23. **tàakw.eeti** (*spring (season)*)

(d) Translate into Tlingit:

24. *mayor*
25. *On The Water House*

△ Tlingit belongs to the Na-Dene language family. It is spoken by approx. 500 people of the “Tlingit Aani” district, which constitutes the majority of Southwestern Alaska and Western Canada. **g, k, k', s', t', x', x',** and **.** are consonants; **á, é, ú,** and **í** are vowels. Vowel doubling denotes length.

*Raven House*, *Sun House*, and *On The Water House* are names of Tlingit clans. *Winter Village* is a place name. In Tlingit mythology, *Raven* was the creator god, described as a person able to assume the form of a raven and known for being a cunning trickster. *Lk'ayáak'w* was a Tlingit hero, who chased Dry-Cloud, a mythical being, for months until they both fled up into the skies and could no longer return. *Roofing materials* in traditional Tlingit houses are made of a form of paper.

—Pratyush Vempati

(!) No additional explanation besides the answers is required, nor will be marked.
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**Problem 4 (25 points).** Here are some verb forms in Paunaka written in the International Phonetic Alphabet and their possible English translations:

- |                         |  |
|-------------------------|--|
| 1. 'akatʃu              | You <sub>pl</sub> lifted her.                  |
| 2. nimua'ɛhi            | It is said that I will see you <sub>pl</sub> . |
| 3. pi'munuβɛ            | You <sub>sg</sub> saw them.                    |
| 4. tumu'ninuβɛ          | They took me.                                  |
| 5. tʃuma'nuβɛ           | She will take them.                            |
| 6. tijujuiku'nuβɛ       | They were crying.                              |
| 7. nitiβuβui'kutu       | I was already sitting.                         |
| 8. pi'samaβi            | You <sub>sg</sub> will hear us.                |
| 9. ti'tiβua             | She will sit.                                  |
| 10. tʃisamumui'kutu     | She was already hearing her.                   |
| 11. taka'tʃaβihi        | It is said that she will lift us.              |
| 12. ni'jutu             | I already cried.                               |
| 13. tʃakatʃutʃuiku'nuβɛ | They were lifting them.                        |
| 14. ni'samaɛ            | I will hear you <sub>pl</sub> .                |

(a) Translate into English:

- |               |                            |
|---------------|----------------------------|
| 15. numu'nuβɛ | 17. ti'muani               |
| 16. ɛ'jua     | 18. βakatʃutʃuikunuβɛ'tuhi |

(b) Translate into English in all possible ways:

19. tʃisama'nuβɛ

(c) Translate into Paunaka and mark the stress:

- |  |   |
|--|---|
| 20. It is said that you <sub>pl</sub> were hearing me. | 23. It is said that we will sit.        |
| 21. She was taking you <sub>sg</sub> .                 | 24. I lifted them.                      |
| 22. They will lift her.                                | 25. It is said that she already saw us. |

△ Paunaka is a critically endangered Southern Arawakan language. In 2022 there were only eight speakers remaining, with different proficiencies in the language.

ɛ and i are vowels; β, j, and tʃ are consonants. The mark ' before a syllable marks the stress.  
—Kazune Sato, Vlad A. Neacșu

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Good luck!