

Sixth International Olympiad in Theoretical, Mathematical and Applied Linguistics

Bulgaria, Sunny Beach, 4–9 August 2008

Solutions of the Problems of the Individual Contest

Problem #1. Rules:

1. The apostrophe indicates length if it follows a vowel, and is read as [ə] if it follows a consonant.
2. The letter **w** stands for a rounding of the lips after a consonant and for the sound [w] otherwise.
3. [ə] is pronounced, though not written, between any consonant and a following sonorant consonant ([l m n]).
4. [ə] is also pronounced before a consonant cluster at the beginning of a word.
5. **p t j g gw q qw** are pronounced as voiced consonants ([b d j g g^w ʝ ʝ^w]) at the beginning of a word or between vowels and as voiceless consonants ([p t c k k^w x x^w]) at the end of a word or next to another consonant.

Answers:

(a) 12 [əksən̩xōʝon], 13 [ət̩kəbox], 14 [gəm̩ʝjəmin], 15 [emtoʝ^watk], 16 [dēbəl̩c];

(b) 17 *tp'te'sn*, 18 *mtesgm*, 19 *alapt'g*, 20 *glamen*.

Problem #2. (a) Rules:

1. Number of syllables. Each line contains 6 syllables.
2. Alliteration. See the statement of the problem.
3. Internal rhyme. Let us denote the vowels (and diphthongs) in each line by V_1, V_2, \dots, V_6 . At least one consonant immediately following V_5 must immediately follow V_n ($n = 1, 2$ or 3). Also, in even lines $V_n = V_5$.

For instance, cf. lines IV, 1–6 (alliteration is marked in boldface, internal rhyme by underlining):

IV

- 1 háð**i** gramr, þars gnúðu,
- 2 geira hregg við seggi,
- 3 (rauð fnýsti ben blóð*i*)
- 4 bryngögl í dyn Skoglar,
- 5 þás á raun fyr ræsi
- 6 (réð eggliuðr) seggir ...

(b) Leftover words: **hœgra**, **smíði**.

V

- 1 a ríks (þreifsk reiddra øxa
- 2 b rymr ; knóttu spjór c glymj*a*)
- 3 d svartskyggð bitu seggi
- 4 e sverð þjóðkonungs ferðar,
- 5 þás (f hugfýldra hólða)
- 6 g hlaut h andskoti i Gauta
- 7 (hór vas j songr of k svírum)
- 8 l sigr (flugbeiddra m vigr*a*).

Problem #3. The modifier follows its head in both languages.

(a)	<i>jun</i>	bone	
	<i>i-jun</i>	skeleton	(multitude of bones)
	<i>i-wahnawa</i>	bunch of bananas	(multitude of bananas)
	<i>i-drai</i>	calendar	(multitude of days)
	<i>drai-hmitrötr</i>	Sunday	(holy day)
	<i>gaa-hmitrötr</i>	sanctuary	(holy place)
	<i>uma-hmitrötr</i>	church	(holy house)
	<i>ngöne-uma</i>	wall	(house border)
	<i>ngöne-gejē</i>	coast	(water border)
	<i>nyine-thin</i>	awl	(tool to poke)
	<i>tii</i>	to write	
	<i>bē-tii</i>	pencil	(tool to write)
	<i>bē-wöli</i>	fork	(tool to poke)
	<i>wöta</i>	animal	
	<i>bē-wöli-wöta</i>	spur	(tool to poke animal)
	<i>bē-ödu</i>	cup	(tool to drink)
	<i>ba-jié</i>	coast	(water border)
	<i>ba-bwén</i>	twilight	(night border)
	<i>a-pulut</i>	bed	(place to sleep)

(b) *wahnawa* ‘banana’, *drai* ‘day’, *wöli* ‘to poke’, *pulut* ‘to sleep’.

(c) *i-bii* ‘swarm of bees (multitude of bees)’, *tusi-hmitrötr* ‘Bible (holy book)’.

Problem #4. The noun suffixes seen in this problem are:

1. **-kasma** ‘above, overhead’, **-kotoya** ‘for’, **-pit** ‘with’;
2. **-šeh** ‘like, as if’;
3. **-ta?m** plural;
4. **-tih** ‘only (just, right)’.

After a nasal consonant (**m**, **n**, **ŋ**) the stops **p**, **t**, **k** become voiced (**b**, **d**, **g** respectively). If **k** comes after **y**, the two sounds exchange places.

The possessive pronouns are **?as** ‘my’ and **mis** ‘your’; if the noun begins with a stop, this consonant becomes voiced and the corresponding nasal appears before it.

- | | | |
|-----|---------------------------|-----------------------|
| (a) | cakyasma?tih | right above the vine |
| | kamaŋšeh | like a shadow |
| | ?as mok | my corn |
| | mis ndakta?m | your teeth |
| | pahsunbit | with the squash |
| | perolkotoyašehta?m | as if for the kettles |
-
- | | | |
|-----|----------------------|------------------------|
| (b) | for the chair | pokskukyotoya |
| | with my kettle | ?as mberolpit |
| | just like a mountain | koka?šehtih |
| | posts | komda?m |
| | above the shadows | kamaŋgasma?ta?m |
| | your town | mis ŋgumguy |

Problem #5. The Inuktitut sentences have the following general structure:

	X-(q)		V-		‘X V (himself).’
	X-(q)	Y-(r)mik	V-si-		‘X V a Y.’
X-up	Y-(q)		V-		‘X V the Y.’

where X and Y are nouns and V is the verb. If a noun gets the ending **-q** when it is either a definite object or a subject of a sentence that doesn’t have a definite object, it also gets **-r** before the ending **-mik** when it is an indefinite object (*nanu-q* — *nanu-r-mik*; *iluaqhaiji* — *iluaqhaiji-mik*). To say ‘your’, **-(q)** is replaced by **-it**, **-up** by **-vit**.

The verb receives the following suffixes:

- **-j** following a vowel or **-t** following a consonant;
- an ending for the persons of the subject and the definite object, if there is one:
 - in the first two schemata: **-u-tit** ‘2’, **-u-q** ‘3’;
 - in the third schema: **-a-it** ‘2/3’, **-a-nga** ‘3/3’, **-a-atit** ‘3/2’.

A transitive verb without an object is interpreted as reflexive.

- (a)
13. The wolf saw your shaman.
 14. Your polar bear hurt a boy.
 15. Your hunter cured himself.
 16. You shot the teacher.
 17. You came.
 18. You cured a hunter.
- (b)
19. *Angatkuup aanniqtaatit.*
 20. *Ilinniaqtitsijiup inuuhuktuq takujanga.*
 21. *Amaruit ukiakhaqtuq.*
 22. *Qingmirmik qukiqsijutit.*
 23. *Qingmiit ilinniaqtitsijimik aanniqsijuq.*