

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 ɣ ɣ^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 [əksənɫəvɔn], 13 [ətəkəbɔx], 14 [gəmūjəmin], 15 [emtoɣ^watk], 16 [dəbəlɔc];

(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 viðsegg i,
- 3 (rauð fnýsti ben blóði)
- 4 bryngögl í dyn Sköglar,
- 5 þás á rausn fyr ræsi
- 6 (réðegg lituðr) seggir ...

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

V

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

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-gejë</i>	coast	(water border)
<i>nyine-thin</i>	awl	(tool to poke)
<hr/>		
<i>tii</i>	to write	
<i>bé-tii</i>	pencil	(tool to write)
<i>bé-wöli</i>	fork	(tool to poke)
<i>wöta</i>	animal	
<i>bé-wöli-wöta</i>	spur	(tool to poke animal)
<i>bé-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) cakyasmatih	right above the vine
kamajšeh	like a shadow
?as mok	my corn
mis ndacta?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	kocakšehtih
posts	komda?m
above the shadows	kamajgasmata?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*; *iluaghaji* — *iluaghaji-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)
- The wolf saw your shaman.
 - Your polar bear hurt a boy.
 - Your hunter cured himself.
 - You shot the teacher.
 - You came.
 - You cured a hunter.
- (b)
- Angatkuup aanniqtaatit.*
 - Ilinniaqtitsijiup inuuhuktug takujanga.*
 - Amaruit ukiakhaqtug.*
 - Qingmirmik qukiqsijutit.*
 - Qingmiit ilinniaqtitsijimik aanniqsijuq.*