

en

Fifteenth International Linguistics Olympiad

Dublin (Ireland), 31 July – 4 August 2017

Individual Contest Solutions

Problem 1. The number system is duodecimal.

- **gwīnīj** — 1, **bà** — 2, **tàt** — 3, **nààs** — 4, **tùjūn** — 5, **tiīmīn** — 6, **tàāmà** — 7, **rwīt** — 8
- $\text{fāā}-\alpha = 12 - \alpha$ ($1 \leq \alpha \leq 3$): **fāātāt** — 9, **fāābà** — 10, **fāāgwīnīj** — 11
- **kūrū** — 12
- **bā-kūrū bī-ȣ** = $\gamma \cdot 12$ ($2 \leq \gamma \leq 8$), **bā-kūrū fāā-bī-ȣ** = $(12 - \gamma) \cdot 12$ ($1 \leq \gamma \leq 3$)
(the tone in the first syllable of γ becomes middle)
- β **ná** $\left\{ \begin{array}{ll} \text{gwē} & \text{gwīnīj } (\delta = 1) \\ \text{vè} & \delta \text{ } (2 \leq \delta \leq 11) \end{array} \right\} = \beta + \delta$ ($\beta = k \cdot 12$)

Answers:

- (a) 1. $5^2 + 3 + 4 = 32$
2. $3^4 = 81$
3. $7^2 + 9 + 1 = 59$
4. $9^1 = 9$
5. $8^2 + 2 + 5 = 71$
6. $2^5 = 32$
7. $9^2 + 4 + 3 = 88$
8. $4^3 = 64$
9. $16 + 21 = 18 + 2 + 17$

- (b) **bākūrū bītāt** — 36, **fāāgwīnīj** — 11, **kūrū** — 12.

- A. $108 - 3 - 13 = 92$
B. $49 - 14 - 15 = 20$

- (c) 6 — **tiīmīn**, 22 — **kūrū ná vè fāābà**, 97 — **bākūrū bīrwīt ná gwē gwīnīj**, 120 — **bākūrū fāābībā**.