

Problem #4

Agbirigba

Liam McKnight



Graded by

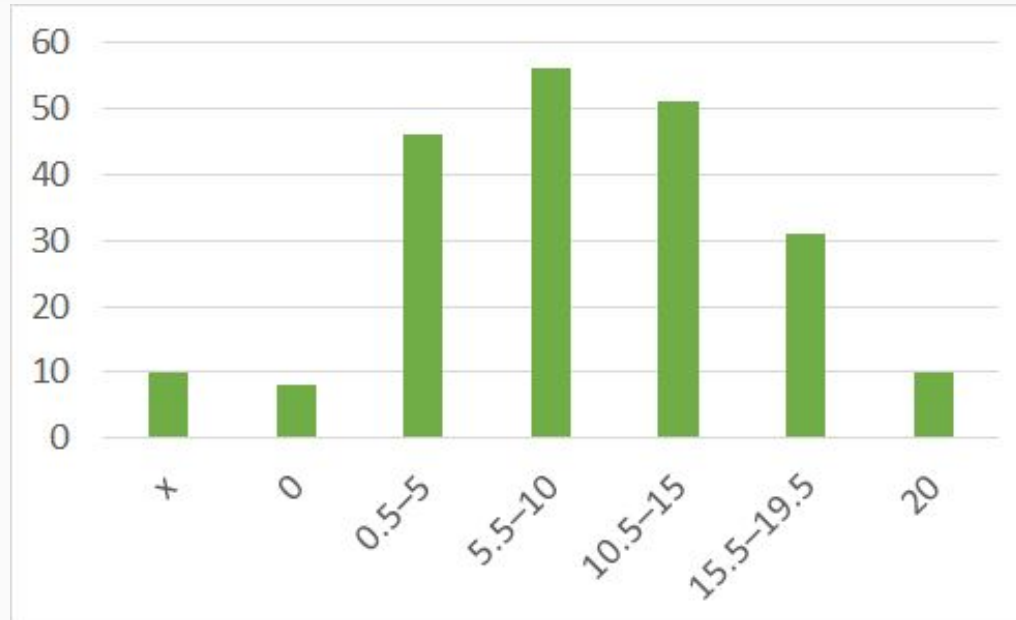
- Alexander Piperski
- Pan Tung-Le
- Dmitry Gerasimov
- Myself

(With thanks to all those who helped translate solutions)

Stats stats stats

- 2nd easiest problem by average score
- Average score: 9.18/20
- 10 people scored full marks!


Stats stats stats



Secret languages

- Transformations of ordinary language
- Usually involves adding or moving around sounds or syllables
- Found all over the world, for many different uses

Pig Latin (a form of English, not Latin)



But Zazu, you told me they're nothing but slobbering, mangy, stupid poachers!

Ix-nay on the upid-stay!

Qu language

~~Agbirigba~~ Logic of Agbirigba is same as "Qu language" [in this language you should add "qu" for each hece {I forgot its english form, so I wrote in turkish "ç"}] // P.S → hece - is small part of a word.

In Agbirigba, ti/ti/tu/tv (and ~~their~~ their other variants) using in order to "hide" the word. ~~It dep~~ ~~you should use one of the~~

Ogbakiri & Agbirigba

Atlantic-Congo



Igboid



Ikwerre



Ogbakiri



Ogbakiri & Agbirigba

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Igboid



Ikwerre



Ogbakiri



Ogbakiri & Agbirigba

- Agbirigba was “born from the need to communicate secretly by a (recently) persecuted section of the Ogbakiri community” (Akinlabi & Ndimele, 2013)
- Unintelligible to most other Ogbakiri speakers
- In 2010, only around 30 people reported being able to speak and understand Agbirigba

The solution

Appears to be fairly straightforward
- add *t + vowel* before every syllable,
that's it.

Ogbakiri	Agbirigba
ńdá	ńtódá
bísí	túbítísí
òyò	òtìyò
ńbórô	ńtóbótórò
óṣí	ótíṣí
òtú	òtútú
míní	tímítíní
wèrù	tùwètùrù
èbó	ètóbó
àwâ	àtówà

Ogbakiri	Agbirigba
rímé	tírítúmé
mónô	tómótônô
íbèrè	ítùbètìrè
áyâ	átíyâ
ónô	ótônô
móyô	tómótíyô
ṅgádá	ntògátódá
ómìrìmà	ótòmìtìrìtòmà
àgìrìgò	àtìgìtìrìtògò
wéné	túwétíné

The solution

“Which problem did you find the easiest?”

Quel problème vous a paru le plus facile?

4 mais parfois les apparences sont trompeuses...

“4, but sometimes appearances can be deceptive...”

The solution

- Insert **tV** before every syllable with the form **CV**
- Insert it *after* the first sound of words starting with:
 - a vowel

òtú | òtútú

- a syllabic nasal (**m, n, ɲ, ŋ**, carrying tone)
- The nasal consonant assimilates to **t** (becomes **n**)

ńbórô | ñtúbótúrò

The solution

V is the same as the following vowel in terms of:

- Nasality

rímě | tírítúmě

- Tone (high/low)

- Falling tone 'splits' into high followed by low

áyâ | átíyâ

The solution

V is the same as the following vowel in terms of:

- Tongue root position

ε, ι, ο and υ are pronounced as e, i, o and u respectively, but with the root of the tongue further back in the mouth.

e i o u	[+ATR]	wèrũ	tũwètũrũ		
ε ι ο υ α	[-ATR]	èbó	ètóbó	ńdá	ńtódá

(No word in O. or A. may contain vowels with different [ATR])

The solution

- **V** is selected from **i/ɪ/u/ʊ**
- May be determined by following consonant:
 - Before a labial consonant (**b/m/w**): select **u/ʊ**

bí sí | tú bí tí sí | rí m ě | tí rí tǔ m ě | w ě ě | tǔ w ě tǐ ě

- Before **y**: select **i/ɪ**

á y â | á tǐ y â

The solution

- **Otherwise, V** is determined by the following vowel:
- Before rounded (**o/ɔ/u/ʊ**) or back vowels (**a**): select **u/ʊ**

òtǔ

| òtútǔ

ńdá

| ńtódá

- Before front vowels (**e/ɛ/i/ɪ**): select **i/ɪ**

ótǐ

| ótítǐ

Assignments

(a) Exception: **míní** ~ **tímítíní**

-- should be **túmítíní**, because **m** is a labial consonant

Assignments

(b)

1. rúṭũ → túrú túṭù

2. rèwũ → tìrè tũwũ

3. bíkó → túbí túkó

4. ñyě riyǎ → ñtĩyě tìrì tĩyǎ

5. bék^{wũ} → túbé tũk^{wũ}

6. ríyòrò → tírí tĩyò tũrò

7. h^{wò}gâ → tũh^{wò}tũgâ

Honourable mentions

Honourable mentions

The following contestants scored 20/20:

Xie Lingrui

Hong Kong EAT

Ritam Nag

India Saffron

Daria Kryvosheieva

Ukraine i

Roman Shabanov

Netherlands Patat

Honourable mentions

The following contestants scored 20/20:

Merlin Fischer	Germany Streichholzschächtelchen
Mihai-Alexandru Bratu	Romania
Olga Zinovyeva	Russia Strelka

Best solutions

Best Solution - Problem #4

[tɪlɪɐtɪnɪt tʊzajtɪtsɪf]

Russia
Belka



Best Solution - Problem #4

Leonid Zaitsev

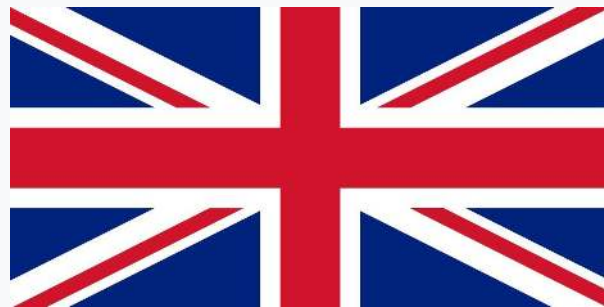
Russia
Belka



Best Solution - Problem #4

[atɪlɪktʊsantʊdə tʊɹɔbtʊsən]

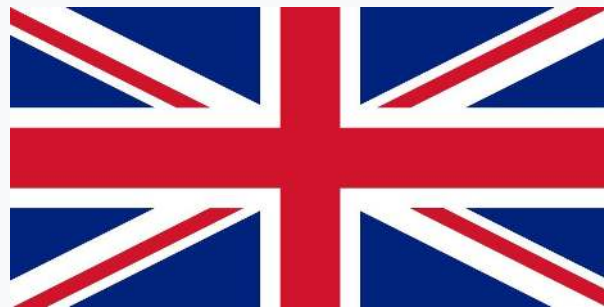
UK U



Best Solution - Problem #4

Alexander Robson

UK U



Best Solution - Problem #4

[ərtɪtɛm tɪhrɛtʃʊkə]

Ukraine i



Best Solution - Problem #4

Artem Hrechka

Ukraine i



Acknowledgements

- Ikwerre consultant: Maureen Abel
- My fellow markers
- The IOL Problem Committee
- Everyone who submitted solutions (even though it gave us a lot of work)
 - The 10 people who didn't submit solutions (you gave us slightly less work to do)

Sources

Akinbiyi Akinlabi and Ozo-Mekuri Ndimele (2013). *Agbirigba: The birth of an Igboid language*.

G. N. Clements and Sylvester Osu (2003). *Ikwere Nasal Harmony in Typological Perspective*.

G. N. Clements and Sylvester Osu (2005). *Nasal harmony in Ikwere, a language with no phonemic nasal consonants*.