

OzCLO competition 2011

Round One

This booklet contains five problems which you are asked to solve

Each problem is worth 20 points

All problems have several parts



<1>Mix Up on the Farm (1/2)

Tohono O'odham, formerly known as Papago, is spoken in south central Arizona in the south west of the United States of America and in northern Sonora in neighbouring Mexico.¹

The following are eight Tohono O'odham sentences and their English translations in **random order**.

Pronunciation notes: A colon (:) after a vowel means that the vowel is long. The apostrophe (') denotes a consonant called a glottal stop, like the stopping of air flow in the throat between the syllables of the English exclamation *uh-oh*. The letter *c* is pronounced like *ch* in English *chair*. The letter *ñ* is pronounced as it is in Spanish, corresponding to the *ni* sound in the English word *onion*. A hyphen (-) is used to connect a prefix to a word.

- | | |
|---------------------------------------|--|
| 1. Ha-cecposid 'o g wakial g wipsilo. | A. I am speaking. |
| 2. Pi 'ac ñeñok 'a:cim. | B. The man is speaking. |
| 3. Ceposid 'o g wakial g wisilo. | C. I am working. |
| 4. Pi 'o cickpan g cecoj. | D. The cowboys aren't branding the calf. |
| 5. Pi 'o ceposid g wapkial g wisilo. | E. We are not speaking. |
| 6. Cikpan 'añ 'a:ñi. | F. The men are not working. |
| 7. Ñeok 'o g ceoj. | G. The cowboy is branding the calf. |
| 8. Ñeok 'añ 'a:ñi. | H. The cowboy is branding the calves. |

1A. Match each Tohono O'odham sentence with its English translation by writing the appropriate sentence letter under each sentence number.

Tohono O'odham sentences	1	2	3	4	5	6	7	8
English Translations								

/16 points

¹ The data presented in this problem is from homework assignments used by Professor Kenneth Hale at MIT in the 1980's.



<1>Mix Up on the Farm (2/2)

- 1B. An English speaker trying to learn Tohono O'odham might make mistakes. For each sentence below, place a tick to indicate whether the sentence is correct or whether it is a mistake.

	Correct	Mistake
1. Ha-cecposid 'o g wakial g wisilo.	_____	_____
2. Cickpan 'añ 'a:ñi.	_____	_____
3. Cickpan 'ac 'a:cim.	_____	_____

/4 points



<2>Who owns what in Ulwa? (1/2)

Ulwa is a language spoken in the central American country of Nicaragua, a country which extends from the Pacific to the Atlantic. Ulwa contains quite a few loanwords from English, a variety of which is spoken in the Bluefields area on the Atlantic coast.

The following table contains some nouns and the possessive forms ("my X", "your X", etc.) for those nouns.

Note that Ulwa distinguishes between singular and plural "you", and also distinguishes between inclusive "we" (we including you) and exclusive "we" (we not including you).

ULWA	ENGLISH	ULWA	ENGLISH
arakbus	"gun"	kululuk	"woodpecker"
askana	"his/her clothes"	liima	"lemon"
bilamkana	"their fish"	mistu	"cat"
bilammana	"your (plural) fish"	paunimak	"our (inclusive) tomato"
diimuih	"snake"	sapaaka	"his/her forehead"
diikanamuih	"their snake"	sikbilh	"horsefly"
diimamuih	"your (singular) snake"	siknibilh	"our (inclusive) horsefly"
gaadni	"our (inclusive) god"	suumanalu	"your (plural) dog"
iibin	"heaven"	taikinatai	"our (exclusive) squirrel"
kahma	"iguana"	taim	"time"
kapak	"manner"	uumamak	"your (singular) window"
kapakka	"his/her manner"	waikinaku	"our (exclusive) moon"
karaskanamak	"their knee"	wasakanala	"their possum"
kiika	"his/her stone"	wasala	"possum"

**<2>Who owns what in Ulwa? (2/2)**

2A. The Ulwa words for (a-h) can be made from the following disordered pieces. You may not use a piece more than once, but some pieces will be left over.

a.	"his/her grey squirrel"	<u>taikatai</u>	<i>ma</i>	<i>ni</i>	<i>ma</i>	<i>pak</i>
b.	"our (inclusive) heaven"	_____	<i>ki</i>	<i>lii</i>	<i>ka</i>	<i>ki</i>
c.	"your (plural) iguana"	_____	<i>rak</i>	<i>lu</i>	<i>†ai</i>	<i>mis</i>
d.	"his/her gun"	_____	<i>na</i>	<i>ki</i>	<i>ma</i>	<i>ka</i>
e.	"your (singular) lemon"	_____	<i>ma</i>	<i>kah</i>	<i>na</i>	<i>ka</i>
f.	"their woodpecker"	_____	<i>†aim</i>	<i>na</i>	<i>ka</i>	<i>bus</i>
g.	"our (exclusive) time"	_____	<i>a</i>	<i>luk</i>	<i>tu</i>	<i>na</i>
h.	"my cat"	_____	<i>ii</i>	<i>†ai</i>	<i>bin</i>	<i>ku</i>

/14 points

2B. The remaining pieces (those that you did not use in 2A) can be rearranged into an Ulwa word. What is the word, and what does it mean?

Ulwa word**English Translation**

/6 points



<3>Doubling up in Caterpillar Country (1/2)

Arrernte is an Australian Aboriginal language, spoken mainly in and around Alice Springs in the centre of the country. It is one of the largest Aboriginal languages, spoken by both adults and children and taught in schools such as the Yipirinya School in Alice Springs.²

When written, Arrernte uses the same alphabet as English. Some combinations of letters signal special sounds, in the same way that English 'th' represents a sound that is *not* a combination of the 't' and 'h' sounds. For example, 'rr' represents the single sound of a rolled r, 'rl' indicates an l with the tongue tip touching higher and further back, and 'th' indicates a t-like sound with the tongue further forward, touching the back of the upper teeth.

Consider these examples of Arrernte verbs:³

Arrernte	English	Arrernte	English
<i>atherreme</i>	'is laughing'	<i>areme</i>	'is looking'
<i>atherreke</i>	'was laughing'	<i>areke</i>	'looked'
<i>atherreperreme</i>	'keeps laughing'	<i>arerlpareme</i>	'starts to look'
<i>atheme</i>	'is grinding'	<i>atakeme</i>	'demolishes something'
<i>atheke</i>	'was grinding'	<i>atakepakeme</i>	'keeps demolishing something'
<i>athelpatheme</i>	'starts to grind'	<i>aterlpatakeme</i>	'starts to demolish something'
<i>mpwareme</i>	'is making'	<i>untheme</i>	'goes along'
<i>mpwareke</i>	'was making'	<i>untheke</i>	'went along'
<i>mpwarepareme</i>	'keeps making'	<i>unthepuntheme</i>	'keeps going along'
<i>mpwelpempwareme</i>	'starts to make'	<i>unthepuntheke</i>	'kept going along'

3A. What meaning is expressed by *-eme* or *-eke* suffixed (i.e., added) to the stem of each of these words? The stem is the part of the word which is common to all of its inflected forms (e.g., in English, the stem of the words *walk*, *walks*, *walking* and *walked* is *walk*). (Tick your answer from the following choices.)

Type of action Time of action Duration of action Start of action

/1 point

² *Yipirinya* is the Arrernte word for 'caterpillar', the symbol of the Arrernte people of Alice Springs.

³ Examples from:

A Learner's Guide to Eastern and Central Arrernte by Jenny Green.

Eastern and Central Arrernte to English Dictionary by John Henderson and Veronica Dobson.



<3>Doubling up in Caterpillar Country (2/2)

3B. Indicate, by completing the 'rule' (with no more than *one* word in each space), which aspects of a word show that an action is:

(i) frequent ('keeps on doing X')

Add _____ to the verb stem followed by reduplication (i.e., repetition or copying) of the _____ vowel and consonant(s) of the verb stem.

(ii) commencing ('starting to do X')

Add _____ or _____ (the latter after *r* or *t*) after the _____ consonant(s) of the verb stem followed by the whole _____

/8 points

3C. Which 'commencing' verb in the list on the previous page requires an additional 'tweak' to the general rule in 3B (ii) in order to produce the attested form? (Write the Arrernte verb placing each letter in a separate cell in the box provided.)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

/2 points

3D. Here are three new Arrernte words:

arlkweme 'is eating'

kwerneme 'is swallowing'

itirreme 'is thinking'

How would you say the following in Arrernte? (Write the word in the space indicated.)

(i) was eating _____

(ii) kept swallowing _____

(iii) starts to think _____

/9 points



<4>BrokEnglish (1/2)

Spencer, a computational linguist trying to lessen the amount of time he spends on email, writes a simple find-and-replace script that he hopes will mean he spends a little less time typing out language names.

The script goes through his emails before they're sent and automatically replaces certain two letter ISO 639-1 language codes (like `fr`) with the full names of the languages (like `French`):

<u>ISO 639-1 code</u>	<u>Language Name</u>
<code>ce</code>	Chechen
<code>ch</code>	Chamorro
<code>en</code>	English
<code>fr</code>	French
<code>he</code>	Hebrew
<code>is</code>	Icelandic
<code>ro</code>	Romanian

Things seem to be going great... until he starts getting some very confused replies, like this message:

```
From: christine@ioling.org
Sent: Monday, 23 August 2010 11:38
To: spencer@ioling.org
Subject: Re: Time-saving script
```

```
um, spence? i think something has gone REALLY wrong
with your script...
```

```
On Mon, Aug 23, 2010 at 09:34 AM spencer@ioling.org
wrote:
```

```
> Hebrewy, ChamorRomanianrICHebrewcHebrewnlandic!
whEnglish
> you get a FrEnglishcHebrewe momEnglisht, cHebrewck
out
> thICHebrewcHebrewnlandic niCHebrewcHebrewn little
> pRomaniangram i wRomaniante.
> -- spEnglishCHebrewcHebrewnr
```




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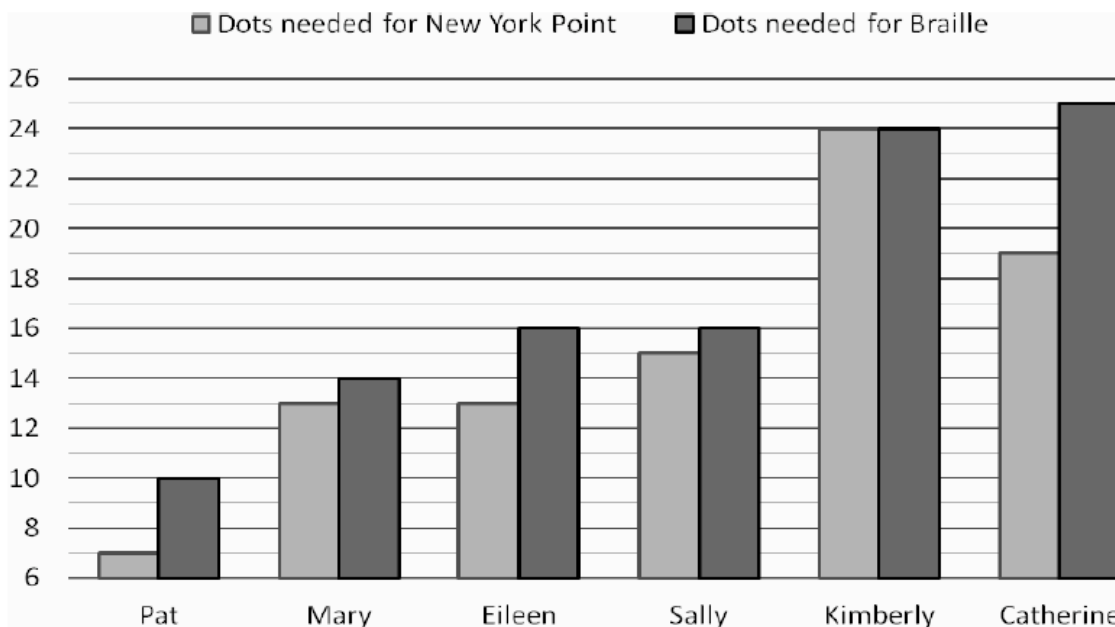


<5>The War of the Dots (1/3)

Before the *Braille* tactile writing system was well-established in the U.S., the *New York Point* system was widely used in American blind education. New York Point was developed in the 1860s by William Bell Walt for the New York Institute for the Blind, and was intended to fix the shortcomings he perceived in the French and English Braille standards.

The next six decades in blind education in the United States became known as the *War of the Dots*, as bitter feuds developed between proponents of this homegrown system and more international Braille-based systems. New York Point finally met its end after a series of public hearings convinced educational authorities that there should be a single standard for the entire English-speaking world.

Experts from both sides weighed in on the systems' merits. The proponents of New York Point argued that allowing letters to vary in size (from a 2x1 grid to a 2x4 grid, rather than a fixed 3x2 grid) allowed the most frequent letters to use fewer columns, resulting in space (and cost!) savings when publishing texts for the blind. For example, consider the number of dots needed to write the following names in each system:



They also pointed out that New York Point had a distinct series of capital letters, whereas Braille only had a "capital" punctuation mark.

On the Braille side, experts such as Helen Keller wrote that the New York Point capitalization system was unintuitive and confusing ("I have often mistaken *D* for *j*, *I* for *b* and *Y* for double *o* in signatures, and I waste time looking at initial letters over and over again"), and that using Braille allowed her to correspond with blind people from all over the world.



<5>The War of the Dots (2/3)

5A. The following words in New York Point represent (in no particular order) the names *Ashley*, *Barb*, *Carl*, *Dave*, *Elena*, *Fred*, *Gerald*, *Heather*, *Ivan*, *Jack*, *Kathy*, and *Lisa*. Which is which? Write the first letters of the appropriate names in the rightmost column.

/12 points

a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		
i.		
j.		
k.		
l.		



<5>The War of the Dots (3/3)

5B. How would you write the following names in New York Point? (You are provided with a 2x4 grid in which to write each New York Point letter. You may place a maximum of one dot per cell.)

a. Billy	<table border="1"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>									<table border="1"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>									<table border="1"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>									<table border="1"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>									<table border="1"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>								
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/8 points



These problems were created by the following people:

Problem 1

Lori Levin, Carnegie Mellon University

Problem 2

Richard Sproat, Oregon Health and Science University

Problem 3

Mark Dras, Macquarie University

Mary Laughren, University of Queensland

Problem 4

Patrick Littell, University of British Columbia

Problem 5

Harold Somers, Dublin City University

OzCLO problem sets are created in cooperation with:

NACLO (North American Computational Linguistics Olympiad)

AILO (All Ireland Linguistics Olympiad)

UKLO (UK Linguistics Olympiad)