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The Twelfth Annual

North American Computational Linguistics Olympiad 2018

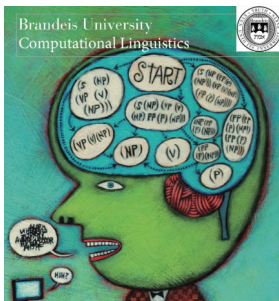### www.nacloweb.org

Open Round
January 25, 2018

Serious language puzzles that are surprisingly fun!
-Will Shortz, Crossword editor of The New York Times and Puzzlemaster for NPR

Welcome to the twelfth annual North American Computational Linguistics Olympiad! You are among the few, the brave, and the brilliant to participate in this unique event. In order to be completely fair to all participants across North America, we need you to read, understand, and follow these rules completely.

Rules

1. The contest is three hours long and includes eight problems, labeled A to H.
2. Follow the facilitators' instructions carefully.
3. If you want clarification on any of the problems, talk to a facilitator. The facilitator will consult with the jury before answering.
4. You may not discuss the problems with anyone except as described in items 3 & 11.
5. Each problem is worth a specified number of points, with a total of 100 points. In this year's open round, no points will be given for explanations. Instead, make sure to fill out all the answer boxes properly.
6. All your answers should be in the Answer Sheets at the end of this booklet. ONLY THE ANSWER SHEETS WILL BE GRADED.
7. Write your name and registration number on each page of the Answer Sheets. Here is an example: Jessica Sawyer   #850
8. The top 10% of participants (approximately) across the United States and Anglophone Canada in the open round will be invited to the second round.
9. Each problem has been thoroughly checked by linguists and computer scientists as well as students like you for clarity, accuracy, and solvability. Some problems are more difficult than others, but all can be solved using ordinary reasoning and some basic analytic skills. You don't need to know anything about linguistics or about these languages in order to solve them.
10. If we have done our job well, very few people will solve all these problems completely in the time allotted. So, don't be discouraged if you don't finish everything.
11. **DO NOT DISCUSS THE PROBLEMS UNTIL THEY HAVE BEEN POSTED ONLINE! THIS MAY BE A COUPLE OF MONTHS AFTER THE END OF THE CONTEST.**

Oh, and have fun!

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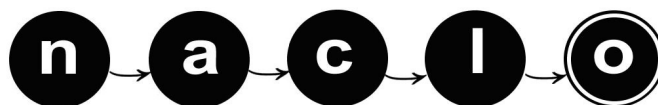
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Problem E: Michael Salter
Problem F: Tom McCoy
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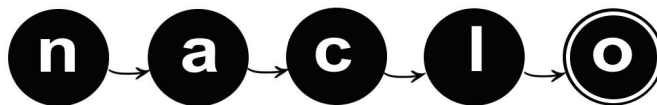
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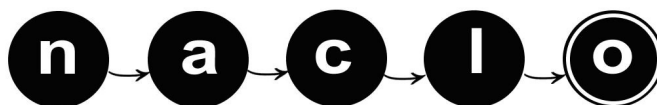
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NACLO 2018

Sites

As well as more than 200 high schools throughout the USA and Canada

(A) At Ease in Gilbertese (1/1) [10 points]

The Gilbertese language is spoken by most of the over 100,000 people who live in the Pacific island nation of Kiribati. Here are some sentences in Gilbertese with their English translations:

Gilbertese	English
ko nakonako ŋkoe	You are walking.
e nakonako te aiine	A woman is walking.
i takaakaro ŋai	I am playing.
e nakonako nakon te titooa Meeri	Mary is walking to the store.
a tekateka irarikin taian auti taian aiine	The women are sitting next to the houses.
a tebotebo taian nakekei n te bong aei	The people are bathing today.
i tebotebo inanon te auti ŋai	I am bathing in the house.
a takaakaro inanon te titooa taian ataei	The children are playing in the store.
ko tekateka ŋkoe ningaabong	You will sit tomorrow.
a takaakaro irarikin te kawai taian ataei n te bong aei	The children are playing next to the road today.

Answer the following questions in the Answer Sheets:

A1. Below are some Gilbertese sentences with their words in scrambled order:
    a. bong n Meeri auti e nakon te te nakonako aei
    b. inanon ŋai kawai i te tekateka
    c. ataei a nakon taian ningaabong kawai nakonako te

For each of these three sentences:
    i. Rearrange the words in the sentence into the correct Gilbertese word order.
    ii. Translate the rearranged sentence into English.

A2. Translate into Gilbertese:
    a. The women will play tomorrow.
    b. You are sitting next to the store today.

(B) The Pame Game (1/2) [20 points]

The languages Northern and Central Pame belong to the Oto-Pamean branch of the Oto-Manguean language family. They are spoken in separate states of Mexico by approximately 5620 and 4350 people, respectively. Like all languages belonging to the same family, they have preserved some features of the proto-language (the common ancestor language of the family) but have changed in other features, making the languages similar yet different from one another. These differences can be in both the structure of the grammar and in the pronunciation of words. To help you know how words in these languages are pronounced, the following key is given to the pronunciation of the symbols:

t	voiceless alveolar plosive (the first sound in English *tea*)
d	voiced alveolar plosive (the first sound in English *do*)
n	voiced alveolar nasal (the first sound in English *new*)
s	voiceless alveolar fricative (the first sound in English *see*)
r	voiced alveolar flap (the sound made by the *r* in the Spanish word *pero*)
l	voiced alveolar lateral (the first sound in English *lead*)
tʃ'	voiceless alveolo-palatal ejective affricate (similar to the first sound in English *chew*)
ɲ	voiced alveolo-palatal nasal (similar to the *ny* sound in *canyon*)
k	voiceless velar plosive (the first sound in English *key*)
g	voiced velar plosive (the first sound in English *goo*)
k'	voiceless velar ejective (similar to the first sound in English *key*)
ʔ	voiceless glottal plosive (the sound between the vowels in English *uh-oh*)
h	voiceless glottal fricative (the first sound in English *he*)
a	low unrounded vowel (similar to the sound in English *ah*)
e	mid front unrounded vowel (similar to the sound in English *eh*)
i	high front unrounded vowel (the first sound in English *eat*)
o	mid back rounded vowel (similar to the sound in English *oh*)
u	high back rounded vowel (the first sound in English *oops*)
ḭ	high front unrounded vowel produced with glottal fry
ũ	high back rounded vowel with nasal airflow

n → a → c → l → o
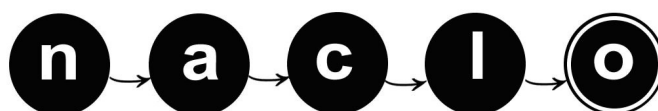
(B) The Pame Game (2/2)

Some numbers from Northern Pame are given below:

9 = kara tenhiuɲ sante
13 = kara tenhiuɲ gitʃ'ai̯
17 = kanuje tenhiuɲ sante
20 = kanuje tenhiuɲ giriui̯
26 = karnuʔ tenhiuɲ nuji
30 = karnuʔ tenhiuɲ tiria
35 = giriui̯ tenhiuɲ rnuʔ

Here are some arithmetic equalities in Central Pame (note that × means multiplication):

(1)	nda ntsawʔ + seskaʔai nda ntsawʔ nda = nda lien tiliɲũhũɲ
(2)	kiɲui + nda ntsawʔ = seskaʔai nui
(3)	nda lien nda × nui = nui lien nui
(4)	tiliɲũhũɲ + kik'ai = tilija × nui
(5)	seskaʔai ranhũʔ × ranhũʔ = nda lien seskaʔai nda ntsawʔ nda
(6)	seskaʔai kik'ai + kik'ai = nui × seskaʔai
(7)	kik'ai + ranhũʔ = nda ntsawʔ
(8)	nda + nui = ranhũʔ

Answer the following questions in the Answer Sheets:

B1. Given that the following equality is satisfied:

Northern Pame		Central Pame
(9) teriuhiɲ × kara tenhiuɲ nuji	=	ranhũʔ lien seskaʔai

a. Convert the following Northern Pame numbers to numerals:
- nuji
- karnuʔ tenhiuɲ teriuhiɲ

b. Write out the following numbers in Central Pame:
- 1
- 3
- 9
- 56
- 60

n → **a** → **c** → **l** → **o**

(C) All Roads Lead to Tirana (1/3) [20 points]
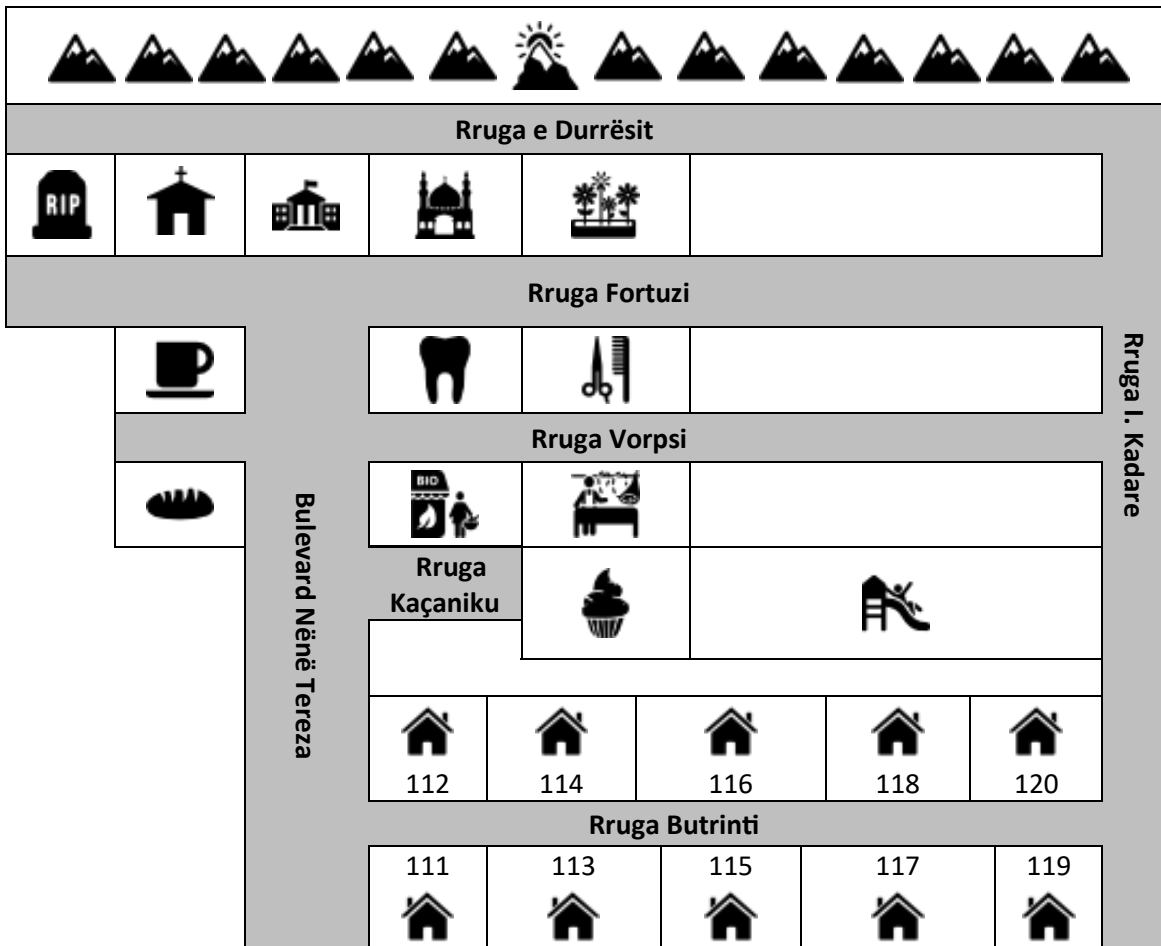
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You are visiting an Albanian[1] town close to Tirana. The man at the information center tells you some information about what places are in the town and where they are on the map above. You are both looking at the map from the same perspective as it is shown here, so (for example) a dentist is in front of the mosque, behind the market, to the left of the barbershop, and to the right of the cafe. Note that the man only comments on buildings that are immediate neighbors (perhaps across a street); for example, he might say that the bakery is to the left of the market, but he would not say that the bakery is to the left of the butcher even though that is technically true. Also, he does not talk about diagonal neighbors, so for example he would not say anything about the butcher's relationship to the dentist.

1. Albania is a Balkan country of close to 3 million people with Western coastlines along both the Adriatic and Ionian Seas.

(C) All Roads Lead to Tirana (2/3)

Here is what the man said to you:

Kafeneja është ndërmjet kishës dhe furrës dhe majtas nga dhëmbëtarit.
Bashkia e qytetit është ndërmjet kishës dhe xhamisë.
Dhëmbëtari është majtas nga floktorit dhe para xhamisë.
Dyqani është para dhëmbëtarit dhe majtas nga mishtorja.
Mishtorja është pas ëmbëlsirës.
Kopsht është djathtas nga xhamia dhe para maleve.
Sheshi lojërash është djathtas nga ëmbëlsira.

Answer the following questions in the Answer Sheets:

C1. Match the Albanian place name with the English translation based on the information above and write the matching letter next to the corresponding number.

1. Bashkia e qytetit
2. Dhëmbëtar
3. Ëmbëlsirë
4. Furrë
5. Kafene
6. Mishtore
7. Kishë
8. Kopsht
9. Male
10. Floktor
11. Shesh lojërash
12. Dyqan
13. Varrezë
14. Xhami

	Bakery	A.
	Barbershop	B.
	Butcher	C.
	Cafe	D.
	Cemetery	E.
	Church	F.
	City Hall	G.

	Dentist	H.
	Garden	I.
	Confectionery	J.
	Market	K.
	Mosque	L.
	Mountains	M.
	Playground	N.

n a c l o

(C) All Roads Lead to Tirana (3/3)

C2. You receive the following directions for a tour:

Filloni në cep të rrugëve rruga e Durrësit dhe rruga I. Kadare.
Shkoni drejt në rrugën e Durrësit në vendin e pestë në të majtë (në fund të rrugës).
Shkoni nëpër varrezën.
Kthehuni majtas në rrugën Fortuzi. Kafeneja është vendi i parë në të djathtë.
Shkoni në vendin e tretë në të djathtë.
Shkoni nëpër floktorin dhe kthehuni djathtas.
Shkoni në vendin e dytë në të djathtë.
Mos shkoni nëpër kafenen.
Kthehuni prapa dhe kaloni bulevardin Nënë Tereza.
Dyqani është vendi i parë në të djathtë. Floktori është vendi i dytë në të majtë.
Shkoni deri në fund të rrugës.
Kthehuni djathtas.

Hint: The tour goes along roads and through locations.

At the end of the tour, if you keep walking, what will be the first site (not considering empty lots) on your right that you come to? Write the name of the place in English.

C3. You want to invite all of the new people you have met to go to the café. You know that they all live on Rruga Butrinti but you aren't sure who lives in which house. You go to the corner of Bulevard Nënë Tereza and Rruga Butrinti to ask for directions. A lady there tells you the following while pointing up the road:

Drita jeton në shtëpinë e dytë në të majtë.
Kustrimi jeton në shtëpinë e pestë në të majtë.
Lindita jeton në shtëpinë e katërt në të djathtë.
Sokoli jeton në shtëpinë e parë në të djathtë.
Valoni jeton në shtëpinë e tretë në të majtë.

On the Answer Sheet, next to each person's name write that person's house number.

(D) Intergalactic Grammars (1/3) [5 points]

Your job as a linguist in the space federation is to translate between languages for the international team aboard the *U.S.S. Enterprise*. One day, you see some words flashing on your switchboard:

"Houston, we have a problem. Houston, we have a problem."

"The Klingons?" you ask.

"Roger that. Klag is frantic. He won't go back to the Pagh until we answer him," came the reply.

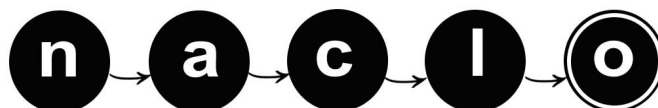"Copy. We are working on it. We will report back ASAP," you respond.

You know that the Klingons are grammarians, so you must make sure that you accurately translate your message into the Klingon language to avoid upsetting them further.

You think back to the last time you had to translate something. In that case, you needed to translate the Turkish sentence *bir kız bir kitap okudu* into English. First you looked up all of the Turkish words:

Turkish	English
bir	a
kız	girl
kitap	book
okudu	read

By replacing each Turkish word with its English equivalent, you got the translation *a girl a book read*...which didn't seem quite right. Luckily, at that point your boss came over. (Your boss is very wise, as are all linguists, especially those who organize linguistics Olympiads). She told you that you can't just translate Turkish to English word-for-word because Turkish and English use different word orders. She then handed you a file of Synchronous Context Free Grammars (SCFGs). An SCFG provides you with two systems of rules for constructing sentences in the correct word order, one system for each language. This way, you can translate not only words, but also word order, from one language to another. Here is the English-Turkish SCFG from the file she gave you:

<English, Turkish> SCFG
S → <NP VP, NP VP>
VP → <V NP, NP V>
NP → <a book, bir kitap>
NP → <a cat, bir kedi>
NP → <a girl, bir kız>
NP → <a turtle, bir kaplumbağa>
V → <ate, yedi >
V → <bit, ısırdı>
V → <chased, kovaladı >
V → <read, okudu >
V → <saw, gördü >

n → a → c → l → o

(D) Intergalactic Grammars (2/3)

Using this SCFG, you correctly translated *bir kız bir kitap okudu* into *a girl read a book*. You were also able to translate in the other direction, for example to translate *a turtle saw a cat* as *bir kaplumbağa bir kedi gördü*.

Answer the following questions in the Answer Sheets:

D1. Using only words in the <English, Turkish> SCFG presented above,
   a. Write an English sentence that is exactly 20 letters long (excluding spaces and punctuation).
   b. Translate your sentence into Turkish.

D2. Before you can answer the Klingons, you have to clarify something between the members on board the *U.S.S. Enterprise*. You have already translated something that Elif, who speaks Turkish, told Tovo, who speaks Malagasy, using the Turkish-Malagasy SCFG below on the left. The Malagasy sentences you generated are shown in the table on the right. Now, you need to translate the sentences for Elisabeth, who speaks English. On your Answer Sheet, write the English translations of these Malagasy sentences.

<Turkish, Malagasy> SCFG
S → <NP VP, VP NP >
VP → <NP V, V NP >
NP → <bir kaplumbağa, sokatra>
NP → <bir kedi , saka>
V → < gördü¸ nahita>
V → < ısırdı, nanaikitra >
V → < kovaladı, nanenjika >
V → < yedi, nihinana >

	Malagasy
a.	nahita sokatra saka
b.	nanenjika saka sokatra
c.	nanaikitra saka sokatra
d.	nihinana saka sokatra

D3. You should probably get around to answering Klag, who is by now even more irate than before because you've spent so much time reminiscing about Turkish and Malagasy. Use the SCFG for English to Klingon (on the next page) to translate the following sentences into Klingon. Write your answers next to the associated letters on the Answer Sheet.
   a. The pet bites.
   b. The *U.S.S. Enterprise* will battle the Klingons.
   c. The leaders know that the Klingons know that the commander learned that a spy saw that the Klingons have a pet.

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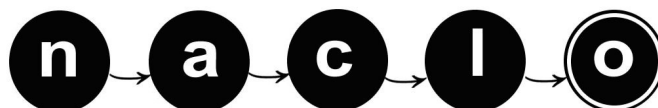
(D) Intergalactic Grammars (3/3)

<English, Klingon> SCFG
S → <NP VP, VP NP>
S → <Comp S, S Comp>
VP → <V NP, NP V >
VP → <V S, S V>
VP → <bites, chop>
Comp → <that, 'e'>
NP → <the commander, la'>
NP → <the Klingons, tlhInganpu'>
NP → <the leaders, DevwI'pu'>
NP → <a pet, Saj>
NP → <the pet, Saj>
NP → <a spy, ghoqwI'>
NP → <the U.S.S. Enterprise, 'ejDo' 'entepray'>
V → <have, lughaj>
V → <know, SovTah>
V → <learned, ghojpu'>
V → <saw, leghpu'>
V → <will battle, ghobrupqa'>

Context Free Grammars provide a set of rules to describe a natural (ie, human) language. Because of the ability of these rules to construct longer phrases and sentences from a finite list of smaller units, Context Free Grammars have been used in computer science as components of parsing and translation algorithms. Synchronous Context Free Grammars provide the CFGs of two languages simultaneously and matched up with each other. This is especially useful for translation purposes.

(E) Parties in Palauan (1/1) [5 points]

Palau is a country in the Pacific Ocean composed of eight islands and over 200 islets. In addition to English, the Austronesian language Palauan is an official language of Palau. Below are some noun phrases from the Palauan language, with their English translations:

Palauan	English
eru ęl buil	two months
ede ęl sils	three days
tede ęl chad	three people
kllolem ęl malk	six chickens
teim ęl sensei	five teachers
eim ęl rak	five years
etiu ęl klębęse	nine nights
kltiu ęl hong	nine books
kllolem ęl lius	six coconuts
teai ęl ngalęk	eight children
tęruich me a tede ęl buik	thirteen boys
tęruich me a euid ęl sikang	seventeen hours
ongeru ęl buil	February
ongede ęl ureor	Wednesday

Answer the following questions in the Answer Sheets:

E1. Give the English for:
    a. telolem ęl sensei
    b. tęruich me a etiu ęl buil
    c. ongetęruich me a ongeru ęl buil
    d. ongeim ęl ureor

E2. Give the Palauan for:
    a. eight days
    b. nineteen people
    c. seven teachers
    d. June
    e. August

E3. For each of the following phrases, write the Palauan word that would be used to translate the bolded word:
    a. **three** hours
    b. **three** girls
    c. **three** dolphins
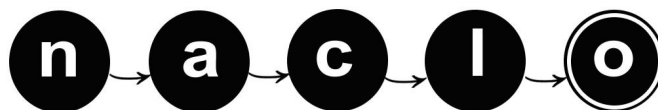
(F) A Match Made in Vietnam (1/1) [15 points]

Below on the left are 23 words and phrases in Vietnamese, with their English translations on the right. The translations are in a different order than the original Vietnamese entries.

| Vietnamese		English	
1.	băng	A.	bouquet (a bunch of flowers)
2.	bó	B.	chalk
3.	bó hoa	C.	circle
4.	cánh hoa	D.	cluster
5.	đá	E.	detour
6.	đá lửa	F.	fire
7.	đá phấn	G.	flint (a stone used to make sparks)
8.	đường	H.	flower
9.	đường vòng	I.	ice
10.	hoa	J.	iceberg
11.	lửa	K.	mountain
12.	mở	L.	petal
13.	mở đường	M.	pollen
14.	mở mắt	N.	powder
15.	núi	O.	road
16.	núi băng	P.	rock
17.	núi lửa	Q.	tear (as in teardrop)
18.	nước đá	R.	to make aware
19.	nước mắt	S.	to open
20.	phấn	T.	to pave the way
21.	phấn hoa	U.	volcano
22.	vòng	V.	wreath
23.	vòng hoa			

Answer the following questions in the Answer Sheets:

F1. Match the Vietnamese entries to their English translations.
    Note: One of the English translations will be used twice.
    Hint: The Vietnamese word for "wing" is "cánh." The Vietnamese word for "water" is "nước."

F2. What is the English translation of "mắt"?
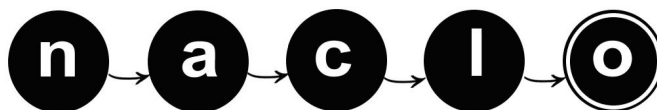
(G) By the Same Token (1/3) [10 points]

While sifting through some old papers in a computer science department, you come across a table of words and numbers. At first glance, it seemed as if these numbers were behaving completely...*unpredictably.* Here is what the table looked like:

Word	Types	Tokens
rock	4	4
paper	4	5
scissors	5	8
shoot	4	5
shaping	7	7
add	2	3
senselessness	4	13
metal	5	5
assesses	3	8
hemidemisemiquaver	(a)	(b)
squeegee	(c)	(d)
(e)	(f)	1
(g)	3	3
(h)	8	8
(i)	2	4
(j)	4	7
(k)	13	13

Answer the following questions in the Answer Sheets:

G1. On your answer sheet, fill in possible values for the missing cells. For (e), (g), (h), (i), (j), and (k), you will receive more points for answers that are real English words than for ones that are not.

G2. You find one more mysterious table amongst the papers. This table shows some words in Shilha, a Berber language spoken in Morocco that is also known as Tasusiyt, along with information about their types, tokens, and English translations:

Shilha word [CORRUPTED]	Types in the correct Shilha word	Tokens in the correct Shilha word	English translation
LSFAFUALUSA	5	6	male chicken
ZPSIAFLULRUQSNTFS	6	7	male chickens
QZPTLSALFUALRUSTFS	6	8	female chicken
QZPSTAILFLUSLQRUSINTFS	7	9	female chickens
AAAATTBBBBIRRRRRR	5	5	male pigeon
IIITBIIRINIII	5	6	male pigeons
TATBIRT	5	7	female pigeon
IITITBIRINI	5	8	female pigeons
AMFGUQNARS	5	6	ox (male bovine)
IFUNASN	6	7	oxen (male bovines)
ZSPTACFHUXNAVSTLQF	6	8	cow (female bovine)
TIFUNASIN	7	9	cows (female bovines)
ASHLHIY	6	7	male speaker of Shilha
ISHLATRHIYN	6	8	male speakers of Shilha
TASHLHIYT	7	9	female speaker of Shilha
TISHLHIYIN	7	10	female speakers of Shilha
QPZFIATPNDTNRTLNARTRTNR	3	5	mountain (masculine)
QZPIBXDZWRPLANTSRLYXNFS	5	6	mountains (masculine)
QPZNTIIAIPNDNILRANRNITNFS	4	7	mountain (feminine)[1]
QPZTFMITPDNMRLTANFRSHILYNV	6	8	mountains (feminine)

However, the file has been corrupted so that there are a bunch of extra letters in the "Shilha Word" column (the other three columns are still accurate). Your task is to remove the extra letters to return the Shilha words to their correct state. Note that, in order to achieve the correct Shilha words, you do not need to rearrange any letters. Instead, you just have to delete zero or more letters from each line, and if you choose the correct letters to delete, the letters that are left over will be in the correct order to spell the correct Shilha words.

[1] The word defined here as "mountain (feminine)" would typically be used to mean "small mountain" rather than "female mountain," but for consistency we have used the definition "mountain (feminine)."

n a c l o

(G) By the Same Token (3/3)

Once you have figured it out, write the Shilha translations of the following English phrases on your answer sheet:

(l) female pigeon
(m) male pigeon
(n) cow (female bovine)
(o) mountain (masculine)
(p) mountains (feminine)
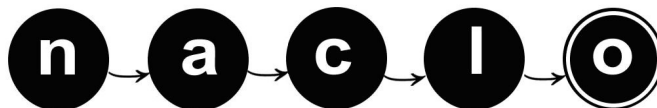
(H) N'ko, M'kay (1/3) [15 points]

The N'ko script was invented (or rediscovered, depending on sources) by Guinean Soulemayne Kanté in 1949. Today, N'ko is still used to write Maninka, as well as Dyula and Bambaré, which are all languages from the Mande language family spoken across a range of West African nations: Burkina Faso, Gambia, Ghana, Guinea, Ivory Coast, Liberia, Mali, Senegal, and Sierra Leone. These are all tone languages (ie, using pitch to determine the meaning of words), but the tones (which are usually indicated by diacritics) have been omitted in this problem, to make it simpler. 'ɔ' is a vowel pronounced like the 'o' in 'hot'.

The name of the script in N'ko, which means 'I speak', is ߒߞߏ , and its inventor's name is ߞߊ߲ߕߍ .

Below are 12 regional names given in transcription on the left and on the right are the corresponding names in N'ko but in a jumbled-up order. The information given under "Description" is just for your interest: it does not relate to the solution.

	Name in transcription	Description
1.	Kɔnakiri	Conakry – capital of Guinea
2.	Kindia	town in Guinea
3.	N'sérégbédé	city in Guinea
4.	Soromaya	town in Guinea
5.	Faranna	city in Guinea
6.	Djigoué	town in Burkina Faso
7.	Tomboutou	Timbuktu – city in Mali
8.	Bisawo	Bissau – capital of Guinea-Bissau[1]
9.	Abidjan	city in Côte d'Ivoire
10.	M'praeso	town in Ghana
11.	Gbésoba	town in Guinea
12.	Guekedou	city in Guinea

	Name in N'ko
A.	ߒߡߍߞߙߊ
B.	ߘߊߡߍߟߍ
C.	ߞߌߖ߭ߕߎ
D.	ߞߍߡߎߙߊ
E.	ߡߍߟߌߘߋ
F.	ߞߌߥߍ
G.	ߘߡߍߟߕߊߞ
H.	ߞߙߊߦߍߦߎ
I.	ߛߛߡߍߞ
J.	ߛߊߔߍߕ
K.	ߞߊߡߍߦߡߍ
L.	ߛߍߦߊߞ

Answer the following questions in the Answer Sheets:

H1. Match up the names 1-12 with their N'ko equivalents A-L.

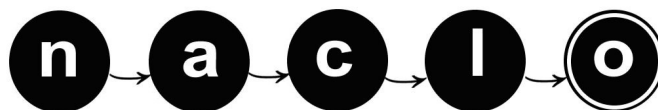1. Note that Guinea-Bissau and Guinea are two different countries.

n → a → c → l → o

(H) N'ko, M'kay (2/3)

H2. Write in N'ko script the following names:

	Name in transcription	Description
a.	Kodo Wari	the country Côte d'Ivoire
b.	Liberia	the country Liberia
c.	Mamoun	city in Guinea
d.	Firitɔn	Freetown, capital of Sierra Leone
e.	Netaro	town in Guinea
f.	M'bour	city in Senegal
g.	N'djala	town in Sierra Leone
h.	Gberia Fotombou	town in Sierra Leone

H3. Write the following names in transliteration (or in their conventional English spelling):

	Name in N'ko	Helpful (?) hint
a.	ꕪꛟꕟ	name of a language
b.	ꕘꕎꕯ	name of a country
c.	ꕰꕜꕊꕎꕯ	name of a country
d.	ꕀꕞꕮꛞꛟꛟ	name of a town in Congo
e.	ꕘꕜꛞꕚꛞꕞ	name of a language
f.	ꕰꕔꕎ ꕘꕑ	name of a country
g.	ꕀꕞꕉꕚꕜ	name of a language
h.	ꕯꕉꕞꕎꕞ	name of a river and a country
i.	ꕀꕚꕜꛚꕎꕯ ꕪꕞꕰ	name of a country
j.	ꕎꕉꕞꕮ	name of a country

n → a → c → l → o

Map of West Africa

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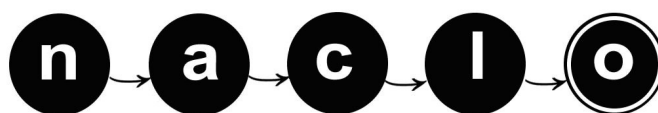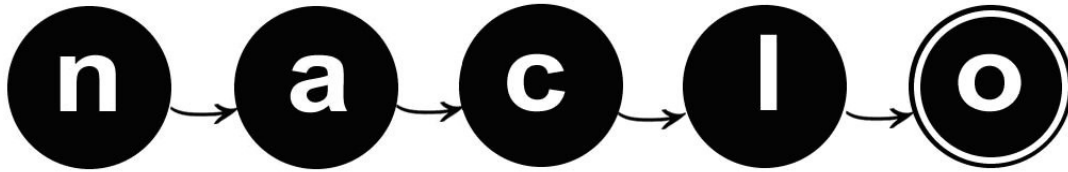
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REGISTRATION NUMBER			

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SIGN YOUR NAME BELOW TO CONFIRM THAT YOU WILL NOT DISCUSS THESE PROBLEMS WITH ANYONE UNTIL THEY HAVE BEEN OFFICIALLY POSTED ON THE NACLO WEBSITE IN APRIL.

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Answer Sheet (1/6)

Please input only one character per box, where relevant.

(A) At Ease in Gilbertese

1.   a.   i. Gilbertese sentence

ii. English sentence

ii. English sentence

b.   i. Gilbertese sentence

ii. English sentence

c.   i. Gilbertese sentence

ii. English sentence

2.   a.

Answer Sheet (2/6)

(A) At Ease in Gilbertese (continued)

2.   b.

(B) The Pame Game

1.   a.   nuji =

karnuʔ tenhiuɲ teriuhiŋ =

b.   1   =

3   =

9   =

56   =

60   =

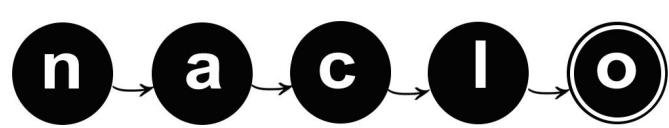**(C) All Roads Lead to Tirana**

1.

1.   2.   3.   4.   5.   6.   7.

8.   9.   10.   11.   12.   13.   14.

2.

n → a → c → l → o

Answer Sheet (3/6)

(C) All Roads Lead to Tirana (continued)

3.   Drita: ☐☐☐   Kustrim: ☐☐☐   Lindita: ☐☐☐

       Sokol: ☐☐☐   Valon: ☐☐☐

(D) Intergalactic Grammars

1.   a.

     b.

2.   a.

     b.

     c.

     d.

3.   a.

     b.

     c.

Answer Sheet (4/6)

(E) Parties in Palauan

1.   a. _____

     b. _____

     c. _____

     d. _____

2.   a. [ ]
        [ ]

     b. [ ]
        [ ]

     c. [ ]
        [ ]

     d. [ ]

     e. [ ]

3.   a. [ ][ ][ ][ ][ ]   b. [ ][ ][ ][ ][ ]   c. [ ][ ][ ][ ][ ]

(F) A Match Made in Vietnam

1.   1. [ ]   2. [ ]   3. [ ]   4. [ ]   5. [ ]   6. [ ]   7. [ ]   8. [ ]

     9. [ ]   10. [ ]   11. [ ]   12. [ ]   13. [ ]   14. [ ]   15. [ ]   16. [ ]

     17. [ ]   18. [ ]   19. [ ]   20. [ ]   21. [ ]   22. [ ]   23. [ ]

2.   _____

Answer Sheet (5/6)

(G) By the Same Token

1.   a. ☐☐   b. ☐☐   c. ☐☐   d. ☐☐

      e. ☐☐☐☐☐☐☐☐☐☐☐☐☐   f. ☐☐

      g. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

      h. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

      i. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

      j. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

      k. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

2.   l. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

      m. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

      n. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

      o. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐
         ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

      p. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐
         ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

(H) N'ko, M'kay

1.   1. ☐   2. ☐   3. ☐   4. ☐   5. ☐   6. ☐

      7. ☐   8. ☐   9. ☐   10. ☐   11. ☐   12. ☐

naclo

Answer Sheet (6/6)

(H) N'ko, M'kay (continued)

2. a.
    b.
    c.
    d.
    e.
    f.
    g.
    h.

3. a.
    b.
    c.
    d.
    e.
    f.
    g.
    h.
    i.
    j.