

**Due:** October 31

**PROBLEM 1 – HUNGARIAN**

The verbal paradigm in Hungarian contains three moods (indicative, conditional and imperative), three tenses (past, present and future), two numbers and three persons. (Hungarian does not have gender.) Moreover, Hungarian verbs have two conjugations: the *indefinite* paradigm is used by intransitive verbs, as well as with transitive verbs taking an indefinite direct object, while the *definite* paradigm is used when a transitive verb takes a definite object. Finally, a special suffix denotes a Sg.1 subject being combined with a (singular or plural) 2<sup>nd</sup> person object. Refer to the paradigms on the next pages.

Your assignment is to create an analysis of the Hungarian verbal system, as complete as possible. Write up your analysis as a short essay: as a continuous prose of approx. 5 pages, including an argumentation referring to rules, illustrated by derivations, etc., and not simply as bullet points.

1. A full analysis of the Hungarian verbal system will
  - provide the underlying form of each affix,
  - provide the underlying forms of each verbal root that appears among the examples,
  - provide the rules necessary to derive all the forms of the paradigms, referring to features, and
  - provide representative examples of derivation, especially for the “complicated cases”, so that the reader must be able to reconstruct all other derivations by analogy.

You are invited to email to me to elicit further data. I am not going to help you solving the exam, but you may perform *wug*-tests (Hayes, p. 198) on me, asking “what would be form N of a verb like [xyz]”? Remember that nonce-probe studies only elicit (fully) productive processes.

2. However, a simple, full and correct analysis is not really feasible. You will encounter a number of problems, which you will have to tackle:
  - in the first part of your essay, present your analysis of the unproblematic cases, and only
  - subsequently identify the problems that you have encountered,
  - explain why they pose a problem, and
  - suggest (partial) solutions.

Hint 1: *allomorphs on the surface* may be the result of (a) a *single underlying form* + phonological rules, and (b) *several underlying allomorphs* encoded in the mental lexicon.

Hint 2: the mental lexicon is the host of all forms of arbitrariness. Beside the arbitrary form-meaning pairings, it can also host information on (seemingly) arbitrary grammatical behavior.

3. Reflect upon your (partial) analysis, for instance:
  - Does it follow the spirit of historical linguistics, structuralist linguistics or generative linguistics?
  - Is it adequate on an observational/descriptive/explanatory level?
  - Is it an “elegant” solution, or have you had to make use of *ad hoc* tricks?
  - Do you (personally) find it a convincing and / or plausible explanation?

'to want'						
<b>Indefinite</b>	<b>Present Indicative</b>	<b>Past Indicative</b>	<b>Future Indicative</b>	<b>Present Conditional</b>	<b>Past conditional</b>	<b>Present Imperative</b>
<i>Sg. 1.</i>	okorok	okortom	okorni fogok	okorne:k	okortom volno	okorjok
<i>Sg. 2.</i>	okors	okorta:l	okorni foks	okorna:l	okorta:l volno	okorja:l
<i>Sg. 3.</i>	okor	okort	okorni fog	okorno	okort volno	okorjon
<i>Pl. 1.</i>	okorunk	okortunk	okorni fogunk	okorna:nk	okortunk volno	okorjunk
<i>Pl. 2.</i>	okortok	okortotok	okorni foktok	okorna:tok	okortotok volno	okorjotok
<i>Pl. 3.</i>	okornok	okortok	okorni fognok	okorna:nok	okortok volno	okorjonok

**Definite**

<i>Sg. 1.</i>	okorom	okortom	okorni fogom	okorna:m	okortom volno	okorjom
<i>Sg. 2.</i>	okorod	okortod	okorni fogod	okorna:d	okortod volno	okorjod
<i>Sg. 3.</i>	okorjo	okorto	okorni fogjo	okorna:	okorto volno	okorjo
<i>Pl. 1.</i>	okorjuk	okortuk	okorni fogjuk	okorna:nk	okortuk volno	okorjuk
<i>Pl. 2.</i>	okorja:tok	okorta:tok	okorni fogja:tok	okorna:tok	okorta:tok volno	okorja:tok
<i>Pl. 3.</i>	okorja:k	okorta:k	okorni fogja:k	okorna:k	okorta:k volno	okorja:k
<i>S1+2<sup>nd</sup> obj</i>	okorlok	okortlok	okorni foglok	okorna:lok	okortlok volno	okorjlok

'to ask'

<b>Indefinite</b>	<b>Present Ind.</b>	<b>Past Ind.</b>	<b>Future Ind.</b>	<b>Present Cond.</b>	<b>Past Cond.</b>	<b>Imperative</b>
<i>Sg. 1.</i>	ke:rɛk	ke:rtɛm	ke:rni fogok	ke:rne:k	ke:rtɛm volno	ke:rjɛk
<i>Sg. 2.</i>	ke:rs	ke:rte:l	ke:rni foks	ke:rne:l	ke:rte:l volno	ke:rje:l
<i>Sg. 3.</i>	ke:r	ke:rt	ke:rni fog	ke:rne	ke:rt volno	ke:rjɛn
<i>Pl. 1.</i>	ke:rynk	ke:rtynk	ke:rni fogunk	ke:rne:nk	ke:rtynk volno	ke:rjynk
<i>Pl. 2.</i>	ke:rtɛk	ke:rtɛtɛk	ke:rni foktok	ke:rne:tɛk	ke:rtɛtɛk volno	ke:rjɛtɛk
<i>Pl. 3.</i>	ke:rɛk	ke:rtɛk	ke:rni fognok	ke:rne:nɛk	ke:rtɛk volno	ke:rjɛnɛk

**Definite**

<i>Sg. 1.</i>	ke:rɛm	ke:rtɛm	ke:rni fogom	ke:rne:m	ke:rtɛm volno	ke:rjɛm
<i>Sg. 2.</i>	ke:rɛd	ke:rtɛd	ke:rni fogod	ke:rne:d	ke:rtɛd volno	ke:rjɛd
<i>Sg. 3.</i>	ke:ri	ke:rte	ke:rni fogjo	ke:rne:	ke:rte volno	ke:rje
<i>Pl. 1.</i>	ke:rjuk	ke:rtyk	ke:rni fogjuk	ke:rne:nk	ke:rtyk volno	ke:rjuk
<i>Pl. 2.</i>	ke:ritɛk	ke:rte:tɛk	ke:rni fogja:tok	ke:rne:tɛk	ke:rte:tɛk volno	ke:rje:tɛk
<i>Pl. 3.</i>	ke:rik	ke:rte:k	ke:rni fogja:k	ke:rne:k	ke:rte:k volno	ke:rje:k
<i>S1+2<sup>nd</sup> obj</i>	ke:rlek	ke:rtelek	ke:rni foglok	ke:rne:lek	ke:rtelek volno	ke:rjelek

'to hold' (conjugated similarly to the verb *akarni* 'to want')

Present: fogok, foks, fog, fogunk, foktok, fognok; fogom, fogod, fogjo, fogjuk, fogja:tok, fogja:k

Past: fogtom, fogta:l, fogott, fogtunk, fogtotok, fogtok; fogtom, fogtod, fogto, fogtuk, fogta:tok, fogta:k

Condit: fogne:k, fogna:l, fognb...; fogna:m, fogna:d, fogna:... Imperative: fogjom, fogja:l...

'to read'

	<b>Indefinite</b>	<b>Present Ind</b>	<b>Past Ind.</b>	<b>Future Ind.</b>	<b>Pres. Cond.</b>	<b>Past conditional</b>	<b>Imperative</b>
<i>Sg. 1.</i>		olvøfok	olvøftom	olvøfni fogok	olvøfne:k	olvøftom volno	olvøffok
<i>Sg. 2.</i>		olvøfol	olvøfta:l	olvøfni foks	olvøfna:l	olvøfta:l volno	olvøffa:l
<i>Sg. 3.</i>		olvøf	olvøfott	olvøfni fog	olvøfno	olvøfott volno	olvøffon
<i>Pl. 1.</i>		olvøfunk	olvøftunk	olvøfni fogunk	olvøfna:nk	olvøftunk volno	olvøffunk
<i>Pl. 2.</i>		olvøftok	olvøftotok	olvøfni foktok	olvøfna:tok	olvøftotok volno	olvøffotok
<i>Pl. 3.</i>		olvøfnok	olvøftok	olvøfni fognok	olvøfna:nok	olvøftok volno	olvøffonok

**Definite**

<i>Sg. 1.</i>	olvøfom	olvøftom	olvøfni fogom	olvøfna:m	olvøftom volno	olvøffom
<i>Sg. 2.</i>	olvøfod	olvøftod	olvøfni fogod	olvøfna:d	olvøftod volno	olvøffod
<i>Sg. 3.</i>	olvøffo	olvøfto	olvøfni fogjo	olvøfna:	olvøfto volno	olvøffo
<i>Pl. 1.</i>	olvøffuk	olvøftuk	olvøfni fogjuk	olvøfna:nk	olvøftuk volno	olvøffuk
<i>Pl. 2.</i>	olvøffa:tok	olvøfta:tok	olvøfni fogja:tok	olvøfna:tok	olvøfta:tok volno	olvøffa:tok
<i>Pl. 3.</i>	olvøffa:k	olvøfta:k	olvøfni fogja:k	olvøfna:k	olvøfta:k volno	olvøffa:k
<i>S1+2<sup>nd</sup> obj</i>	olvøfløk	olvøftoløk	olvøfni fogløk	olvøfna:løk	olvøftoløk volno	olvøffoløk

'to effuse, throw'

	<b>Indefinite</b>				<b>Definite</b>			
	<b>Present</b>	<b>Past</b>	<b>Condit.</b>	<b>Impert.</b>	<b>Present</b>	<b>Past</b>	<b>Condit.</b>	<b>Impert.</b>
<i>Sg. 1.</i>	ontok	ontottom	ontone:k	ontfok	ontom	ontottom	ontona:m	ontfom
<i>Sg. 2.</i>	ontos	ontotta:l	ontona:l	ontfa:l	ontod	ontottod	ontona:d	ontfod
<i>Sg. 3.</i>	ont	ontott	ontono	ontfon	onco	ontotto	ontona:	ontfo
<i>Pl. 1.</i>	ontunk	ontottunk	ontona:nk	ontfunk	oncuk	ontottuk	ontona:nk	ontfuk
<i>Pl. 2.</i>	ontotok	ontottotok	ontona:tok	ontfotok	onca:tok	ontotta:tok	ontona:tok	ontfa:tok
<i>Pl. 3.</i>	ontonok	ontottok	ontona:nok	ontfonok	onca:k	ontotta:k	ontona:k	ontfa:k

NB: Substandard language has [ontfo], [ontfuk], etc. instead of [onco], [oncuk], etc. (Why?)

'to pour'

	<b>Indefinite</b>				<b>Definite</b>			
	<b>Present</b>	<b>Past</b>	<b>Condit.</b>	<b>Impert.</b>	<b>Present</b>	<b>Past</b>	<b>Condit.</b>	<b>Impert.</b>
<i>Sg. 1.</i>	øntøk	øntøttem	øntene:k	øntfek	øntøm	øntøttem	øntene:m	øntfem
<i>Sg. 2.</i>	øntes	øntøtte:l	øntene:l	øntfe:l	øntød	øntøtted	øntene:d	øntfed
<i>Sg. 3.</i>	ønt	øntøtt	øntene	øntføn	ønti	øntøtte	øntene:	øntfē
<i>Pl. 1.</i>	øntyнк	øntøtтынк	øntene:nk	øntfyнк	øncyк	øntøtтык	øntene:nk	øntfyк
<i>Pl. 2.</i>	øntøtøk	øntøttetek	øntene:tek	øntfetek	øntiitek	øntøtte:tek	øntene:tek	øntfe:tek
<i>Pl. 3.</i>	øntensk	øntøttek	øntene:nek	øntfenek	øntik	øntøtte:k	øntene:k	øntfe:k

NB: Substandard language has [øntfē], [øntfyк], etc. instead of [ønti], [øncyк], etc. (Why?)

	'to save' Indefinite				Definite			
	Present	Past	Condit.	Impert.	Present	Past	Condit.	Impert.
<i>Sg. 1.</i>	mɛntɛk	mɛntɛttɛm	mɛntɛnɛ:k	mɛntʃɛk	mɛntɛm	mɛntɛttɛm	mɛntɛnɛ:m	mɛntʃɛm
<i>Sg. 2.</i>	mɛntɛs	mɛntɛttɛ:l	mɛntɛnɛ:l	mɛntʃɛ:l	mɛntɛd	mɛntɛttɛd	mɛntɛnɛ:d	mɛntʃɛd
<i>Sg. 3.</i>	mɛnt	mɛntɛtt	mɛntɛnɛ	mɛntʃɛn	mɛnti	mɛntɛttɛ	mɛntɛnɛ:	mɛntʃɛ
<i>Pl. 1.</i>	mɛntyɲk	mɛntɛttɲk	mɛntɛnɛ:nk	mɛntʃɲk	mɛncyk	mɛntɛttɲk	mɛntɛnɛ:nk	mɛntʃɲk
<i>Pl. 2.</i>	mɛntɛtɛk	mɛntɛttɛtɛk	mɛntɛnɛ:tɛk	mɛntʃɛtɛk	mɛntitɛk	mɛntɛttɛ:tɛk	mɛntɛnɛ:tɛk	mɛntʃɛ:tɛk
<i>Pl. 3.</i>	mɛntɛnɛk	mɛntɛttɛk	mɛntɛnɛ:nɛk	mɛntʃɛnɛk	mɛntik	mɛntɛttɛ:k	mɛntɛnɛ:k	mɛntʃɛ:k

NB: Substandard language has [mɛntʃɛ], [mɛntʃɲk], etc. instead [mɛnti], [mɛncyk], etc. (Why?)

	'to receive' Indefinite				Definite			
	Present	Past	Condit.	Impert.	Present	Past	Condit.	Impert.
<i>Sg. 1.</i>	kɔpɔk	kɔptɔm	kɔpnɛ:k	kɔpjɔk	kɔpɔm	kɔptɔm	kɔpnɛ:m	kɔpjɔm
<i>Sg. 2.</i>	kɔps	kɔpta:l	kɔpnɛ:l	kɔpja:l	kɔpɔd	kɔptɔd	kɔpnɛ:d	kɔpjɔd
<i>Sg. 3.</i>	kɔp	kɔpɔtt	kɔpnɔ	kɔpjɔn	kɔpjɔ	kɔptɔ	kɔpnɛ:	kɔpjɔ
<i>Pl. 1.</i>	kɔpunk	kɔptunk	kɔpnɛ:nk	kɔpjunk	kɔpjuk	kɔptuk	kɔpnɛ:nk	kɔpjuk
<i>Pl. 2.</i>	kɔptɔk	kɔptɔtɔk	kɔpnɛ:tɔk	kɔpjɔtɔk	kɔpja:tɔk	kɔpta:tɔk	kɔpnɛ:tɔk	kɔpja:tɔk
<i>Pl. 3.</i>	kɔpnɔk	kɔptɔk	kɔpnɛ:nɔk	kɔpjɔnɔk	kɔpja:k	kɔpta:k	kɔpnɛ:k	kɔpja:k

	'to spit' Indefinite				Definite			
	Present	Past	Condit.	Impert.	Present	Past	Condit.	Impert.
<i>Sg. 1.</i>	kɔpɔk	kɔptɛm	kɔpnɛ:k	kɔpjɛk	kɔpɔm	kɔptɛm	kɔpnɛ:m	kɔpjɛm
<i>Sg. 2.</i>	kɔps	kɔpte:l	kɔpnɛ:l	kɔpje:l	kɔpɔd	kɔptɛd	kɔpnɛ:d	kɔpjɛd
<i>Sg. 3.</i>	kɔp	kɔpɔtt	kɔpnɛ	kɔpjɔn	kɔpi	kɔpte	kɔpnɛ:	kɔpje
<i>Pl. 1.</i>	kɔpyɲk	kɔptyɲk	kɔpnɛ:nk	kɔpjyɲk	kɔpyɲk	kɔptyɲk	kɔpnɛ:nk	kɔpyɲk
<i>Pl. 2.</i>	kɔptɔk	kɔptɛtɛk	kɔpnɛ:tɛk	kɔpjɛtɛk	kɔpitɛk	kɔpte:tɛk	kɔpnɛ:tɛk	kɔpje:tɛk
<i>Pl. 3.</i>	kɔpnɛk	kɔptɛk	kɔpnɛ:nɛk	kɔpjɛnɛk	kɔpik	kɔpte:k	kɔpnɛ:k	kɔpje:k

	'to see' Indefinite				Definite			
	Present	Past	Condit.	Impert.	Present	Past	Condit.	Impert.
<i>Sg. 1.</i>	la:tɔk	la:ttɔm	la:tne:k	la:ʃʃɔk	la:tɔm	la:ttɔm	la:tna:m	la:ʃʃɔm
<i>Sg. 2.</i>	la:ts	la:tta:l	la:tna:l	la:ʃʃa:l	la:tɔd	la:ttɔd	la:tna:d	la:ʃʃɔd
<i>Sg. 3.</i>	la:t	la:tott	la:tɲɔ	la:ʃʃɔn	la:cɔ	la:tto	la:tna:	la:ʃʃɔ
<i>Pl. 1.</i>	la:tɲk	la:ttɲk	la:tna:nk	la:ʃʃɲk	la:cɲk	la:ttɲk	la:tna:nk	la:ʃʃɲk
<i>Pl. 2.</i>	la:ttɔk	la:ttɔtɔk	la:tna:tɔk	la:ʃʃɔtɔk	la:ca:tɔk	la:tta:tɔk	la:tna:tɔk	la:ʃʃa:tɔk
<i>Pl. 3.</i>	la:tɲɔk	la:ttɔk	la:tna:nɔk	la:ʃʃɔnɔk	la:ca:k	la:tta:k	la:tna:k	la:ʃʃa:k

NB: Observe that substandard language has [la:ʃʃɔ], [la:ʃʃɲk], etc. instead [la:cɔ], [la:cɲk], etc. (Why?)

'to look'	Indefinite				Definite			
	Present	Past	Condit.	Impert.	Present	Past	Condit.	Impert.
<i>Sg. 1.</i>	ne:zɛk	ne:ztɛm	ne:zne:k	ne:zzɛk	ne:zɛm	ne:ztɛm	ne:zne:m	ne:zzɛm
<i>Sg. 2.</i>	ne:zɛl	ne:zte:l	ne:zne:l	ne:zze:l	ne:zɛd	ne:zte:d	ne:zne:d	ne:zzɛd
<i>Sg. 3.</i>	ne:z	ne:zett	ne:znɛ	ne:zzɛn	ne:zi	ne:zte	ne:zne:	ne:zzɛ
<i>Pl. 1.</i>	ne:zynk	ne:ztynk	ne:zne:nk	ne:zzynk	ne:zyk	ne:ztyk	ne:zne:nk	ne:zyk
<i>Pl. 2.</i>	ne:ztek	ne:ztɛtek	ne:zne:tɛk	ne:zzɛtek	ne:zitek	ne:zte:tɛk	ne:zne:tɛk	ne:zzɛ:tɛk
<i>Pl. 3.</i>	ne:znɛk	ne:ztek	ne:zne:nɛk	ne:zzɛnɛk	ne:zik	ne:zte:k	ne:zne:nɛk	ne:zzɛ:k

'to write'	Indefinite				Definite			
	Present	Past	Condit.	Impert.	Present	Past	Condit.	Impert.
<i>Sg. 1.</i>	i:rok	i:rtom	i:rne:k	i:rjɔk	i:rom	i:rtom	i:rna:m	i:rjom
<i>Sg. 2.</i>	i:rs	i:rta:l	i:rna:l	i:rja:l	i:rod	i:rtod	i:rna:d	i:rjod
<i>Sg. 3.</i>	i:r	i:rt	i:rno	i:rjon	i:rjo	i:rto	i:rna:	i:rjo
<i>Pl. 1.</i>	i:runk	i:rtunk	i:rna:nk	i:rjunk	i:rjuk	i:rtuk	i:rna:nk	i:rjuk
<i>Pl. 2.</i>	i:rtok	i:rtotok	i:rna:tok	i:rjotok	i:rja:tok	i:rta:tok	i:rna:tok	i:rja:tok
<i>Pl. 3.</i>	i:rnɔk	i:rtok	i:rna:nɔk	i:rjonɔk	i:rja:k	i:rta:k	i:rna:k	i:rja:k

'to believe'	Indefinite				Definite			
	Present	Past	Condit.	Impert.	Present	Past	Condit.	Impert.
<i>Sg. 1.</i>	hisɛk	hittɛm	hinne:k	hiyyɛk	hisɛm	hittɛm	hinne:m	hiyyɛm
<i>Sg. 2.</i>	hisɛl	hitte:l	hinne:l	hiyye:l	hisɛd	hitted	hinne:d	hiyyɛd
<i>Sg. 3.</i>	his	hitt	hinne	hiyyɛn	hisi	hitte	hinne:	hiyyɛ
<i>Pl. 1.</i>	hisynk	hittynk	hinne:nk	hiyyynk	hissyk	hittyk	hinne:nk	hiyyyk
<i>Pl. 2.</i>	histɛk	hittɛtek	hinne:tɛk	hiyyɛtek	hisitek	hitte:tɛk	hinne:tɛk	hiyyɛ:tɛk
<i>Pl. 3.</i>	hisnɛk	hittɛk	hinne:nɛk	hiyyɛnɛk	hisik	hitte:k	hinne:nɛk	hiyyɛ:k

A final remark: following “textbook convention”, you can safely suppose that the earlier data represent the general pattern, and are just a few examples out of many, whereas the latter data are exceptions.

## PROBLEM 2 – SOMALI

(This assignment was compiled by *Gaja Jarosz.*) Your answer to this problem set needs not be an essay, but do include some explanatory prose next to your answers (a list of allomorphs, a list of rules, etc.).

## PROBLEM 2 – SOMALI

The following data from Somali (Afro-Asiatic, Somalia) illustrates the activity of four processes.

	<i>singular</i>	<i>singular definite</i>	<i>plural</i>	<i>gloss</i>
1)	[da:r]	[da:ɾta]	[da:ro]	‘house’
2)	[ge:s]	[ge:sta]	[ge:so]	‘side’
3)	[lug]	[lugta]	[luɣo]	‘leg’
4)	[na:g]	[na:gta]	[na:ɣo]	‘woman’
5)	[tib]	[tibta]	[tiβo]	‘pestle’
6)	[sab]	[sabta]	[saβo]	‘outcast’
7)	[bad]	[bada]	[baðo]	‘sea’
8)	[ʃid]	[ʃida]	[ʃiðo]	‘person’
9)	[fe:d]	[fe:dɑ]	[fe:zo]	‘rib’
10)	[ul]	[ulta]	[ulo]	‘stick’
11)	[bil]	[bilta]	[bilo]	‘month’
12)	[la:n]	[la:nta]	[la:mo]	‘branch’
13)	[da:m]	[da:nta]	[da:mo]	‘riverbank’
14)	[sun]	[sunta]	[sumo]	‘poison’
15)	[dan]	[danta]	[dano]	‘affair’
16)	[sa:n]	[sa:nta]	[sa:no]	‘hide’
17)	[sin]	[sinta]	[simo]	‘hip’
18)	[nirig]	[nirigta]	[nirgo]	‘baby female camel’
19)	[qaβad]	[qaβada]	[qabɔo]	‘girl’
20)	[qaʃan]	[qaʃanta]	[qaʃmo]	‘arm’
21)	[hoyol]	[hoyolta]	[hoglo]	‘downpour’
22)	[baɣal]	[baɣalta]	[baɣlo]	‘mule’
23)	[wafar]	[wafarta]	[wafaro]	‘female kid’
24)	[kefed]	[kefeda]	[kefeðo]	‘pan’
25)	[ʃilin]	[ʃilinta]	[ʃilino]	‘female dwarf’
26)	[bohol]	[boholta]	[boholo]	‘hole’

The four processes are illustrated by the following examples:

- Process A is illustrated by stem alternations in the forms in (3)
- Process B is illustrated by stem alternations in the forms in (17)
- Process C is illustrated by stem alternations in the forms in (18)
- Process D is illustrated by the affix alternations in the singular definite

Present your analysis of these alternations. Your analysis should include the following:

- The underlying representations and set of allomorphs of all 29 morphemes in the data
- For each of A-D, a statement describing the alternation and its contexts
- A formal definition of each rule A-D written using distinctive features
  - Remember to write your rules as simply and generally as possible.
- Present the required rule orderings. Which rules must precede other rules? Support your rule ordering claims with reference to specific examples, explaining what would happen if the rule order were the reverse. Which rule orderings don’t matter? That is, what are the other possible rule orders that will also work, if any.
- For each of the crucial rule orderings, identify the rule interaction (feeding, bleeding, counterfeeding, counterbleeding) between the two rules.

- Present derivations of all forms in (6), (7), (12), (13), (19), (20), (23), (24)
  - If your rules depend on syllabification, clearly indicate where the syllable boundaries are *before* the rules apply. Use ‘.’ to mark syllable boundaries, e.g. [gɑ.ʃɑn.tɑ]. You may do this by assuming a ‘Syllabification’ rule that applies one or more times in the course of the derivation.

Hints:

- It is possible to write rules with or without referring to syllables.
- Some of the forms may look like exceptions to your rules/generalizations but are actually perfectly in line with the rules if the rules apply in the right order.
- Process C looks like either vowel insertion or deletion, but one of these choices is much better. Notice that the vowel that alternates with zero is always identical to the vowel that precedes it in the word. This fact is critical for making the choice between insertion and deletion and writing a rule as simply as possible.