Homework 6: Distinctive features and beginning phonology
Due Tuesday, March 1

(1)   List the *distinctive* features necessary to distinguish the vowels in the following systems. (You do not need to give the +/- values of each for each vowel, just the features that contrast, i.e. the minimum necessary to distinguish all vowels.)

    a.   Japanese: [i, ɯ, e, o, ɑ]
    b.   Russian: [i, ɨ, u, e, ə, o, ɑ]
    c.   French: [i, y, u, e, ø, ɛ, œ, o, ɔ, æ, ɑ]

(2)   The following examples illustrate alternations in Turkish suffixes after each of the vowel phonemes of Turkish.

		nom. sg.	gen. sg.	nom. pl.	gen pl.
1.	'rope'	ip	ipin	ipler	iplerin
2.	'girl'	kɨz	kɨzɨn	kɨzlar	kɨzlarɨn
3.	'face'	jyz	jyzyn	jyzler	jyzlerin
4.	'stamp'	pul	pulun	pullar	pullarɨn
5.	'hand'	el	elin	eller	ellerin
6.	'bell'	ʧan	ʧanɨn	ʧanlar	ʧanlarɨn
7.	'village'	køj	køjyn	køjler	køjlerin
8.	'end'	son	sonun	sonlar	sonlarɨn

How can the variations of suffixes be captured?

Hints: You might make a list of the vowel phonemes in Turkish and give a distinctive feature characterization of each for [high], [back] and [round]. (Note that [a] denotes a low back unrounded vowel.) Identify all the allomorphs of both suffixes. If it is not possible to determine the underlying form you can represent a segment with its known underlying features (i.e. rather than with all the features needed to pick out one particular sound), with appropriate explanation and commentary. Work toward a statement (in words) and formalization (using features) of the rules that determine the quality of suffix vowels in Turkish. You should be able to account for all the forms with two rules. Finally, you may assume a rule can be relativized to a particular morpheme (so that it will only apply to/affect such a vowel in the specified morpheme).

As always, you should write up your final analysis as a presentation of the problem, the solution, and the formalism.