PLOTTING YOUR VOWELS AND READING SPECTROGRAMS

I. PLOTTING YOUR VOWELS

1. (10 points). Using the blank chart below (Ladefoged, CIP, Figure 8.10) and the data you collected in the lab, plot your vowels on the chart. For each vowel, plot the value for F1 against the vertical axis and the value for F2 against the horizontal axis. For each point of intersection, label it with the IPA symbol for the vowel located at that point.

After plotting your vowels on the chart above, please answer the related questions on the following pages.
2. (20 points). Does your vowel space look like you expect it to compared to the vowel space charts we’ve seen in class and in the textbooks? Explain in detail why or why not.

For example, you might say “my vowels are pretty consistent with the values we've discussed in class; for instance…” OR “my vowels don't look anything like the values plotted on charts from the book; for instance...”. If any of your vowels look especially odd in terms of their placement, be sure to explain that as well.

3. (5 points). F3 should be similar for most vowels, but not all. For which vowels is F3 noticeably different than for the rest?
4. (10 points). Look at the spectrograms you created in the lab for “bayed” and “bode” (remember that the vowels /æ/ and /ou/ in English are usually somewhat diphthongal). Do the formants in your production of these vowels change more over time than in other vowels? If so, how?

(WARNING: most of the vowels will change toward the end of the word because of the transition into the final consonant; this is not what you’re looking for.)

5. (5 points). Are /ʌ/ and /ɔ:/ well separated in the vowel space on your chart? What besides F1 and F2 might allow the listener to distinguish these two vowels?

6. (5 points). Are the rest of your vowels well separated from each other in the vowel space? Are there any that are located very close to each other?
II. SPECTROGRAMS

7. (10 points). Please complete the following exercise from Ladefoged, CLP, p. 197.

The following spectrogram shows the phrase “Show me a spotted hyena.” Put a transcription above it, and show the segment boundaries. In places where there are no clear boundaries (as in the first part of “hyena”) draw dashed lines.
8. (25 points). Please complete the following exercise from Ladefoged, CIP, p. 198. You should approach it much like he describes in the text for Figure 8.18, - explain how you narrowed down which sound or sounds each segmented portion of the spectrogram could represent and state whatever conclusions you reach about what the words in the sentence are, given your analysis.

In the following spectrogram, the segments have been delimited, some with dashed lines as they do not have sharp boundaries. In each of the spaces above the spectrogram write a symbol for a sound that has the same manner of articulation as that segment. Those for the first segment have been filled in as examples. A few other segments that are particularly difficult to determine have also been filled in.

The spectrogram is an ordinary English sentence, containing no names, so obviously the third possibility shown for the first segment could not be correct, as no English sentence could begin with [ŋ]. Bearing in mind what sequences of sounds are possible in English, write as many words or syllables as you can. This is a true statement.

It's okay if you don't get the whole phrase; just make educated guesses that at least narrow in on what the possible sounds are. We're not looking for the right answer so much as your ability to reason through what sounds might be represented in the spectrogram.

You may find it useful to number each segmented area (like Ladefoged does in the text), so you can easily refer to those points in your written discussion, which you'll need to attach on a separate piece (or pieces) of paper when you turn in your homework.