Problem Set 1 Description

GCCIS:

1	[dʒ]	The white space at the beginning shows voiced alveolar plosive (d sound) and also there is no pitch indicating the voiced alveolar fricative nature (ʒ sound). And if we plot F1 and F2 formants it will fall in central and close mid showing the alveolar pattern.
2	i	The F1 and F2 formants are far apart, with F1 very low and F2 very high.
3	s	The high diffuse aperiodic energy indicates an alveolar fricative, no pitch track indicates voicelessness. And the average frequency is high in spectogram showing the s nature compared to other fricatives like (f, ʃ, θ)
4	I	From the spectrogram it is clearly visible the F1 and F2 formants are far apart but not like i.
5	s	The high diffuse aperiodic energy indicates an alveolar

		fricative, no pitch track indicates voicelessness. And the average frequency is high in spectrogram showing the s nature compared to other fricatives like (f, ʃ, θ)

COLA:

Problem Set 1 Description

1	k^h	The aspirated k sound is clearly visible from the spectrogram. The whiter regions with the few black patches indicating the sound are not vibrating. The random alignment of formants shows the unrestricted turbulent flow of air.
2	o	The F1 and F2 are closer denoting the vowel o.
3	ʊ	The shorter uh sound denotes the vowel ʊ and which is closely resembling the o and the longer version of the u sound as well. Similar to o, F1, and F2 are closer in the spectrogram for this as well.
4	l	The l sound is clearly visible from the spectrogram. The alveolar lateral approximant is produced by blowing air on the sides of the tongue, folding the tongue in the middle simultaneously, and touching the teeth at the back. Due to this resonance is produced, which is clearly visible from F2 and F3 formants as they are attenuated and F1 and F4 are slightly stronger.

5	ə	This is a mid-central vowel voiced sound. It is pronounced like uh but in shorter version. F2 and F3 are getting closer and also F1 and F4 are getting wider and wider.