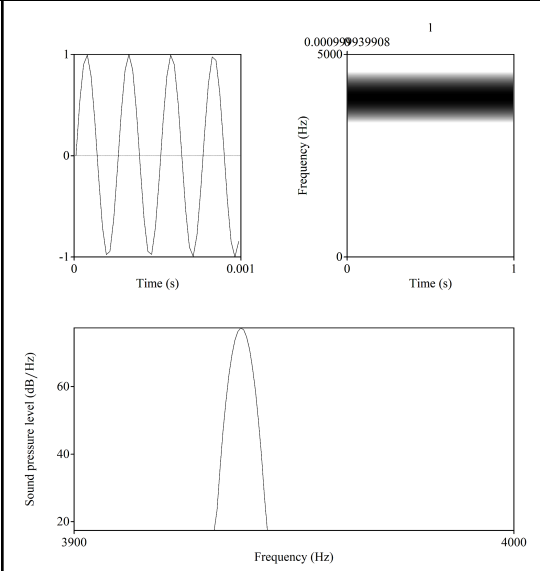
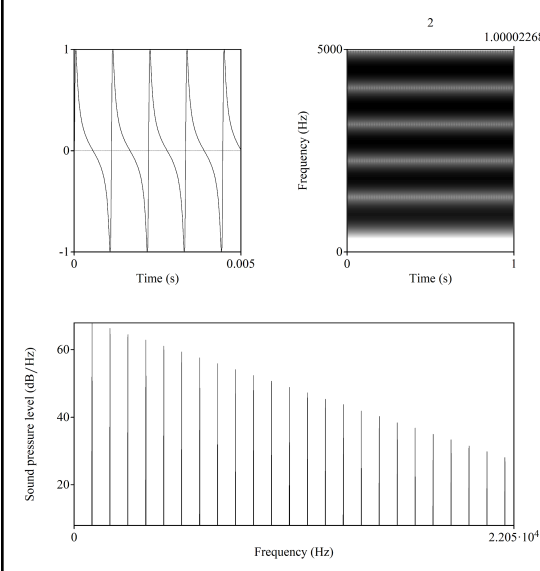
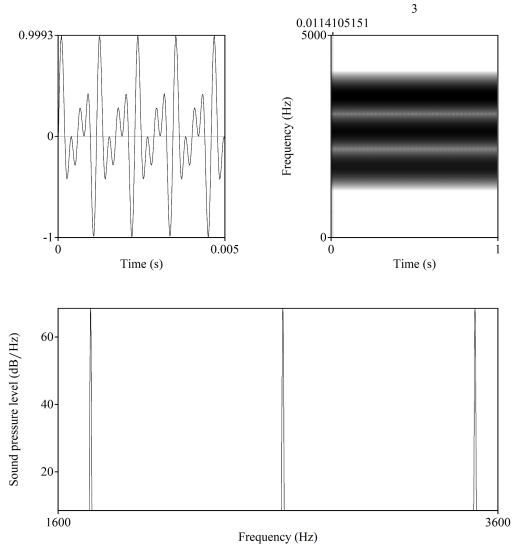
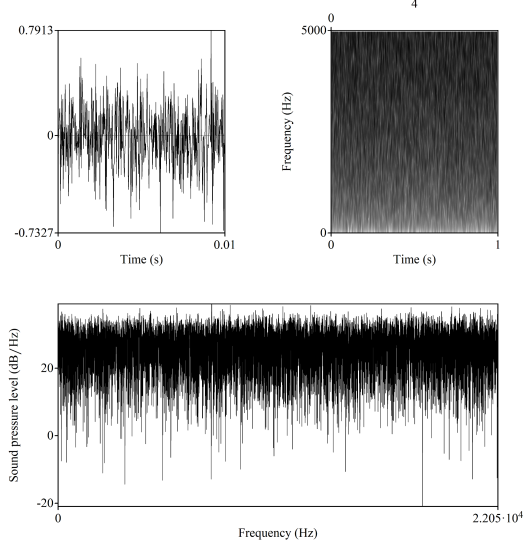
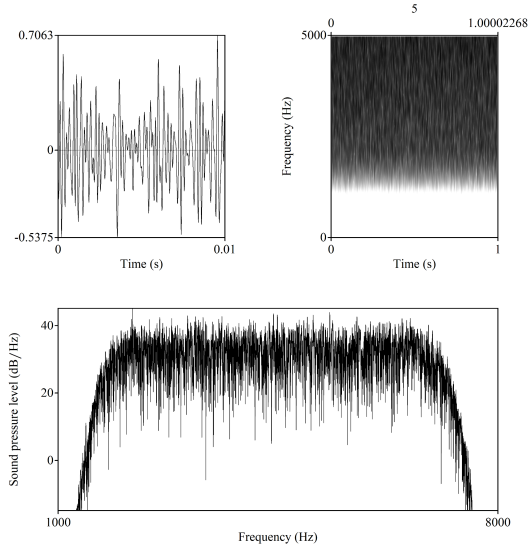
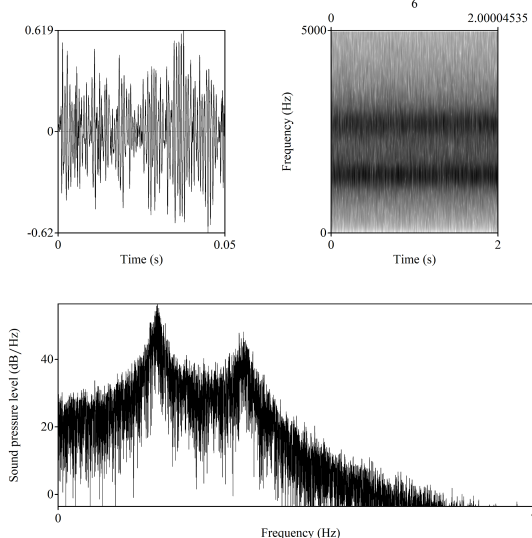


Sound	Explanation	Plot
1	<p>The sound is periodic, as zooming in on the waveform shows that it looks the same across multiple cycles. It is further simple, as the spectrum has a single peak and the spectrogram has a single band, and therefore a single frequency component. Seeing at what frequency the peak occurs shows that there is a single harmonic with a frequency of 3938 Hz. The fundamental frequency is then also 3938 Hz.</p>	 <p>The plots for Sound 1 consist of three subplots. The top-left plot is a zoomed-in waveform showing a single periodic cycle of a sine wave. The top-right plot is a spectrogram showing a single horizontal band of energy. The bottom plot is a spectrum plot showing a single sharp peak at 3938 Hz.</p>
2	<p>The sound is periodic, as zooming in on the waveform shows that it looks the same across multiple cycles. It is further complex, as the spectrum has multiple peaks and the spectrogram has multiple frequency bands, and therefore multiple frequency components. As there are 24 peaks on the spectrum, seeing at what frequencies the peaks occur show that there are 24 harmonics within the 22050 Hz sampling frequency with frequencies comprising every integer multiple of 900 Hz between 900 and 21600 Hz. The power decreases as the frequency increases, as higher-frequency harmonics have lower intensities. The fundamental frequency is 900 Hz, as it is the greatest common divisor of the harmonics.</p>	 <p>The plots for Sound 2 consist of three subplots. The top-left plot is a zoomed-in waveform showing a complex periodic signal. The top-right plot is a spectrogram showing multiple horizontal bands of energy. The bottom plot is a spectrum plot showing multiple peaks at integer multiples of 900 Hz, with the power decreasing as frequency increases.</p>

3	<p>The sound is periodic, as zooming in on the waveform shows that it looks the same across multiple cycles. It is further complex, as the spectrum has multiple peaks and the spectrogram has multiple bands, and therefore multiple frequency components. As there are 3 peaks on the spectrum, seeing at what frequencies the peaks occur show that there are 3 harmonics with frequencies of 1748, 2622, and 3496 Hz. The frequencies are equally-powered, as they have the same intensity. The fundamental frequency is 874 Hz, as it is the greatest common divisor of the harmonics.</p>	 <p>The figure for analysis 3 consists of three subplots. The top-left plot is a zoomed-in waveform showing a periodic signal over a time interval of 0 to 0.005 seconds, with amplitude values ranging from -1 to 0.9993. The top-right plot is a spectrogram showing frequency (0 to 5000 Hz) versus time (0 to 1 second), displaying three distinct horizontal bands of energy. The bottom plot is a spectrum showing sound pressure level (dB/Hz) versus frequency (1600 to 3600 Hz), with three sharp peaks at approximately 1748, 2622, and 3496 Hz.</p>
4	<p>The sound is aperiodic, as zooming in on the waveform shows that it does not seem to repeat at any fixed interval. It is further white noise, as the spectrum is roughly flat and the intensity remains stable.</p>	 <p>The figure for analysis 4 consists of three subplots. The top-left plot is a zoomed-in waveform showing a noisy, aperiodic signal over a time interval of 0 to 0.01 seconds, with amplitude values ranging from -0.7327 to 0.7913. The top-right plot is a spectrogram showing frequency (0 to 5000 Hz) versus time (0 to 1 second), displaying a flat, noisy floor across all frequencies. The bottom plot is a spectrum showing sound pressure level (dB/Hz) versus frequency (0 to $2.205 \cdot 10^4$ Hz), displaying a flat, noisy floor across the entire frequency range.</p>

5	<p>The sound is aperiodic, as zooming in on the waveform shows that it does not seem to repeat at any fixed interval. It is further band-limited noise, as the spectrum shows that only frequencies in a certain range have significant energy. The filter has a lower cutoff around 2000 Hz and upper cutoff around 7000 Hz, as those are the frequencies where the power is approximately halved (-3 dB) in comparison to that of the center frequency, 4500 Hz.</p>	 <p>The figure for sample 5 consists of three subplots. The top-left plot is a zoomed-in waveform showing aperiodic noise with an amplitude range from -0.5375 to 0.7063 over a time interval of 0 to 0.01 seconds. The top-right plot is a spectrogram showing frequency content from 0 to 5000 Hz over a time interval of 0 to 1 second, with a label '5' and a value '1.00002268'. The bottom plot is a magnitude spectrum showing sound pressure level (dB/Hz) from 0 to 40 across a frequency range from 1000 to 8000 Hz, exhibiting a broad band-limited noise profile.</p>
6	<p>The sound is aperiodic, as zooming in on the waveform shows that it does not seem to repeat at any fixed interval. It is further shaped noise, as the spectrum shows two peaks and the spectrogram has two bands that are darker than the other frequencies. The peaks are at around 1400 and 2700 Hz.</p>	 <p>The figure for sample 6 consists of three subplots. The top-left plot is a zoomed-in waveform showing aperiodic noise with an amplitude range from -0.62 to 0.619 over a time interval of 0 to 0.05 seconds. The top-right plot is a spectrogram showing frequency content from 0 to 5000 Hz over a time interval of 0 to 2 seconds, with a label '6' and a value '2.00004535'. The bottom plot is a magnitude spectrum showing sound pressure level (dB/Hz) from 0 to 40 across a frequency range from 0 to 7000 Hz, featuring two distinct peaks at approximately 1400 Hz and 2700 Hz.</p>

7

The sound is periodic, as zooming in on the waveform shows that it looks the same across multiple cycles. It is further complex, as the spectrum has multiple peaks, and therefore multiple frequency components. As there are 3 peaks on the spectrum, seeing at what frequencies the peaks occur show that there are 3 harmonics with frequencies of 1725, 3450, and 5175 Hz. The frequencies are equally-powered, as they have the same intensity. The fundamental frequency is 1725 Hz, as it is the greatest common divisor of the harmonics.

