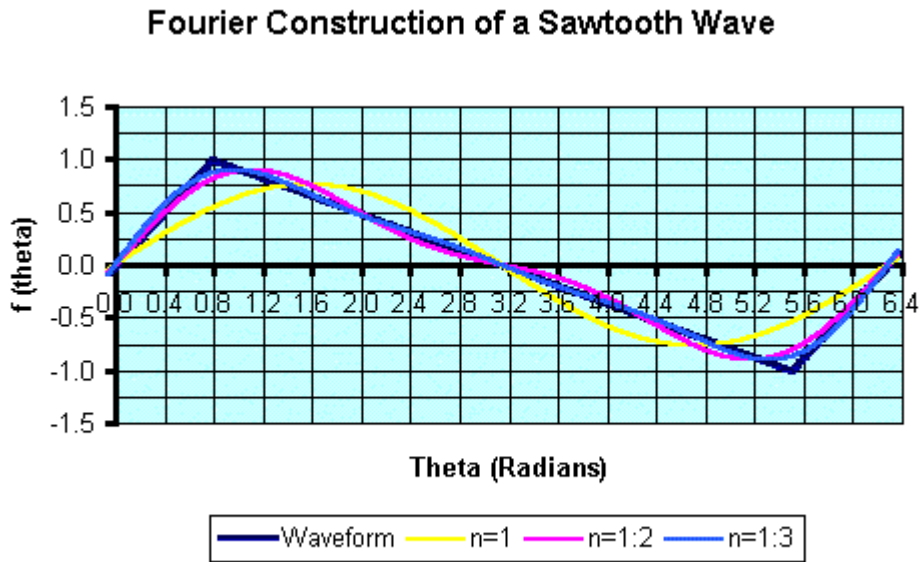


The following two figures show the “Fourier construction” of a periodic, bipolar, unit-amplitude sawtooth wave. The waveforms in these figures were generated using truncated, finite-term version(s) of the Fourier series expansion for this waveform:

$$f(\theta) \Big|_{\substack{\text{sawtooth} \\ \text{-wave}}} = \frac{2}{3} \sum_{n=1}^{n=\infty} \left(\frac{4}{n\pi}\right)^2 \sin\left(\frac{n\pi}{4}\right) \sin(n\theta) = \frac{32}{3\pi^2} \left\{ \frac{1}{\sqrt{2}} \sin(\theta) + \frac{1}{4} \sin(2n\theta) + \frac{1}{9\sqrt{2}} \sin(3n\theta) + 0 - \dots + \dots \right\}$$

The first figure shows the bipolar sawtooth wave (labelled as “Waveform”) overlaid with three other waveforms: that associated with just the fundamental (“ $n = 1$ ”), then the waveform associated with fundamental + 2nd harmonic (“ $n = 1:2$ ”), then the waveform associated with fundamental + 2nd + 3rd harmonic (“ $n = 1:3$ ”).



The second figure shows the bipolar sawtooth wave (labelled as “Waveform”) overlaid with three other waveforms: that associated with the fundamental through the 5th harmonic (“ $n = 1:5$ ”), then the waveform associated with fundamental through the 6th harmonic (“ $n = 1:6$ ”), then the waveform associated with fundamental through the 7th harmonic (“ $n = 1:7$ ”).