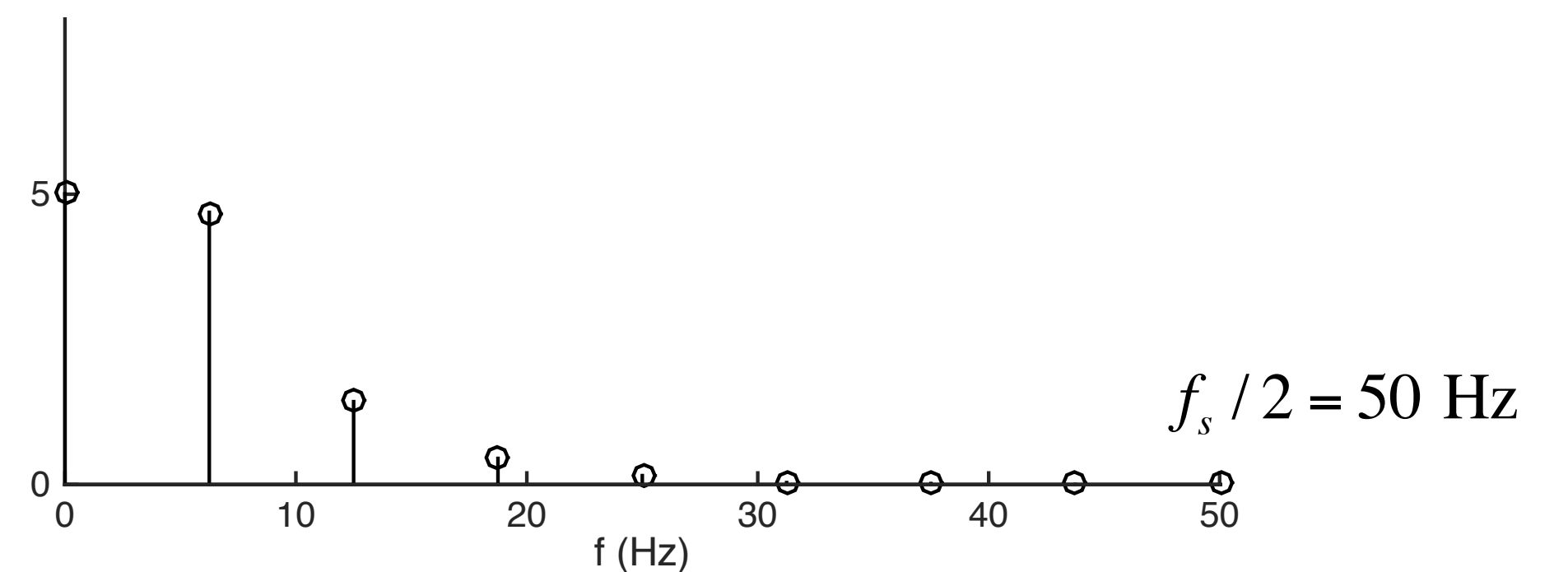
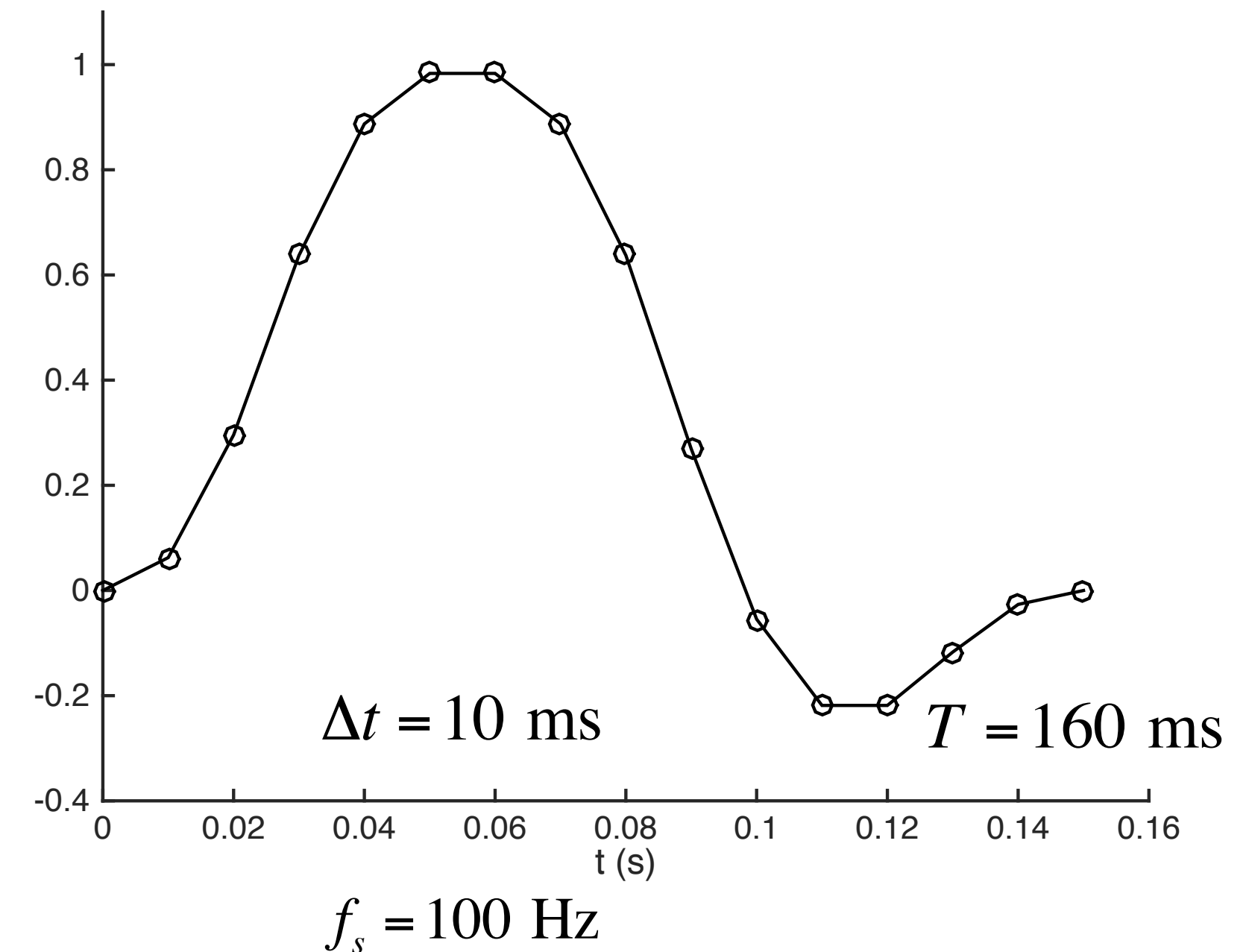
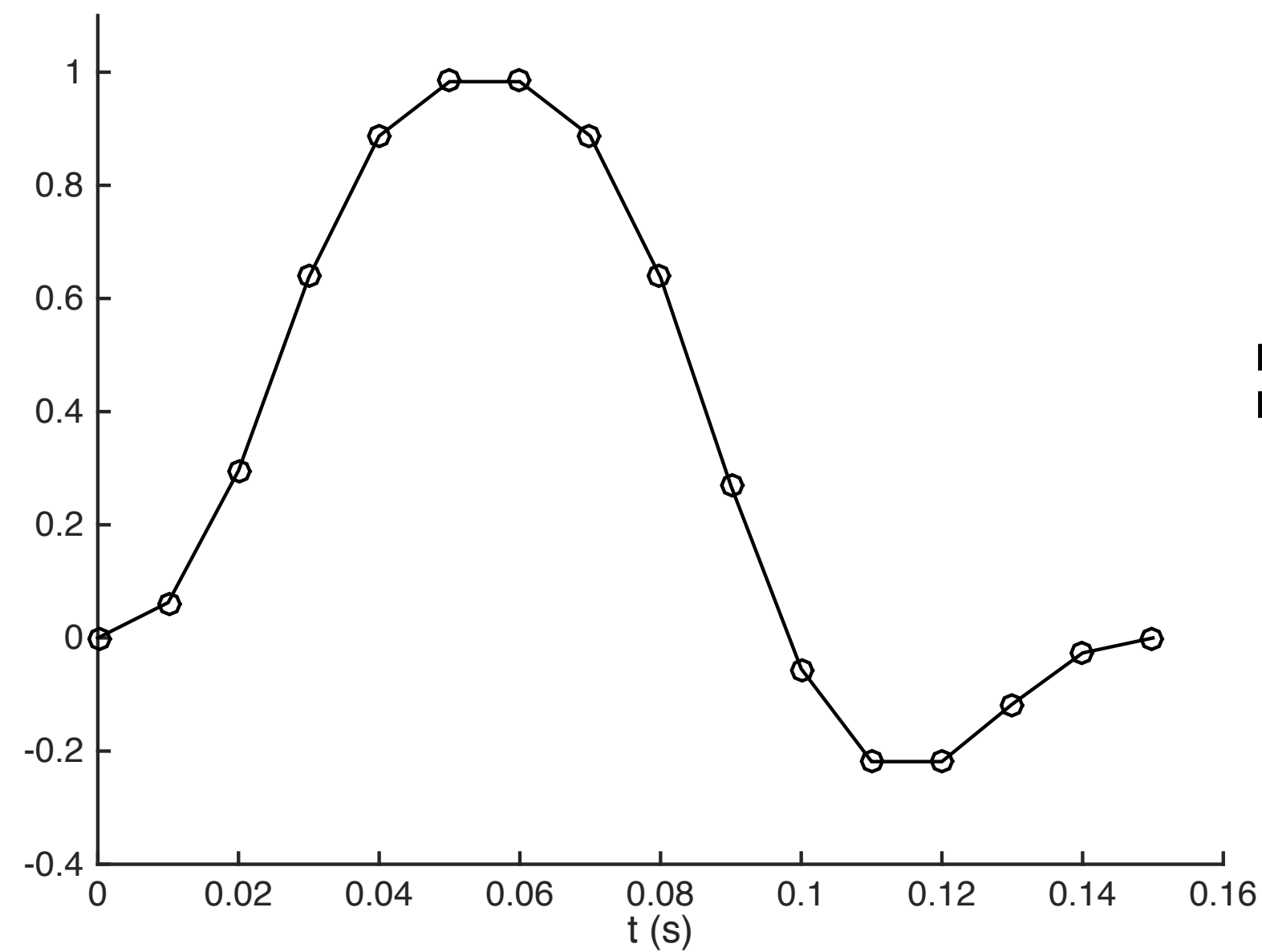


The Fourier Transform

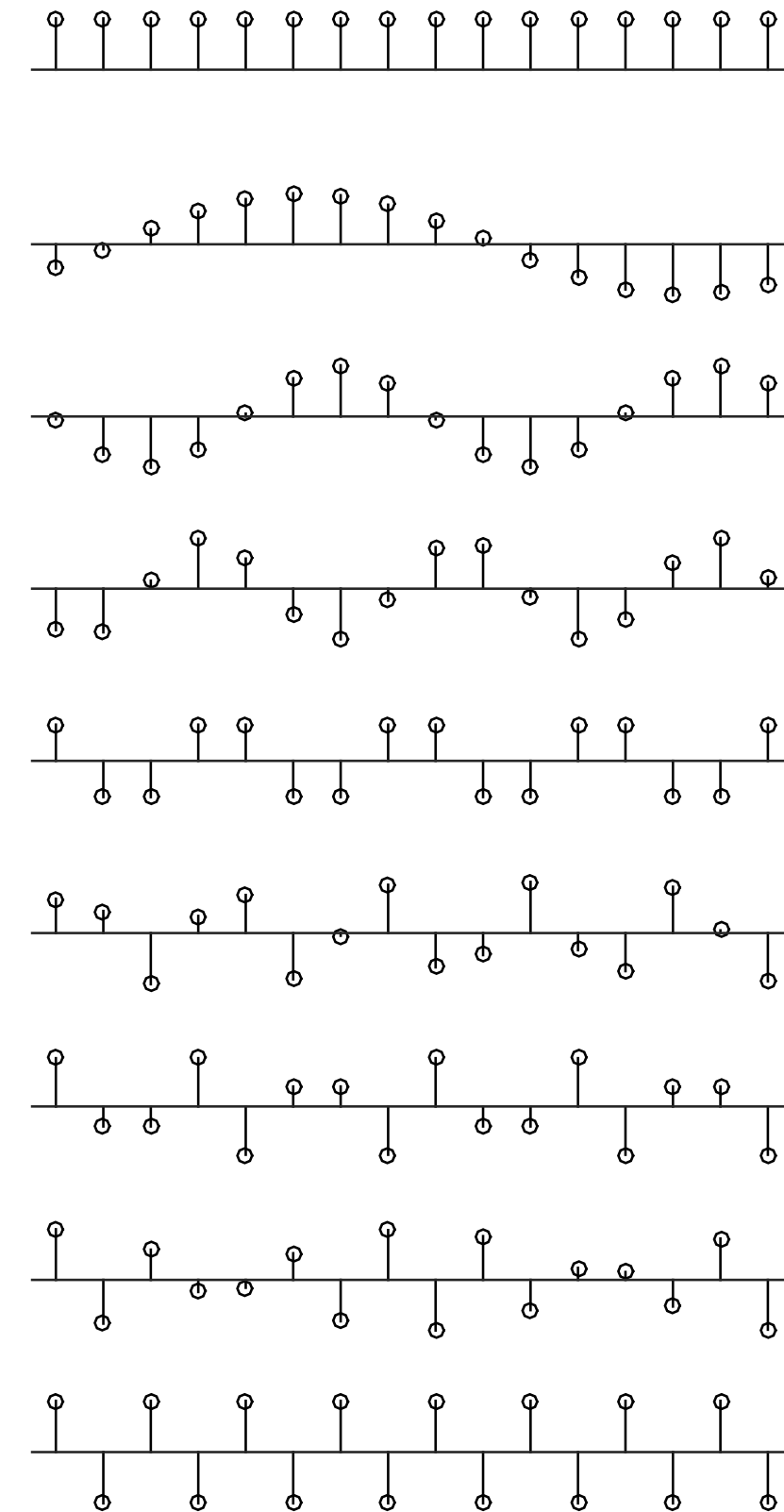
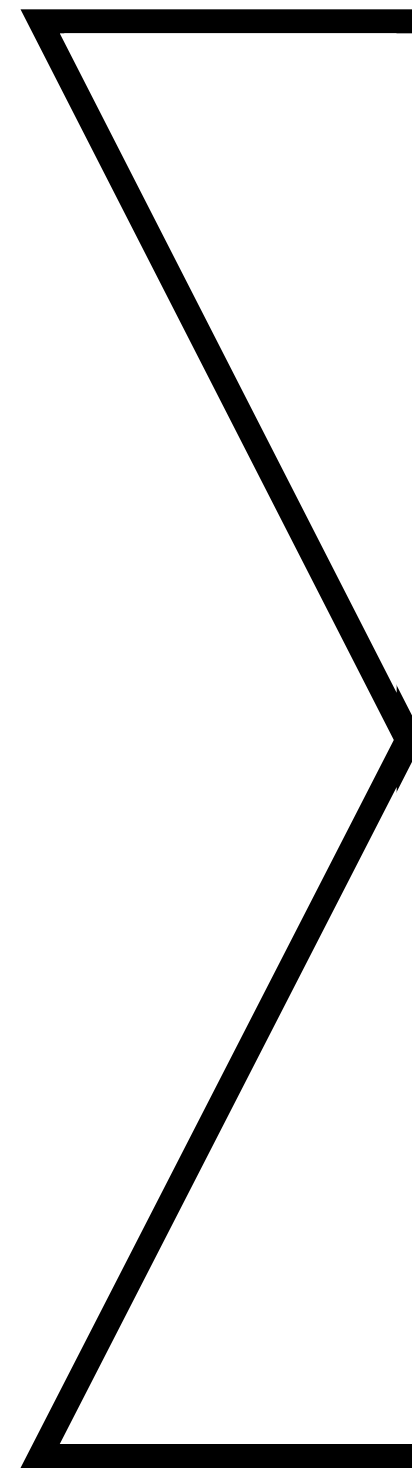
- **Every** Time-Domain Signal can be Re-expressed as a Sum of Sinusoids/Oscillations
- # of time points = # of frequencies
- Reciprocal relationship: *time* resolution (Δt) & *frequency span* (f_s)
- Reciprocal relationship: *frequency* resolution (Δf) & *time span* (T)



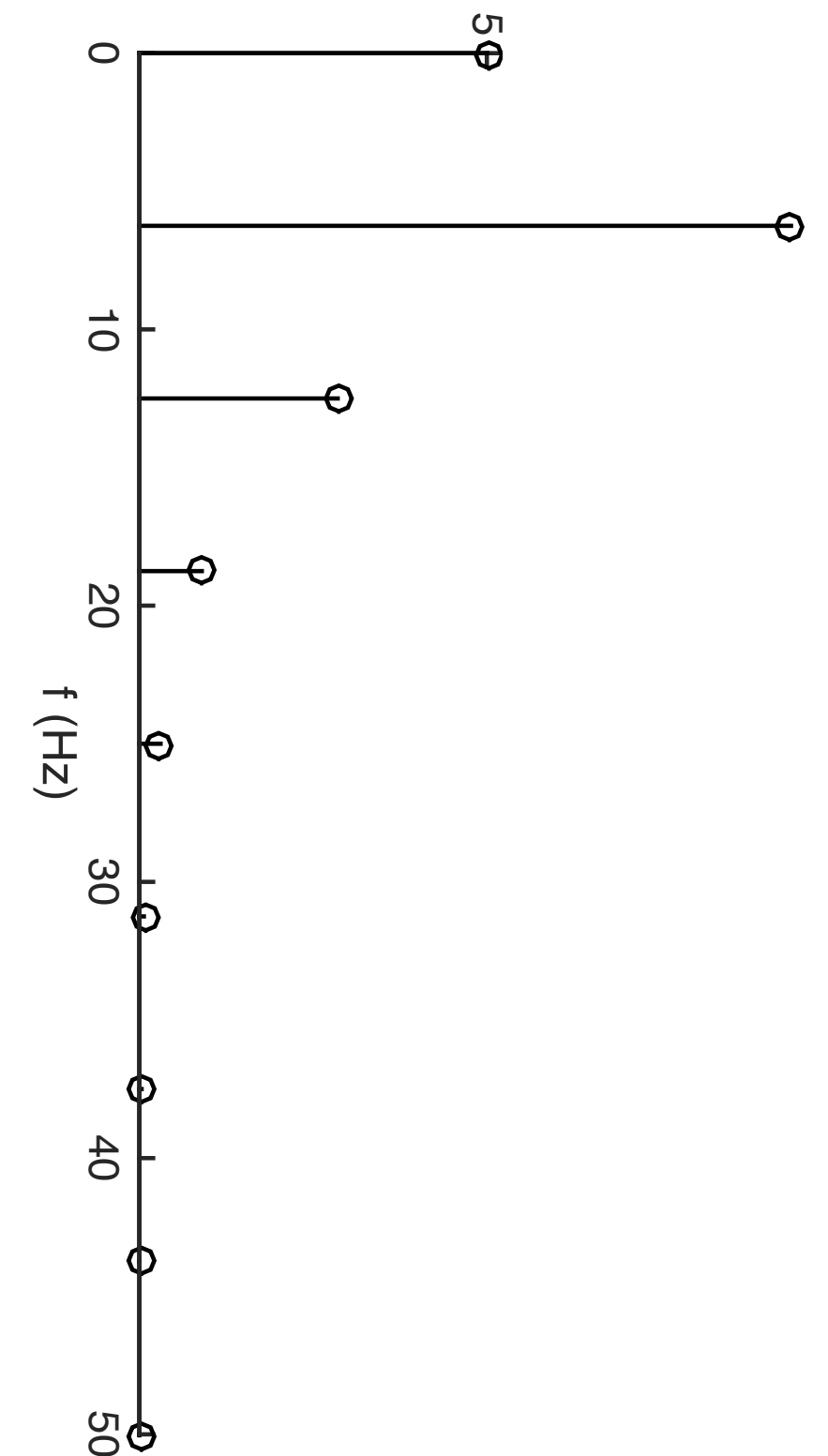
The Fourier Transform



=



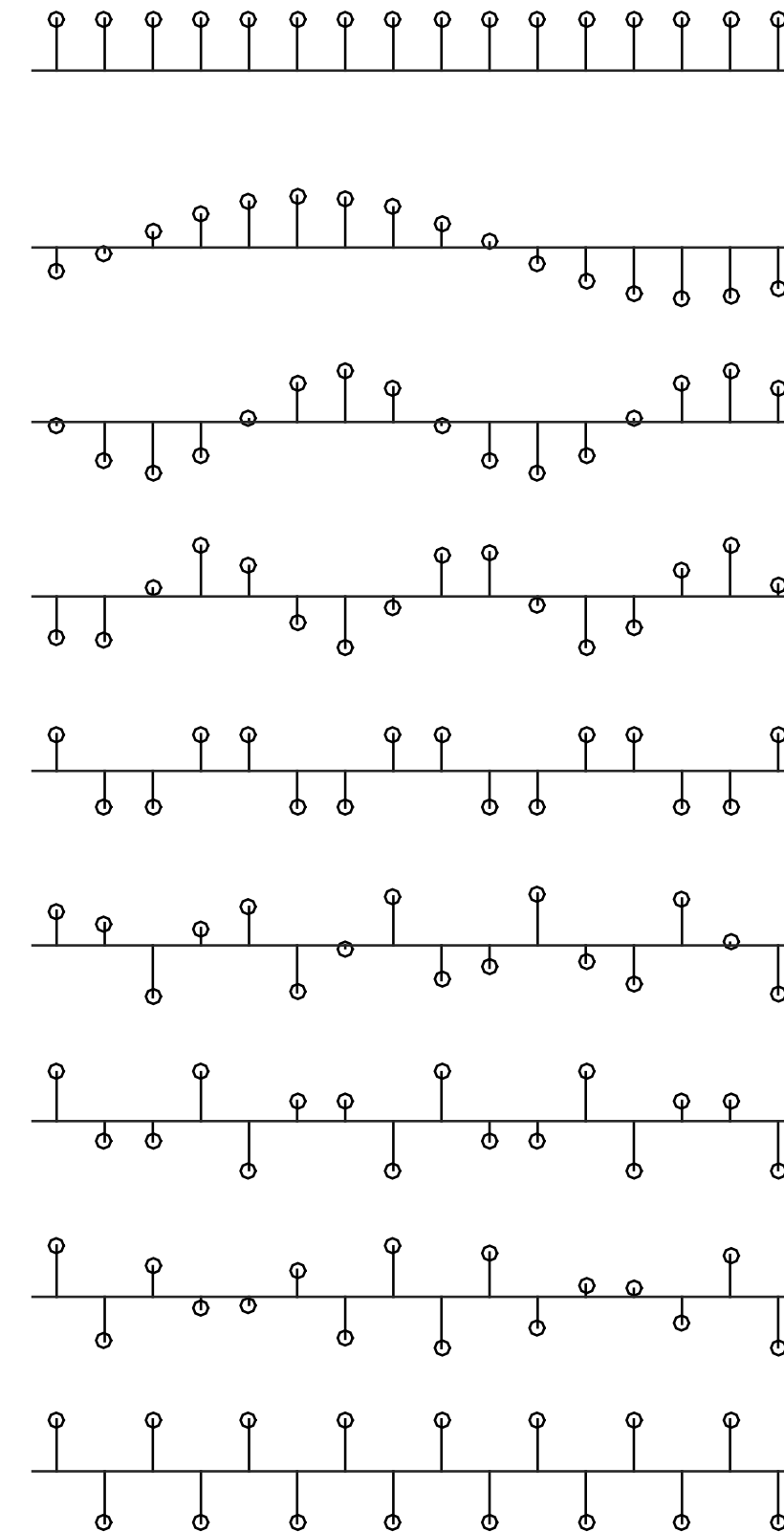
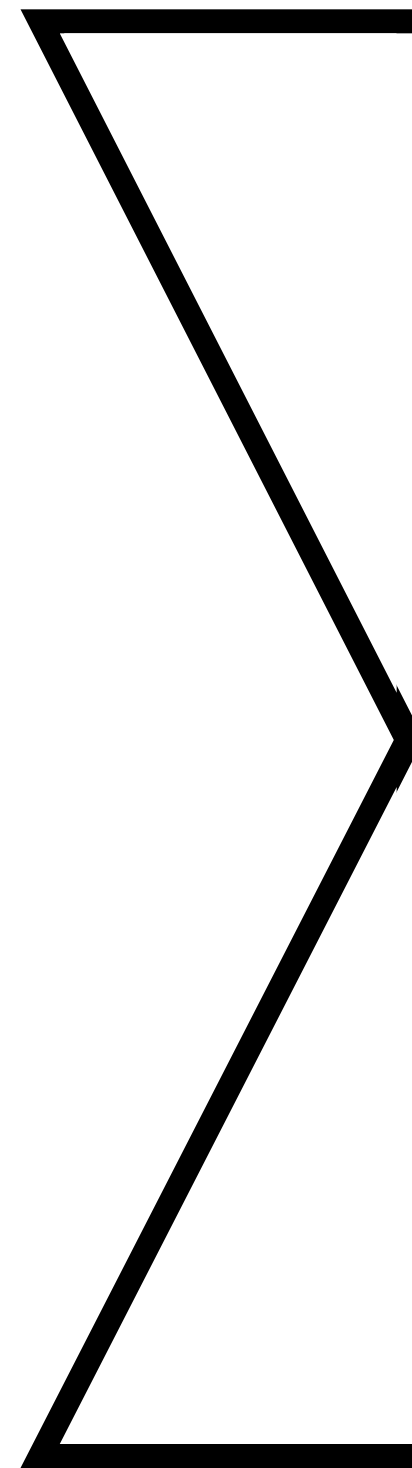
x



The Fourier Transform

Every Signal

=



x Fourier
Coefficients