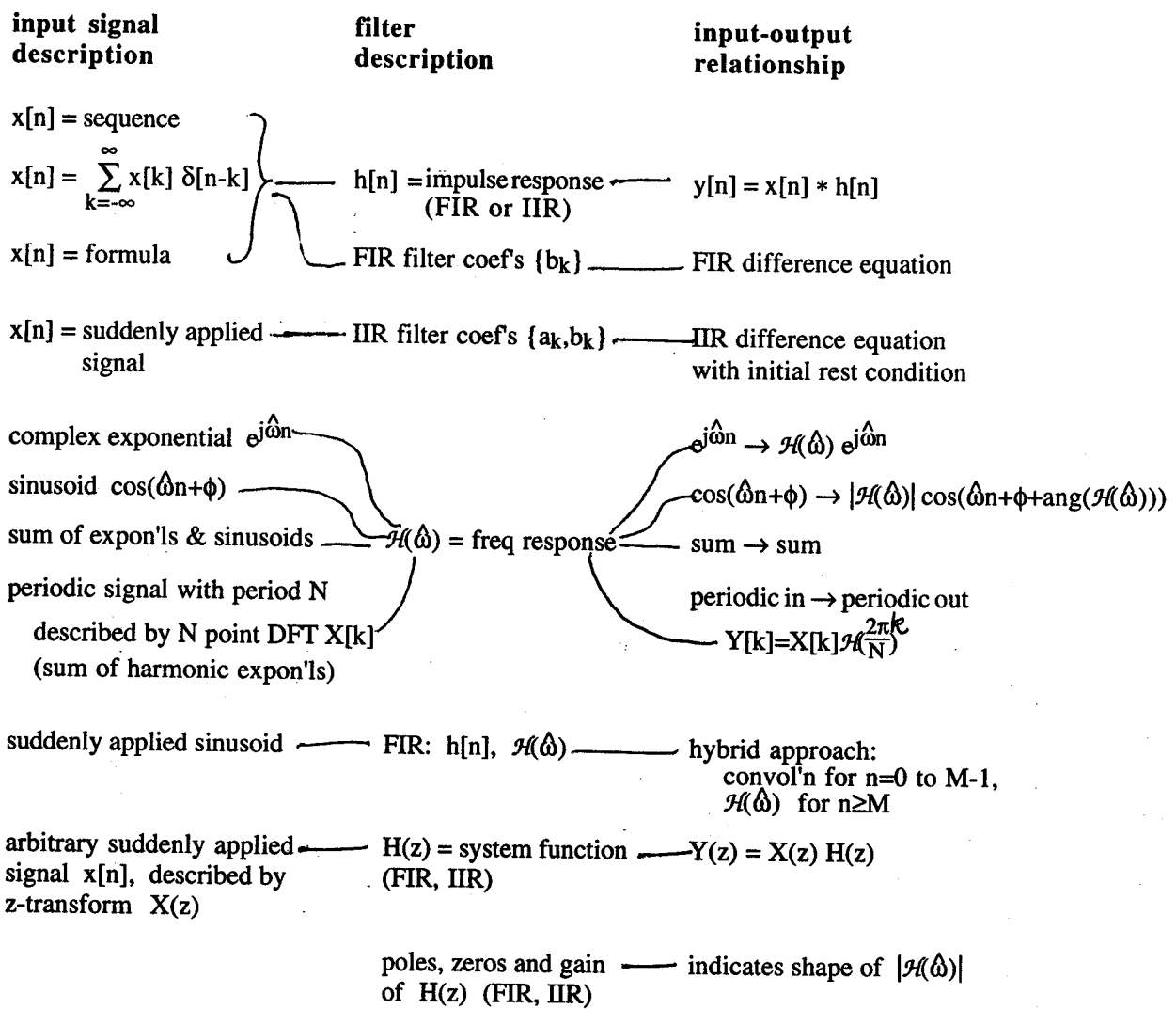


Summary of Filter Input-Output Relationships



Notes:

1. IIR filters need to be stable in order that
 - frequency response function exists
 - convolution of impulse response with any input signal is defined
 - the response to a sinusoid with support $-\infty$ to ∞ is a sinusoid
 - the response to a suddenly applied sinusoidal input is an asymptotically sinusoidal output
2. An IIR filter is stable if all poles are located inside the unit circle.