

TIME DOMEIN

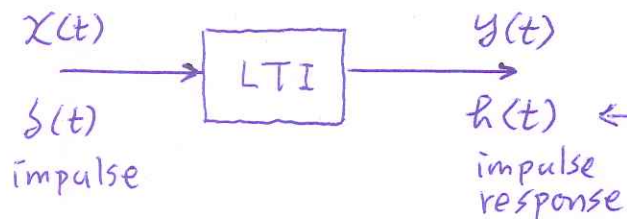
FREQUENCY DOMEIN

CONTINUOUS
(ANALOG)

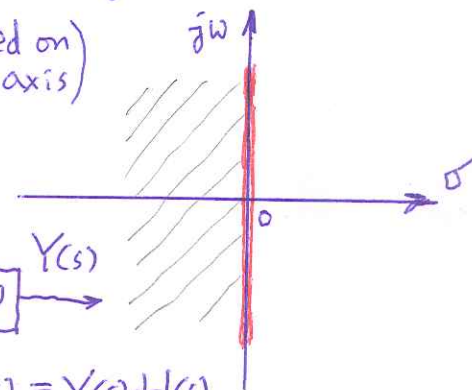
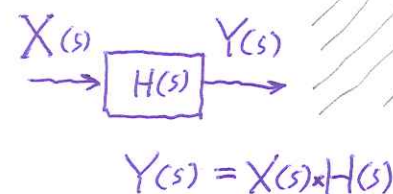
Laplace Transform $X(t) \leftrightarrow X(s)$, where $s = \sigma + j\omega$

Fourier Transform $X(t) \leftrightarrow X(j\omega)$ (evaluated on the $j\omega$ axis)

For LTI, $y(t) = x(t) * h(t)$



$H(s)$
transfer function



DISCRETE
(DIGITAL)

Z Transform $X[n] \leftrightarrow X(z)$, where $z = r e^{j\omega}$

Discrete Fourier Transform $X[n] \leftrightarrow X(e^{j\omega})$ (evaluated on the unit circle)

For LTI, $y[n] = x[n] * h[n]$

