Other Transformations

$z - transform (discrete - time)$

$$X(z) = \sum_{n=-\infty}^{\infty} x(n) z^{-n} \qquad (z = re^{j\Omega})$$

$Laplace\, transform (continuous - time)$

$$X(s) = \int_{-\infty}^{\infty} x(t) e^{-st} dt \qquad (s = \sigma + j\omega)$$

Other Transformations

Determine laplace transform, the ROC, poles and zeros for the following signals:

$$(1)\, x(t) = e^{at}u(t)$$

$$(2)\, x(t) = \sin(3t)u(t)$$

Other Transformations

Determine the transfer function, the ROC, poles and zeros for the following impulse responses:

$$(1) \quad h(t) = -e^{at}u(-t)$$

$$(2) \quad h(t) = e^{-2t}u(t) + e^{-3t}u(t)$$