Tabla de Transformadas de Laplace Comunes[*]

Melissa Selik

Richard Baraniuk

Translated By:

Fara Meza

Erika Jackson

Based on *Table of Common Laplace Transforms*[†] by

Melissa Selik

Richard Baraniuk

Abstract

Lista señales y ROC para varias transformadas de Laplace.

---

[*]Version 1.1: Aug 2, 2005 12:27 pm +0000

[†]http://cnx.org/content/m10111/2.10/

[‡]http://creativecommons.org/licenses/by/2.0/

Señal	Transformada de Laplace	Región de Convergencia
$\delta\left(t\right)$	1	All s
$\delta\left(t-T\right)$	$e^{-(sT)}$	All s
$u\left(t\right)$	$\frac{1}{s}$	$\Re\left(s\right)>0$
$-u\left(-t\right)$	$\frac{1}{s}$	$\Re\left(s\right)<0$
$tu\left(t\right)$	$\frac{1}{s^2}$	$\Re\left(s\right)>0$
$t^nu\left(t\right)$	$\frac{n!}{s^{n+1}}$	$\Re\left(s\right)>0$
$-\left(t^nu\left(-t\right)\right)$	$\frac{n!}{s^{n+1}}$	$\Re\left(s\right)<0$
$e^{-(\lambda t)}u\left(t\right)$	$\frac{1}{s+\lambda}$	$\Re\left(s\right)>-\lambda$
$\left(-e^{-(\lambda t)}\right)u\left(-t\right)$	$\frac{1}{s+\lambda}$	$\Re\left(s\right)<-\lambda$
$te^{-(\lambda t)}u\left(t\right)$	$\frac{1}{(s-\lambda)^2}$	$\Re\left(s\right)>-\lambda$
$t^ne^{-(\lambda t)}u\left(t\right)$	$\frac{n!}{(s+\lambda)^{n+1}}$	$\Re\left(s\right)>-\lambda$
$-\left(t^ne^{-(\lambda t)}u\left(-t\right)\right)$	$\frac{n!}{(s+\lambda)^{n+1}}$	$\Re\left(s\right)<-\lambda$
$\cos\left(bt\right)u\left(t\right)$	$\frac{s}{s^2+b^2}$	$\Re\left(s\right)>0$
$\sin\left(bt\right)u\left(t\right)$	$\frac{b}{s^2+b^2}$	$\Re\left(s\right)>0$
$e^{-(at)}\cos\left(bt\right)u\left(t\right)$	$\frac{s+a}{(s+a)^2+b^2}$	$\Re\left(s\right)>-a$
$e^{-(at)}\sin\left(bt\right)u\left(t\right)$	$\frac{b}{(s+a)^2+b^2}$	$\Re\left(s\right)>-a$
$\frac{d^n}{dt^n}\delta\left(t\right)$	s^n	All s

Table 1