

TABLE OF LAPLACE TRANSFORMS

<u>function <math>f(t)</math></u>	<u>transform <math>F(s)</math></u>
$t^n$	$n!/s^{n+1}$
$e^{at}$	$1/(s - a)$
$\sin at$	$\frac{a}{a^2 + s^2}$
$\cos at$	$\frac{s}{a^2 + s^2}$
$\sinh at$	$\frac{a}{s^2 - s^2}$
$\cosh at$	$\frac{s}{s^2 - s^2}$
$u(t)e^{at}$	$U(s - a)$
$H(t - a)u(t - a)$	$e^{-as}U(s)$
$1 - \operatorname{erf} (a/\sqrt{4t})$	$e^{-a\sqrt{s}}/s$
$\frac{e^{-a^2/(4t)}}{\sqrt{t}}$	$\sqrt{\pi/s} e^{-a\sqrt{s}}$
$\frac{ae^{-a^2/(4t)}}{\sqrt{4t^3}}$	$\sqrt{\pi} e^{-a\sqrt{s}}$
$u^{(n)}(t)$	$s^n U(s) - s^{n-1}u(0) - s^{n-2}u'(0) - \dots - u^{(n-1)}(0)$
$(u * v)(t)$	$U(s)V(s)$
$tu(t)$	$-U'(s)$
$u(t)/t$	$\int_s^\infty U(r) dr$
$u(at)$	$U(s/a)/a$
$\delta(t - a)$	$e^{-as}$

TABLE OF FOURIER TRANSFORMS

<u>function <math>f(x)</math></u>	<u>transform <math>\hat{f}(\omega) := \int_{-\infty}^{\infty} f(x)e^{-i\omega x} dx</math></u>
$H(a -  x )$	$\frac{2}{\omega} \sin(a\omega)$
$2H(x) - H(x + a) - H(x - a)$	$-\frac{4i}{\omega} \sin^2(a\omega/2)$
$e^{-b x }$	$\frac{2b}{b^2 + \omega^2}$
$\frac{1}{\pi} \frac{b}{b^2 + x^2}$	$e^{-b \omega }$
$e^{-ax^2}$	$\sqrt{\frac{\pi}{a}} e^{-\omega^2/(4a)}$
$\frac{1}{\sqrt{4a\pi}} e^{-x^2/(4a)}$	$e^{-a\omega^2}$
$u^{(n)}(x)$	$(i\omega)^n \hat{u}(\omega)$
$xu(x)$	$i \frac{d}{d\omega} \hat{u}(\omega)$
$u(ax)$	$\frac{1}{a} \hat{u}(\omega/a)$
$u(x - a)$	$e^{-i\omega a} \hat{u}(\omega)$
$e^{iax} u(x)$	$\hat{u}(\omega - a)$
$\delta(x - a)$	$e^{-i\omega a}$