

ラプラス変換表

$F(s) = \mathcal{L}(f)$	$f(t) = \mathcal{L}^{-1}(F)$
$\frac{1}{s}$	$\delta(t)$
$\frac{1}{s^n}$	$U(t) = 1$
$\frac{1}{s^2}$	t
$\frac{1}{s^n}$	$\frac{t^{n-1}}{(n-1)!}$
$\frac{1}{\sqrt{s}}$	$\frac{1}{\sqrt{\pi t}}$
$\frac{1}{s-\lambda}$	$e^{\lambda t}$
$\frac{s}{s^2-\lambda^2}$	$\cosh \lambda t$
$\frac{\lambda}{s^2-\lambda^2}$	$\sinh \lambda t$
$\frac{s}{s^2+\lambda^2}$	$\cos \lambda t$
$\frac{\lambda}{s^2+\lambda^2}$	$\sin \lambda t$
$e^{-\lambda s}$	$\delta(t-1)$
$\frac{e^{-\lambda s}}{s}$	$U(t-\lambda)$
$\frac{1}{(s-\lambda)^2}$	$e^{\lambda t} t$
$\frac{1}{(s-\lambda)^n}$	$e^{\lambda t} \frac{t^{n-1}}{(n-1)!}$
$\frac{1}{\sqrt{s-\lambda}}$	$e^{\lambda t} \frac{1}{\sqrt{\pi t}}$
$\frac{as+b}{(s-\lambda)^2}$	$e^{\lambda t} \{a + (b + \lambda a)t\}$
$\frac{s-\mu}{(s-\mu)^2-\lambda^2}$	$e^{\mu t} \cosh \lambda t$
$\frac{\mu}{(s-\lambda)^2-\mu^2}$	$e^{\lambda t} \sinh \mu t$

$$\frac{s-\lambda}{(s-\lambda)^2+\mu^2} \qquad\qquad e^{\lambda t}\cos\mu t$$

$$\frac{\mu}{(s-\lambda)^2+\mu^2} \qquad\qquad e^{\lambda t}\sin\mu t$$

$$\frac{s}{(s-\lambda)^2+\mu^2} \qquad\qquad e^{\lambda t}\left(\frac{\lambda}{\mu}\sin\mu t+\cos\mu t\right)$$

$$\frac{1}{\{(s-\lambda)^2+\mu^2\}^2} \qquad\qquad \frac{e^{\lambda t}}{2\mu^2}\Bigl((\lambda+\mu^2t)\frac{1}{\mu}\sin\mu t-\lambda t\cos\mu t\Bigr)$$

$$\frac{s}{\{(s-\lambda)^2+\mu^2\}^2} \qquad\qquad \frac{e^{\lambda t}}{4\mu^2}\Bigl\{\left(\frac{3}{2}-\frac{\mu^2t}{2}\right)\frac{1}{\mu}\sin\mu t-\frac{3}{2}t\cos\mu t\Bigr\}$$

$$\frac{1}{\{(s-\lambda)^2+\mu^2\}^3} \qquad\qquad \frac{e^{\lambda t}}{8\mu^4}\Bigl\{(\lambda(3-\mu^2t)+\mu^2t)\frac{1}{\mu}\sin\mu t-(3\lambda t+\mu^2t^2)\cos\mu t\Bigr\}$$

$$\frac{1}{s^\lambda} \qquad\qquad \frac{t^{\lambda-1}}{\Gamma(\lambda)}$$

$$\frac{1}{(s-\lambda)^\mu} \qquad\qquad e^{\lambda t}\frac{t^{\mu-1}}{\Gamma(\mu)}$$

$$\frac{1}{s^n\sqrt{s}} \qquad\qquad \frac{4^n n! \, t^n}{(2n)! \, \sqrt{\pi t}}$$

$$\frac{1}{(s-1)\sqrt{s}} \qquad\qquad t^n \mathrm{erf}\sqrt{t}$$

$$\frac{1}{s\sqrt{s+\lambda}} \qquad\qquad \frac{1}{\sqrt{\lambda}}\mathrm{erf}\sqrt{\lambda t}$$

$$\frac{1}{s}\exp(-\lambda\sqrt{s}) \qquad\qquad 1\!-\!\mathrm{erf}\frac{\lambda}{2\sqrt{t}}$$

$$\frac{1}{\sqrt{s}}\,\exp\left(-\lambda\sqrt{s}\right) \qquad\qquad \frac{1}{\sqrt{\pi t}}\exp\left(-\frac{\lambda^2}{4t}\right)$$

$$\exp(-\lambda\sqrt{s}) \qquad\qquad \frac{1}{2\sqrt{\pi t^3}}\exp\left(-\frac{\lambda^2}{4t}\right)$$

$$\frac{\sqrt{\pi}}{2}\,\exp\frac{s^2}{4}\mathrm{erfc}\frac{s}{2} \qquad\qquad \exp(-t^2)$$

$$-\frac{c+\log s}{s} \qquad\qquad \log t$$

(c はオイラーの定数)

$$\log\left(1 + \frac{1}{s}\right)$$

$$\log\frac{s-\lambda}{s-\mu}$$

$$\frac{1}{2}\log\frac{s+\lambda}{s-\lambda}$$

$$\tan^{-1}\frac{\lambda}{s}$$

$$\tan^{-1}\frac{2\lambda s}{s^2-\lambda^2+\mu^2}$$

$$\tan^{-1}\frac{s^2 - \lambda s + \mu}{\lambda \mu}$$

$$\frac{s^2-2\lambda^2}{s(s^2-4\lambda^2)}$$

$$\frac{2\lambda^2}{s(s^2-4\lambda^2)}$$

$$\frac{s^2+2\lambda^2}{s(s^2+4\lambda^2)}$$

$$\frac{2\lambda^2}{s(s^2+4\lambda^2)}$$

$$\frac{s \cos \mu - \lambda \sin \mu}{s^2 + \lambda^2}$$

$$\frac{s \sin \mu + \lambda \cos \mu}{s^2 + \lambda^2}$$

$$\frac{s^2 - \lambda^2}{(s^2 + \lambda^2)^2}$$

$$\frac{2\lambda s}{(s^2 + \lambda^2)^2}$$

$$\frac{1}{\sqrt{\pi s}} \exp\frac{\lambda^2}{4s}$$

$$\frac{1}{2\sqrt{\pi s^3}} \exp\frac{\lambda^2}{4s}$$

$$\frac{1}{\sqrt{\pi s}} \exp\left(-\frac{\lambda^2}{4s}\right)$$

$$\frac{1 - e^{-t}}{t}$$

$$\frac{e^{\mu t} - e^{\lambda t}}{t}$$

$$\frac{\sinh \lambda t}{t}$$

$$\frac{\sin \lambda t}{t}$$

$$\frac{2}{t} \sin \lambda t \cos \mu t$$

$$\frac{e^{\lambda t} - 1}{t} \sin \mu t$$

$$\cosh^2 \lambda t$$

$$\sinh^2 \lambda t$$

$$\cos^2 \lambda t$$

$$\sin^2 \lambda t$$

$$\cos (\lambda t + \mu)$$

$$\sin(\lambda t + \mu)$$

$$t \cos \lambda t$$

$$t \sin \lambda t$$

$$\frac{\cosh \lambda \sqrt{t}}{\pi t}$$

$$\frac{\sinh \lambda \sqrt{t}}{\lambda \pi}$$

$$\frac{\cos \lambda \sqrt{t}}{\pi t}$$

$$\frac{1}{2\sqrt{\pi s^3}} \exp\left(-\frac{\lambda^2}{4s}\right)$$

$$\sqrt{\sqrt{s^2 + \lambda^2} - s}$$

$$\sqrt{\frac{\sqrt{s^2 - \lambda^2} + s}{s^2 - \lambda^2}}$$

$$\sqrt{\frac{\sqrt{s^2 - \lambda^2} - s}{s^2 - \lambda^2}}$$

$$\sqrt{\frac{\sqrt{s^2 + \lambda^2} + s}{s^2 - \lambda^2}}$$

$$\sqrt{\frac{\sqrt{s^2 + \lambda^2} - s}{s^2 - \lambda^2}}$$

$$\frac{1}{\sqrt{s^2 + \lambda^2}}$$

$$\frac{\sin \lambda \sqrt{t}}{\lambda \pi}$$

$$\frac{\sin \lambda t}{t \sqrt{2\pi t}}$$

$$\sqrt{\frac{2}{\pi t}} \cosh \lambda t$$

$$\sqrt{\frac{2}{\pi t}} \sinh \lambda t$$

$$\sqrt{\frac{2}{\pi t}} \cos \lambda t$$

$$\sqrt{\frac{2}{\pi t}} \sin \lambda t$$

$$J_0(\lambda t) \text{(0 位のベッセル関数)}$$