Laplaceova transformace: stručný přehled

$\mathcal{L}\{e^{\alpha t}\} = \frac{1}{p-\alpha}$ $\mathcal{L}\{\sin(\omega t)\} = \frac{\omega}{p^2+\omega^2}$ $\mathcal{L}\{1\} = \frac{1}{p}$

$\mathcal{L}\{t^n\} = \frac{n!}{p^{n+1}}$ $\mathcal{L}\{\cos(\omega t)\} = \frac{p}{p^2+\omega^2}$ $\mathcal{L}\{t\} = \frac{1}{p^2}$

$\mathcal{L}\{af(t)+bg(t)\} = a\mathcal{L}\{f(t)\} + b\mathcal{L}\{g(t)\}$

$\mathcal{L}\{f(t)\cdot H(t-a)\} = e^{-ap}\mathcal{L}\{f(t+a)\}$

$\mathcal{L}\{e^{at}f(t)\} = \mathcal{L}\{f\}\big|_{p-a}$

$\mathcal{L}\{f(at)\} = \frac{1}{a}\mathcal{L}\{f\}\big|_{p/a}$

$\mathcal{L}\{f'(t)\} = p\mathcal{L}\{f(t)\} - f(0^+)$

$\mathcal{L}\{f''(t)\} = p^2\mathcal{L}\{f(t)\} - pf(0^+) - f'(0^+)$

$\mathcal{L}\{t\,f(t)\} = -\frac{\mathrm{d}}{\mathrm{dp}}\mathcal{L}\{f(t)\}$

$\mathcal{L}\big\{\frac{1}{t}f(t)\big\} = \int_p^\infty \mathcal{L}\{f(t)\}(q)\,dq$

$\mathcal{L}\big\{\int_0^t f(u)\,du\big\} = \frac{1}{p}\mathcal{L}\{f(t)\}$

$\mathcal{L}^{-1}\{aF(p)+bG(p)\} = a\mathcal{L}^{-1}\{F(p)\} + b\mathcal{L}^{-1}\{G(p)\}$

$\mathcal{L}^{-1}\{e^{-ap}F(p)\} = \mathcal{L}^{-1}\{F\}\big|_{t-a}\cdot H(t-a)$

$\mathcal{L}^{-1}\{F(p-a)\} = e^{at}\mathcal{L}^{-1}\{F(p)\}$

$\mathcal{L}^{-1}\{F(ap)\} = \frac{1}{a}\mathcal{L}^{-1}\{F(p)\}\big|_{t/a}$

Laplaceova transformace: stručný přehled

$e^{\alpha t} \,\widehat{=}\, \frac{1}{p-\alpha}$ $\sin(\omega t) \,\widehat{=}\, \frac{\omega}{p^2+\omega^2}$ $1 \,\widehat{=}\, \frac{1}{p}$

$t^n \,\widehat{=}\, \frac{n!}{p^{n+1}}$ $\cos(\omega t) \,\widehat{=}\, \frac{p}{p^2+\omega^2}$ $t \,\widehat{=}\, \frac{1}{p^2}$

$af(t)+bg(t) \,\widehat{=}\, aF(p)+bG(p)$

$\mathcal{L}\{f(t)\cdot H(t-a)\} = e^{-ap}\mathcal{L}\{f(t+a)\}$

$e^{at}f(t) \,\widehat{=}\, F(p)\big|_{p-a}$

$f(at) \,\widehat{=}\, \frac{1}{a}F(p)\big|_{p/a}$

$f'(t) \,\widehat{=}\, pF(p) - f(0^+)$

$f''(t) \,\widehat{=}\, p^2F(p) - pf(0^+) - f'(0^+)$

$t\,f(t) \,\widehat{=}\, -[F(p)]'$

$\frac{1}{t}f(t) \,\widehat{=}\, \int_p^\infty F(q)\,dq$

$\int_0^t f(u)\,du \,\widehat{=}\, \frac{1}{p}F(p)$

$aF(p)+bG(p) \,\widehat{=}\, af(t)+bg(t)$

$\mathcal{L}^{-1}\{e^{-ap}F(p)\} = \mathcal{L}^{-1}\{F(p)\}\big|_{t-a}\cdot H(t-a)$

$F(p-a) \,\widehat{=}\, e^{at}f(t)$

$F(ap) \,\widehat{=}\, \frac{1}{a}f(t)\big|_{t/a}$