## Laplace-transzformáltak

| $f(t)$ | $F(s) = \mathcal{L}\{f(t)\}(s)$ |
|---|---|
| $1$ | $\dfrac{1}{s}$ |
| $t^n, \quad n = 0, 1, 2, \ldots$ | $\dfrac{n!}{s^{n+1}}$ |
| $e^{at}$ | $\dfrac{1}{s-a}$ |
| $\sin bt$ | $\dfrac{b}{s^2+b^2}$ |
| $\cos bt$ | $\dfrac{s}{s^2+b^2}$ |
| $\operatorname{sh} bt$ | $\dfrac{b}{s^2-b^2}$ |
| $\operatorname{ch} bt$ | $\dfrac{s}{s^2-b^2}$ |
| $e^{at}\sin bt$ | $\dfrac{b}{(s-a)^2+b^2}$ |
| $e^{at}\cos bt$ | $\dfrac{s-a}{(s-a)^2+b^2}$ |
| $t\sin bt$ | $\dfrac{2bs}{(s^2+b^2)^2}$ |
| $t\cos bt$ | $\dfrac{s^2-b^2}{(s^2+b^2)^2}$ |
| $e^{ct}f(t)$ | $F(s-c)$ |
| $f(ct), \quad c > 0$ | $\dfrac{1}{c}F\left(\dfrac{s}{c}\right)$ |
| $\int_0^t f(r)\,dr$ | $\dfrac{1}{s}F(s)$ |
| $(-t)^n f(t)$ | $\dfrac{d^n}{ds^n}F(s)$ |
| $H_c(t), \quad c > 0$ | $\dfrac{e^{-cs}}{s}$ |
| $H_c(t)f(t-c), \quad c > 0$ | $e^{-cs}F(s)$ |
| $\delta(t-c), \quad c > 0$ | $e^{-cs}$ |
| $\delta(t-c)f(t), \quad c > 0$ | $e^{-cs}f(c)$ |
| $f'(t)$ | $sF(s) - f(0)$ |
| $f^{(n)}(t)$ | $s^nF(s) - s^{n-1}f(0) - s^{n-2}f'(0) - \cdots - f^{(n-1)}(0)$ |
| $(f * g)(t)$ | $F(s)G(s)$ |

ahol $H_c(t) = \begin{cases} 0, & t < c, \\ 1, & t \geq c, \end{cases}$ és $\delta(t)$ a Dirac-féle delta-függvény