

Tabuľka Laplaceovej transformácie

	Originál	Laplaceova transformácia
1.	$f(t)$	$F(p) = \mathcal{L}[f(t)] = \int_0^\infty f(t) e^{-pt} dt$
2.	$\Theta(t)$	$\frac{1}{p}$
3.	$\alpha f(t) + \beta g(t)$	$\mathcal{L}[\alpha f(t) + \beta g(t)] = \alpha \mathcal{L}[f(t)] + \beta \mathcal{L}[g(t)]$
4.	$t^n f(t)$	$\mathcal{L}[t^n f(t)] = (-1)^n F^{(n)}(p)$
5.	t^n	$\frac{n!}{p^{n+1}}$
6.	$e^{at} f(t)$	$\mathcal{L}[e^{at} f(t)] = F(p - a)$
7.	e^{at}	$\mathcal{L}[e^{at}] = \frac{1}{p-a}$
8.	$t^n e^{at}$	$\mathcal{L}[t^n e^{at}] = \frac{n!}{(p-a)^{n+1}}$
9.	$\cos t$	$\mathcal{L}[\cos t] = \frac{p}{p^2+1}$
10.	$\sin t$	$\mathcal{L}[\sin t] = \frac{1}{p^2+1}$
11.	$f(ct), c \in \mathbf{R}^+$	$\mathcal{L}[f(ct)] = \frac{1}{c} F\left(\frac{p}{c}\right)$
12.	$\Theta(t - \tau) f(t - \tau)$	$\mathcal{L}[\Theta(t - \tau) f(t - \tau)] = e^{-p\tau} F(p)$
13.	$f(t)$ periodická - T	$\mathcal{L}[f(t)] = \frac{\int_0^T f(t) e^{-pt} dt}{1 - e^{-pT}} = \frac{F_T(p)}{1 - e^{-pT}}$
14.	$f^{(k)}(t)$	$\mathcal{L}[f^{(k)}(t)] = p^k F(p) - \sum_{j=0}^{k-1} p^{k-1-j} f^{(j)}(0+)$
15.	$\int_0^t f(s) ds$	$\mathcal{L}\left[\int_0^t f(s) ds\right] = \frac{F(p)}{p}$
16.	$(f * g)(t) = \int_0^t f(s) g(t-s) ds$	$\mathcal{L}[(f * g)(t)] = \mathcal{L}[f(t)] \mathcal{L}[g(t)]$

Inverzná Laplaceova transformácia

$$17. f(t) = \sum_{k=1}^n \text{res}_{p=p_k} [F(p) e^{pt}], \forall t > 0$$