

Tabelul A1-5

$f(t)$ ◀ $f[t]$ ▶	$f(s) = \mathcal{L}\{f(t)\}$	$f(z) = \mathcal{Z}\{f[t]\} = \mathcal{Z}\{f(s)\}$	$f_g(z) = \mathcal{Z}\{f[t, g]\} = \mathcal{Z}_g\{f(s)\}$
$\delta(t)$	1	$\times$	$\times$
◀ $\delta[t]$ ▶	$\times$	1	$\times$
1, $\sigma(t)$	$\frac{1}{s}$	$\frac{z}{z-1}$	$\frac{z}{z-1}$
◀ $(-1)^t$ ▶	$\times$	$\frac{z}{z+1}$	$\times$
t	$\frac{1}{s^2}$	$\frac{hz}{(z-1)^2}$	$\frac{hz[gz + (1-g)]}{(z-1)^2}$
t <sup>2</sup>	$\frac{2}{s^3}$	$\frac{h^2z(z+1)}{(z-1)^3}$	$\frac{h^2z[g^2z^2 + (1+2g-2g^2)z + (1-g)^2]}{(z-1)^3}$
t <sup>3</sup>	$\frac{6}{s^4}$	$\frac{h^3z(z^2+4z+1)}{(z-1)^4}$	$\frac{h^3z[g^3z^3 + (1+3g+3g^2-3g^3)z^2 + (4-6g^2+3g^3)z + (1-g)^3]}{(z-1)^4}$
t <sup>n</sup>	$\frac{n!}{s^{n+1}}$	$\lim_{a \rightarrow 0} \frac{\partial^n}{\partial a^n} \left\{ \frac{z}{z-e^{-ah}} \right\}$	$\lim_{a \rightarrow 0} \frac{\partial^n}{\partial a^n} \left\{ \frac{ze^{agh}}{z-e^{-ah}} \right\}$
a <sup>t</sup> , a > 0	$\frac{1}{s - \ln a}$	$\frac{z}{z-a^h}$	$\frac{za^{gh}}{z-a^h}$
◀ $(-a)^t$ , a > 0 ▶	$\times$	$\frac{z}{z+a}$	$\times$
$\frac{a^t}{t!}$ , a > 0	$\times$	$e^{\frac{a}{z}}$	$\times$
e <sup>-at</sup>	$\frac{1}{s+a}$	$\frac{z}{z-e^{-ah}}$	$\frac{z \cdot e^{agh}}{z-e^{-ah}}$
$\delta(t) - a \cdot e^{-at}$	$\frac{s}{s+a}$	$\times$	$\times$
te <sup>-at</sup>	$\frac{1}{(s+a)^2}$	$\frac{hze^{-ah}}{(z-e^{-ah})^2}$	$\frac{h^2ze^{-agh}[gz + (1-g)e^{-ah}]}{(z-e^{-ah})^2}$
(1-at)e <sup>-at</sup>	$\frac{s}{(s+a)^2}$	$\frac{z[z - (1+ah)e^{-ah}]}{(z-e^{-ah})^2}$	$\frac{ze^{-agh}}{(z-e^{-ah})^2} [(1-agh)z - (1+ah-agh)e^{-ah}]$
t <sup>2</sup> e <sup>-at</sup>	$\frac{2}{(s+a)^3}$	$\frac{h^2ze^{-ah}(z+e^{-ah})}{(z-e^{-ah})^3}$	$\frac{h^2ze^{-agh}}{(z-e^{-ah})^3} [g^2z^2 + (1+2g-2g^2)e^{-ah}z + (1-g)^2e^{-2ah}]$

$t^n e^{at}$	$\frac{n!}{(s+a)^{n+1}}$	$\frac{\partial^n}{\partial a^n} \left\{ \frac{z}{z - e^{-ah}} \right\}$	$\frac{\partial^n}{\partial a^n} \left\{ \frac{ze^{agh}}{z - e^{-ah}} \right\}$
$(1 - e^{-at})$	$\frac{a}{s(s+a)}$	$\frac{(1 - e^{-ah})z}{(z-1)(z - e^{-ah})}$	$\frac{(1 - e^{-agh})z^2 + (e^{-agh} - e^{-ah})z}{(z-1)(z - e^{-ah})}$
$(at - 1 + e^{-at})$	$\frac{a^2}{s^2(s+a)}$	$\frac{(ah-1+e^{-ah})z^2}{(z-1)^2(z - e^{-ah})} + \frac{(1-ah)e^{-ah} - e^{-ah}}{(z-1)^2(z - e^{-ah})}z$	$\frac{z}{(z-1)^2(z - e^{-ah})} \cdot \{ [agh - 1 + e^{-agh}] \cdot z^2 + [ah(1 - g - ge^{agh}) + 1 - 2e^{-egh} + e^{-ah}] \cdot z + [e^{-agh} - ahe^{-ah}(1 - g) - e^{ah}] \}$
$(e^{-at} - e^{-bt})$	$\frac{b-a}{s(s+a)(s+b)}$	$\frac{z(e^{-ah} - e^{-bh})}{(z - e^{-ah})(z - e^{-bh})}$	$\frac{(e^{-agh} - e^{-bgh})z^2 + (e^{-h(a+bh)} - e^{-h(b+ah)})z}{(z - e^{-ah})(z - e^{-bh})}$
$(a-b) + be^{at} - ae^{bt}$	$\frac{a(b-a)}{s(s+a)(s+b)}$	$\frac{z}{(z-1)(z - e^{-ah})(z - e^{-bh})} \cdot [(a-b) - ae^{bh} + be^{ah}] \cdot z + [(a-b) \cdot e^{-(a+b)h} - ae^{ah} + be^{bh}]$	$\frac{(a-b)z}{z-1} + \frac{bze^{aT_e}}{z - e^{-aT_e}} - \frac{aze^{-bT_e}}{z - e^{-bT_e}}$
$ab(a-b)t + (b^2 - a^2) - b^2e^{-at} + a^2e^{-bt}$	$\frac{a^2b^2(a-b)}{s^2(s+a)(s+b)}$	$\frac{ab(a-b)hz}{(z-1)^2} + \frac{(b^2 - a^2)z}{z-1} - \frac{b^2z}{z - e^{-ah}} + \frac{a^2z}{z - e^{-bh}}$	$\frac{ab(a-b)hz}{(z-1)^2} + \frac{[ab(a-b)gh + b^2 - a^2] \cdot z}{z-1} - \frac{b^2ze^{-agh}}{z - e^{-ah}} + \frac{a^2ze^{-bgh}}{z - e^{-bh}}$
$\sin \omega_0 t$	$\frac{\omega_0}{s^2 + \omega_0^2}$	$\frac{z \sin \omega_0 h}{z^2 - 2z \cos \omega_0 h + 1}$	$\frac{z^2 \sin \vartheta \omega_0 h + z \sin(1 - \vartheta) \omega_0 h}{z^2 - 2z \cos \omega_0 h + 1}$
$\cos \omega_0 t$	$\frac{s}{s^2 + \omega_0^2}$	$\frac{z(z - \cos \omega_0 h)}{z^2 - 2z \cos \omega_0 h + 1}$ caz special: $\omega_0 h = \pi$ $z \left\{ (-1)^t \right\} = \frac{z}{z+1}$	$\frac{z^2 \cos \vartheta \omega_0 h - z \cos(1 - \vartheta) \omega_0 h}{z^2 - 2z \cos \omega_0 h + 1}$
$\frac{\cos at - \cos bt}{b^2 - a^2}$	$\frac{s}{(s^2 + a^2)(s^2 + b^2)}$	$\frac{1}{b^2 - a^2} \cdot \left[ \frac{z(z - \cos ah)}{z^2 - 2z \cos ah + 1} - \frac{z(z - \cos bh)}{z^2 - 2z \cos bh + 1} \right]$	$\frac{1}{b^2 - a^2} \cdot \left[ \frac{z^2 \cos \vartheta ah - z \cos(1 - \vartheta) ah}{z^2 - 2z \cos ah + 1} - \frac{z^2 \cos \vartheta bh - z \cos(1 - \vartheta) bh}{z^2 - 2z \cos bh + 1} \right]$
$e^{-at} \sin \omega_0 t$	$\frac{\omega_0}{(s+a)^2 + \omega_0^2}$	$\frac{ze^{-ah} \sin \omega_0 h}{z^2 - 2ze^{-ah} \cos \omega_0 h + e^{-2ah}}$	$\frac{[z \sin \vartheta \omega_0 h + e^{-ah} \sin(1 - \vartheta) \omega_0 h] \cdot z \cdot e^{-agh}}{z^2 - 2ze^{-ah} \cos \omega_0 h + e^{-2ah}}$
$e^{-at} \cos \omega_0 t$	$\frac{s+a}{(s+a)^2 + \omega_0^2}$	$\frac{z^2 - ze^{-ah} \cos \omega_0 h}{z^2 - 2ze^{-ah} \cos \omega_0 h + e^{-2ah}}$ caz special: $\omega_0 h = \pi$ $z \left\{ (-e^{ah})^t \right\} = \frac{z}{z+e^{-ah}}$	$\frac{[z \cos \vartheta \omega_0 h - e^{-ah} \cos(1 - \vartheta) \omega_0 h] \cdot z \cdot e^{-agh}}{z^2 - 2ze^{-ah} \cos \omega_0 h + e^{-2ah}}$

$\text{sh}\omega_0 t$	$\frac{\omega_0}{s^2 - \omega_0^2}$	$\frac{z \cdot \text{sh}\omega_0 h}{z^2 - 2z \cdot \text{ch}\omega_0 h + 1}$	$\frac{z \cdot [z \cdot \text{sh}\vartheta\omega_0 h + \text{sh}(1 - \vartheta)\omega_0 h]}{z^2 - 2z \cdot \text{ch}\omega_0 h + 1}$
$\text{ch}\omega_0 t$	$\frac{s}{s^2 - \omega_0^2}$	$\frac{z(z - \text{ch}\omega_0 h)}{z^2 - 2z \cdot \text{ch}\omega_0 h + 1}$	$\frac{z \cdot [z \text{ch}\vartheta\omega_0 h - \text{ch}(1 - \vartheta)\omega_0 h]}{z^2 - 2z \cdot \text{ch}\omega_0 h + 1}$
$\sqrt{t}$	$\frac{1}{2s} \cdot \sqrt{\frac{\pi}{s}}$	××	××
$\frac{1}{\sqrt{t}} \cdot e^{-at}$ , $t > 0$	$\sqrt{\frac{\pi}{s+a}}$	××	××
◀ $C_t^k$ ▶ ( $C_t^k = 0, t < k$ )	×	$\frac{z}{(z-1)^{k+1}}$	×
$\frac{1}{2^+}$ $\sum_{k=1,3,\dots}^{\infty} \frac{2 \text{sink}\pi t}{k\pi}$	$\frac{1}{s(1+e^{-s})}$	××	××
◀ $f[0]=0,$ $f[t]=(-1)^{t-1}t-$ $1, t \in \mathbf{N}^*$ ▶	×	$\ln\left(1+\frac{1}{z}\right)$	×
◀ $f[0]=0,$ $f[t]=a^{t-1}t-$ $1, t \in \mathbf{N}^*$ ▶	×	$\frac{1}{a} \cdot \ln \frac{z}{z-a}$	×

În tabel s-au folosit notațiile „×” și „××” pentru situațiile în care transformatele respective nu există, respectiv nu prezintă interes.