

$f(t)$	$f(s) = \int_{0^-}^{+\infty} f(t)e^{-st}dt$
impulso di Dirac $\delta(t)$	1
gradino unitario $\delta_{-1}(t)$	$\frac{1}{s}$
$e^{at}\delta_{-1}(t)$	$\frac{1}{s-a}$
$\sin(\omega t)\delta_{-1}(t)$	$\frac{\omega}{s^2 + \omega^2}$
$\cos(\omega t)\delta_{-1}(t)$	$\frac{s}{s^2 + \omega^2}$
$e^{at} \sin(\omega t)\delta_{-1}(t)$	$\frac{\omega}{(s-a)^2 + \omega^2} = \frac{\omega}{s^2 - 2as + a^2 + \omega^2}$
$e^{at} \cos(\omega t)\delta_{-1}(t)$	$\frac{s-a}{(s-a)^2 + \omega^2} = \frac{s-a}{s^2 - 2as + a^2 + \omega^2}$
$\frac{t^k}{k!} \delta_{-1}(t)$	$\frac{1}{s^{k+1}}$
$t^k \delta_{-1}(t)$	$\frac{k!}{s^{k+1}}$
$\frac{t^k}{k!} e^{at} \delta_{-1}(t)$	$\frac{1}{(s-a)^{k+1}}$
$t^k e^{at} \delta_{-1}(t)$	$\frac{k!}{(s-a)^{k+1}}$

Tabella 1: **Trasformate di Laplace elementari**

$f(k)$	$f(z) = \sum_{k=0}^{+\infty} f(k)z^{-k}$
impulso unitario $\delta(k)$	1
gradino unitario $\delta_{-1}(k)$	$\frac{z}{z-1}$
$\lambda^k \delta_{-1}(k)$	$\frac{z}{z-\lambda}$
$\sin(\omega k) \delta_{-1}(k)$	$\frac{z \sin(\omega)}{z^2 - 2z \cos(\omega) + 1}$
$\cos(\omega k) \delta_{-1}(k)$	$\frac{z^2 - z \cos(\omega)}{z^2 - 2z \cos(\omega) + 1}$
$k \delta_{-1}(k)$	$\frac{z}{(z-1)^2}$
$k \lambda^k \delta_{-1}(k)$	$\frac{\lambda z}{(z-\lambda)^2}$
$k \lambda^{k-1} \delta_{-1}(k)$	$\frac{z}{(z-\lambda)^2}$
$\binom{k}{h} \delta_{-1}(k)$	$\frac{z}{(z-1)^{h+1}}$
$\binom{k}{h} \lambda^{k-h} \delta_{-1}(k)$	$\frac{z}{(z-\lambda)^{h+1}}$

Tabella 2: **Trasformate Zeta elementari**