

## BẢNG BIẾN ĐỔI LAPLACE VÀ BIẾN ĐỔI Z

$f(t)$	$F(p)$	$F(z)$
$\delta(t)$	$1$	$1$
$1$	$\frac{1}{p}$	$\frac{z}{z-1}$
$t$	$\frac{1}{p^2}$	$\frac{T.z}{(z-1)^2}$
$\frac{1}{2}t^2$	$\frac{1}{p^3}$	$\frac{T^2.z.(z+1)}{2(z-1)^3}$
$e^{-at}$	$\frac{1}{p+a}$	$\frac{z}{z-B} \quad ; \quad B = e^{-aT}$
$t.e^{-at}$	$\frac{1}{(p+a)^2}$	$\frac{T.z.B}{(z-B)^2}$
$\frac{1}{2}t^2.e^{-at}$	$\frac{1}{(p+a)^3}$	$\frac{1}{2}T^2.(z+B) \cdot \frac{z.B^2}{(z-B)^3}$
$1 - e^{-at}$	$\frac{a}{p.(p+a)}$	$\frac{(1-B).z}{(z-1)(z-B)}$
$\frac{1}{a}(at - 1 + e^{-at})$	$\frac{a}{p^2.(p+a)}$	$-\frac{(1-B).z}{a(z-1)(z-B)} + \frac{z.T}{(z-1)^2}$
$e^{-at}(1-at)$	$\frac{p}{(p+a)^2}$	$\frac{z^2 - zB(1+aT)}{(z-B)^2}$
$\sin at$	$\frac{a}{p^2 + a^2}$	$\frac{z.\sin aT}{z^2 - 2z \cos aT + 1}$
$\cos at$	$\frac{p}{p^2 + a^2}$	$\frac{z^2 - z.\sin aT}{z^2 - 2z \cos aT + 1}$
$e^{-at} \sin ct$	$\frac{a}{(p+a)^2 + c^2}$	$\frac{z.B.\sin cT}{z^2 - 2z.B.\cos cT + B^2}$
$e^{-at} \cos ct$	$\frac{p+a}{(p+a)^2 + c^2}$	$\frac{z.(z - B.\cos cT)}{z^2 - 2z.B.\cos cT + B^2}$