Mathematik für Maschinenbau

Wichtige Korrespondenzen der LAPLACE-CARSON-Transformation

Nr.	$F(p) = L(f)(p)$	Originalfkt. $f(t)$	Nr.	$F(p) = L(f)(p)$	Originalfkt. $f(t)$
1	1	1	14	$\frac{p}{(p+\alpha)(p+\beta)}$	$\frac{e^{-\beta t} - e^{-\alpha t}}{\alpha - \beta}$
4a	$\frac{1}{p}$	t	18	$\frac{\omega p}{p^2 + \omega^2}$	$\sin \omega t$
4	$\frac{1}{p^n}$	$\frac{t^n}{n!}$	19	$\frac{p^2}{p^2 + \omega^2}$	$\cos \omega t$
5	$\frac{p}{(p+\alpha)^{n+1}}$	$\frac{t^n}{n!}\, e^{-\alpha t}$	20	$\frac{\omega^2}{p^2 + \omega^2}$	$1 - \cos \omega t$
6a	$\frac{p}{p+\alpha}$	$e^{-\alpha t}$	21	$\frac{p(p+\alpha)}{p^2 + \omega^2}$	$\cos \omega t + \frac{\alpha}{\omega} \sin \omega t$
6	$\frac{\alpha}{p+\alpha}$	$1 - e^{-\alpha t}$	27	$\frac{\omega p}{(p+\alpha)^2 + \omega^2}$	$e^{-\alpha t} \sin \omega t$
10	$\frac{\alpha\beta}{(p+\alpha)(p+\beta)}$	$1 + \frac{\beta e^{-\alpha t} - \alpha e^{-\beta t}}{\alpha - \beta}$	27a	$\frac{p(p+\alpha)}{(p+\alpha)^2 + \omega^2}$	$e^{-\alpha t} \cos \omega t$
12	$\frac{p+\alpha}{p+\beta}$	$\frac{\alpha}{\beta} + (1 - \frac{\alpha}{\beta}) e^{-\beta t}$			