Tabel van Laplace getransformeerden

No.	$f(t) = L^{-1}[F(s)]$	$F(s) = L[f(t)] = \int_0^\infty e^{-st} f(t)\,dt$
(ℓ.1)	1	$\frac{1}{s},\ s > 0$
(ℓ.2)	e^{at}	$\frac{1}{s-a},\ s > a$
(ℓ.3)	$\sin at$	$\frac{a}{s^2+a^2},\ s > 0$
(ℓ.4)	$t^n,\ n \in \mathbb{N}$	$\frac{n!}{s^{n+1}},\ s > 0$
(ℓ.5)	$t^p,\ p > -1$	$\frac{\Gamma(p+1)}{s^{p+1}},\ s > 0$
(ℓ.6)	$\cos at$	$\frac{s}{s^2+a^2},\ s > 0$
(ℓ.7)	$\sinh at$	$\frac{a}{s^2-a^2},\ s > \lvert a \rvert$
(ℓ.8)	$\cosh at$	$\frac{s}{s^2-a^2},\ s > \lvert a \rvert$
(ℓ.9)	$e^{at}\sin bt$	$\frac{b}{(s-a)^2+b^2},\ s > a$
(ℓ.10)	$e^{at}\cos bt$	$\frac{s-a}{(s-a)^2+b^2},\ s > a$
(ℓ.11)	$t^n e^{at},\ n \in \mathbb{N}$	$\frac{n!}{(s-a)^{n+1}},\ s > a$
(ℓ.12)	$u_a(t)$	$\frac{e^{-as}}{s},\ s > 0$
(ℓ.13)	$u_a(t) f(t-a)$	$e^{-as} F(s)$
(ℓ.14)	$e^{at} f(t)$	$F(s-a)$
(ℓ.15)	$f(at)$	$\frac{1}{a} F(\frac{s}{a}),\ a > 0$
(ℓ.16)	$\int_0^t f(t-\tau) g(\tau)\,d\tau$	$F(s)G(s)$
(ℓ.17)	$\delta(t-a)$	e^{-as}
(ℓ.18)	$f^{(n)}(t)$	$s^n F(s) - s^{n-1} f(0) - \ldots - f^{(n-1)}(0)$
(ℓ.19)	$(-t)^n f(t)$	$F^{(n)}(s)$

Formuleblad behorend bij Analyse door J.H.J. Almering e.a.

Enkele goniometrische formules

No.

(g.1) $\sin(\alpha+\beta) = \sin\alpha\cos\beta + \cos\alpha\sin\beta.$

(g.2) $\cos(\alpha+\beta) = \cos\alpha\cos\beta - \sin\alpha\sin\beta.$

(g.3) $\sin\alpha + \sin\beta = 2\sin\frac{1}{2}(\alpha+\beta)\cos\frac{1}{2}(\alpha-\beta).$

(g.4) $\cos\alpha + \cos\beta = 2\cos\frac{1}{2}(\alpha+\beta)\cos\frac{1}{2}(\alpha-\beta).$

(g.5) $\cos\alpha - \cos\beta = -2\sin\frac{1}{2}(\alpha+\beta)\sin\frac{1}{2}(\alpha-\beta).$

(g.6) $\sin^2\alpha = \frac{1}{2}(1-\cos 2\alpha).$

(g.7) $\cos^2\alpha = \frac{1}{2}(1+\cos 2\alpha).$

(g.8) $1 + \tan^2\alpha = \frac{1}{\cos^2\alpha}.$

(g.9) $\tan(\alpha+\beta) = \frac{\tan\alpha + \tan\beta}{1 - \tan\alpha\tan\beta}.$

Standaard Taylorontwikkelingen

No.

(s.1) $e^x = 1 + x + \frac{x^2}{2!} + \ldots + \frac{x^n}{n!} + O(x^{n+1}).$

(s.2) $\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \ldots + (-1)^n \frac{x^{2n+1}}{(2n+1)!} + O(x^{2n+3}).$

(s.3) $\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \ldots + (-1)^n \frac{x^{2n}}{(2n)!} + O(x^{2n+2}).$

(s.4) $\frac{1}{1-x} = 1 + x + x^2 + \ldots + x^n + O(x^{n+1}).$

(s.5) $\ln(1+x) = x - \frac{x^2}{2} + \frac{x^3}{3} - \ldots + (-1)^n \frac{x^{n+1}}{n+1} + O(x^{n+2}).$

(s.6) $\arctan x = x - \frac{x^3}{3} + \frac{x^5}{5} - \ldots + (-1)^n \frac{x^{2n+1}}{2n+1} + O(x^{2n+3}).$

(s.7) $(1+x)^a = 1 + ax + \frac{a(a-1)}{2!} x^2 + \ldots + \binom{a}{n} x^n + O(x^{n+1})$, $a \in \mathbb{R}$.

Hierbij is $\binom{a}{n} = \frac{a(a-1)\ldots(a-n+1)}{n!}$ als $n > 0$ en $\binom{a}{0} = 1$.

Integraaltabel

No.		
(t.1)	$\int x^{a}dx$	$= \frac{1}{a+1}x^{a+1} \qquad (a \in \mathbb{R}\backslash\{-1\})$.
(t.2)	$\int \frac{dx}{x}$	$= \ln\lvert x\rvert$.
(t.3)	$\int \frac{f'(x)}{f(x)}dx$	$= \ln\lvert f(x)\rvert$.
(t.4)	$\int e^{x}dx$	$= e^{x}$.
(t.5)	$\int a^{x}dx$	$= \frac{1}{\ln a}a^{x} \qquad (a \in \mathbb{R}^{+}\backslash\{1\})$.
(t.6)	$\int \sin x\,dx$	$= -\cos x$.
(t.7)	$\int \cos x\,dx$	$= \sin x$.
(t.8)	$\int \frac{dx}{\sin^2 x}$	$= -\cot x$.
(t.9)	$\int \frac{dx}{\cos^2 x}$	$= \tan x$.
(t.10)	$\int \tan x\,dx$	$= -\ln\lvert\cos x\rvert$.
(t.11)	$\int \frac{dx}{\sin x}$	$= \ln\lvert\tan\frac{x}{2}\rvert = \ln\frac{1-\cos x}{\lvert\sin x\rvert} = \ln\frac{\lvert\sin x\rvert}{1+\cos x}$.
(t.12)	$\int \frac{dx}{\cos x}$	$= \ln\lvert\tan(\frac{x}{2}+\frac{\pi}{4})\rvert = \ln\frac{1+\sin x}{\lvert\cos x\rvert} = \ln\frac{\lvert\cos x\rvert}{1-\sin x}$.
(t.13)	$\int \sin^p x\cos^q x\,dx \quad (p,q \in \mathbb{N})$	p oneven, stel $\cos x = t$. q oneven, stel $\sin x = t$. p en q even, voer dubbele hoek in met behulp van $\cos^2 x = \frac{1+\cos 2x}{2}$ of $\sin^2 x = \frac{1-\cos 2x}{2}$.
(t.14)	$\int \sin mx\sin nx\,dx$	$= \frac{\sin(m-n)x}{2(m-n)} - \frac{\sin(m+n)x}{2(m+n)} \qquad (m^2 \neq n^2)$.
(t.15)	$\int \cos mx\cos nx\,dx$	$= \frac{\sin(m-n)x}{2(m-n)} + \frac{\sin(m+n)x}{2(m+n)} \qquad (m^2 \neq n^2)$.
(t.16)	$\int \sin mx\cos nx\,dx$	$= -\frac{\cos(m-n)x}{2(m-n)} - \frac{\cos(m+n)x}{2(m+n)} \qquad (m^2 \neq n^2)$.
(t.17)	$\int e^{ax}\sin bx\,dx$	$= \frac{e^{ax}}{a^2+b^2}(a\sin bx - b\cos bx) \qquad (a^2+b^2 \neq 0)$.
(t.18)	$\int e^{ax}\cos bx\,dx$	$= \frac{e^{ax}}{a^2+b^2}(a\cos bx + b\sin bx) \quad (a^2+b^2 \neq 0)$.
(t.19)	$\int \frac{dx}{a^2+b^2x^2}$	$= \frac{1}{ab}\arctan\frac{bx}{a} \qquad (a,b \in \mathbb{R}^{+})$.
(t.20)	$\int \frac{dx}{a^2-b^2x^2}$	$= \frac{1}{2ab}\ln\left\lvert\frac{a+bx}{a-bx}\right\rvert \qquad (a,b \in \mathbb{R}^{+})$.
(t.21)	$\int \frac{dx}{\sqrt{a^2-x^2}}$	$= \arcsin\frac{x}{a} \qquad (a \in \mathbb{R}^{+})$.
(t.22)	$\int \frac{dx}{\sqrt{a^2+x^2}}$	$= \ln(x+\sqrt{x^2+a^2}) \qquad (a \in \mathbb{R}^{+})$.
(t.23)	$\int \frac{dx}{\sqrt{x^2-a^2}}$	$= \ln\lvert x+\sqrt{x^2-a^2}\rvert \qquad (a \in \mathbb{R}^{+})$.
(t.24)	$\int \sqrt{a^2-x^2}\,dx$	$= \frac{x}{2}\sqrt{a^2-x^2} + \frac{a^2}{2}\arcsin\frac{x}{a} \qquad (a \in \mathbb{R}^{+})$.
(t.25)	$\int \sqrt{a^2+x^2}\,dx$	$= \frac{x}{2}\sqrt{a^2+x^2} + \frac{a^2}{2}\ln(x+\sqrt{a^2+x^2}) \qquad (a \in \mathbb{R}^{+})$.
(t.26)	$\int \sinh x\,dx$	$= \cosh x$.
(t.27)	$\int \cosh x\,dx$	$= \sinh x$.
(t.28)	$\int_0^a \sqrt{a^2-x^2}\,dx$	$= \frac{\pi a^2}{4} \qquad (a \in \mathbb{R}^{+})$.
(t.29)	$\int_0^{\frac{\pi}{2}} \sin^p x\,dx = \int_0^{\frac{\pi}{2}} \cos^p x\,dx$	$= \frac{p-1}{p}\frac{p-3}{p-2}\cdots\frac{4}{5}\frac{2}{3}$ voor p = oneven $\geqslant 3$, $= \frac{p-1}{p}\frac{p-3}{p-2}\cdots\frac{3}{4}\frac{1}{2}\frac{\pi}{2}$ voor p = even $\geqslant 2$.
(t.30)	$\int_0^{\infty} e^{-x}x^n\,dx$	$= n! \qquad (n \in \mathbb{N})$.
(t.31)	$\int_0^1 x^n(1-x)^m\,dx$	$= \frac{(n!)(m!)}{(m+n+1)!} \qquad (n,m \in \mathbb{N})$.