

Content L^AT_EX 2_ε

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1 Commands

1.1 Constants

1.1.1

Command	Inline	Display
<code>\I</code>	i	i
<code>\E</code>	e	e
<code>\PI</code>	π	π
<code>\GoldenRatio</code>	φ	φ
<code>\EulerGamma</code>	γ	γ
<code>\Catalan</code>	C	C
<code>\Glaisher</code>	Glaisher	Glaisher
<code>\Khinchin</code>	Khinchin	Khinchin

1.1.2 Symbols

<code>\Infinity</code>	∞	∞
<code>\Indeterminant</code>	i	i
<code>\DirectedInfinity{z}</code>	$z \infty$	$z \infty$
<code>\DirInfty{z}</code>	$z \infty$	$z \infty$
<code>\ComplexInfinity</code>	$\tilde{\infty}$	$\tilde{\infty}$
<code>\CInfty</code>	$\tilde{\infty}$	$\tilde{\infty}$

1.2

1.2.1 Exponential and Logarithmic Functions

Command	Inline	Display
<code>\Exp{5x}</code>	$\exp(5x)$	$\exp(5x)$
<code>\Style{ExpParen=b}</code>		
<code>\Exp{5x}</code>	$\exp[5x]$	$\exp[5x]$
<code>\Style{ExpParen=br}</code>		
<code>\Exp{5x}</code>	$\exp\{5x\}$	$\exp\{5x\}$
<code>\Log{5}</code>	$\ln 5$	$\ln 5$
<code>\Log[10]{5}</code>	$\log 5$	$\log 5$
<code>\Log[4]{5}</code>	$\log_4 5$	$\log_4 5$
<code>\Style{LogBaseESymb=log}</code>		
<code>\Log{5}</code>	$\log 5$	$\log 5$
<code>\Log[10]{5}</code>	$\log_{10} 5$	$\log_{10} 5$
<code>\Log[4]{5}</code>	$\log_4 5$	$\log_4 5$
<code>\Style{LogShowBase=always}</code>		
<code>\Log{5}</code>	$\log_e 5$	$\log_e 5$
<code>\Log[10]{5}</code>	$\log_{10} 5$	$\log_{10} 5$
<code>\Log[4]{5}</code>	$\log_4 5$	$\log_4 5$
<code>\Style{LogShowBase=at will}</code>		
<code>\Log{5}</code>	$\ln 5$	$\ln 5$
<code>\Log[10]{5}</code>	$\log 5$	$\log 5$
<code>\Log[4]{5}</code>	$\log_4 5$	$\log_4 5$
<code>\Style{LogParen=p}</code>		
<code>\Log[4]{5}</code>	$\log_4(5)$	$\log_4(5)$

1.2.2 Trigonometric Functions

<code>\Sin{x}</code>	$\sin(x)$	$\sin(x)$
<code>\Cos{x}</code>	$\cos(x)$	$\cos(x)$
<code>\Tan{x}</code>	$\tan(x)$	$\tan(x)$
<code>\Csc{x}</code>	$\csc(x)$	$\csc(x)$
<code>\Sec{x}</code>	$\sec(x)$	$\sec(x)$
<code>\Cot{x}</code>	$\cot(x)$	$\cot(x)$

1.2.3 Inverse Trigonometric Functions

`\Style{ArcTrig=inverse}` (default)

<code>\ArcSin{x}</code>	$\sin^{-1}(x)$	$\sin^{-1}(x)$
<code>\ArcCos{x}</code>	$\cos^{-1}(x)$	$\cos^{-1}(x)$
<code>\ArcTan{x}</code>	$\tan^{-1}(x)$	$\tan^{-1}(x)$

`\Style{ArcTrig=arc}`

<code>\ArcSin{x}</code>	$\arcsin(x)$	$\arcsin(x)$
<code>\ArcCos{x}</code>	$\arccos(x)$	$\arccos(x)$
<code>\ArcTan{x}</code>	$\arctan(x)$	$\arctan(x)$

<code>\ArcCsc{x}</code>	$\csc^{-1}(x)$	$\csc^{-1}(x)$
<code>\ArcSec{x}</code>	$\sec^{-1}(x)$	$\sec^{-1}(x)$
<code>\ArcCot{x}</code>	$\cot^{-1}(x)$	$\cot^{-1}(x)$

1.2.4 Hyberbolic Functions

<code>\Sinh{x}</code>	$\sinh(x)$	$\sinh(x)$
<code>\Cosh{x}</code>	$\cosh(x)$	$\cosh(x)$
<code>\Tanh{x}</code>	$\tanh(x)$	$\tanh(x)$
<code>\Csch{x}</code>	$\operatorname{csch}(x)$	$\operatorname{csch}(x)$
<code>\Sech{x}</code>	$\operatorname{sech}(x)$	$\operatorname{sech}(x)$
<code>\Coth{x}</code>	$\operatorname{coth}(x)$	$\operatorname{coth}(x)$

1.2.5 Inverse Hyberbolic Functions

<code>\ArcSinh{x}</code>	$\sinh^{-1}(x)$	$\sinh^{-1}(x)$
<code>\ArcCosh{x}</code>	$\cosh^{-1}(x)$	$\cosh^{-1}(x)$
<code>\ArcTanh{x}</code>	$\tanh^{-1}(x)$	$\tanh^{-1}(x)$
<code>\ArcCsch{x}</code>	$\operatorname{csch}^{-1}(x)$	$\operatorname{csch}^{-1}(x)$
<code>\ArcSech{x}</code>	$\operatorname{sech}^{-1}(x)$	$\operatorname{sech}^{-1}(x)$
<code>\ArcCoth{x}</code>	$\operatorname{coth}^{-1}(x)$	$\operatorname{coth}^{-1}(x)$

1.2.6 Product Logarithms

Command	Inline	Display
<code>\LambertW{z}</code>	$W(z)$	$W(z)$
<code>\ProductLog{z}</code>	$W(z)$	$W(z)$
<code>\LambertW{k,z}</code>	$W_k(z)$	$W_k(z)$
<code>\ProductLog{k,z}</code>	$W_k(z)$	$W_k(z)$

1.2.7 Max and Min

<code>\Max{1,2,3,4,5}</code>	$\max(1, 2, 3, 4, 5)$	$\max(1, 2, 3, 4, 5)$
<code>\Min{1,2,3,4,5}</code>	$\min(1, 2, 3, 4, 5)$	$\min(1, 2, 3, 4, 5)$

1.3 Bessel, Airy, and Struve Functions

1.3.1 Bessel

Bessel functions can be ‘renamed’ with the `\Style` tag. For example, `\Style{BesselYSymb=N}` yields $N_\nu(x)$

Command	Inline	Display
<code>\BesselJ{0}{x}</code>	$J_0(x)$	$J_0(x)$
<code>\BesselY{0}{x}</code>	$Y_0(x)$	$Y_0(x)$
<code>\BesselI{0}{x}</code>	$I_0(x)$	$I_0(x)$
<code>\BesselK{0}{x}</code>	$K_0(x)$	$K_0(x)$

1.3.2 Airy

<code>\AiryAi{x}</code>	$Ai(x)$	$Ai(x)$
<code>\AiryBi{x}</code>	$Bi(x)$	$Bi(x)$

1.3.3 Struve

<code>\StruveH{\nu}{x}</code>	$H_\nu(x)$	$H_\nu(x)$
<code>\StruveL{\nu}{x}</code>	$L_\nu(x)$	$L_\nu(x)$

1.4 Integer Functions

Command	Inline	Display
<code>\Floor{x}</code>	$\lfloor x \rfloor$	$\lfloor x \rfloor$
<code>\Ceiling{x}</code>	$\lceil x \rceil$	$\lceil x \rceil$
<code>\Round{x}</code>	$\lceil x \rceil$	$\lceil x \rceil$

1.4.1

<code>\iPart{x}</code>	$\text{int}(x)$	$\text{int}(x)$
<code>\IntegerPart{x}</code>	$\text{int}(x)$	$\text{int}(x)$
<code>\fPart{x}</code>	$\text{frac}(x)$	$\text{frac}(x)$
<code>\FractionalPart{x}</code>	$\text{frac}(x)$	$\text{frac}(x)$

1.4.2

<code>\Style{ModDisplay=mod}</code> (default)		
<code>\Mod{m}{n}</code>	$m \bmod n$	$m \bmod n$
<code>\Style{ModDisplay=bmod}</code>		
<code>\Mod{m}{n}</code>	$m \bmod n$	$m \bmod n$
<code>\Style{ModDisplay=pmod}</code>		
<code>\Mod{m}{n}</code>	$m \pmod n$	$m \pmod n$
<code>\Style{ModDisplay=pod}</code>		
<code>\Mod{m}{n}</code>	$m (n)$	$m (n)$
<code>\Quotient{m}{n}</code>	$\text{quotient}(m, n)$	$\text{quotient}(m, n)$
<code>\GCD{m, n}</code>	$\text{gcd}(m, n)$	$\text{gcd}(m, n)$
<code>\ExtendedGCD{m}{n}</code>	$\text{egcd}(m, n)$	$\text{egcd}(m, n)$
<code>\EGCD{m}{n}</code>	$\text{egcd}(m, n)$	$\text{egcd}(m, n)$
<code>\LCM{m, n}</code>	$\text{lcm}(m, n)$	$\text{lcm}(m, n)$

1.4.3

<code>\Fibonacci{\nu}</code>	F_ν	F_ν
<code>\Euler{m}</code>	E_m	E_m
<code>\Bernoulli{m}</code>	B_m	B_m
<code>\StirlingSOne{n}{m}</code>	$S_n^{(m)}$	$S_n^{(m)}$
<code>\StirlingSTwo{n}{m}</code>	$\mathcal{S}_n^{(m)}$	$\mathcal{S}_n^{(m)}$
<code>\PartitionsP{n}</code>	$p(n)$	$p(n)$
<code>\PartitionsQ{n}</code>	$q(n)$	$q(n)$

1.4.4

<code>\DiscreteDelta{n, m}</code>	$\delta(n, m)$	$\delta(n, m)$
<code>\KroneckerDelta{n, m}</code>	δ^{nm}	δ^{nm}
<code>\KroneckerDelta[d]{n, m}</code>	δ_{nm}	δ_{nm}
<code>\LeviCivita{i, j, k}</code>	ϵ^{ijk}	ϵ^{ijk}
<code>\LeviCivita[d]{i, j, k}</code>	ϵ_{ijk}	ϵ_{ijk}
<code>\Signature{i, j, k}</code>	ϵ^{ijk}	ϵ^{ijk}
<code>\Style{LeviCivitaIndicies=up}</code>		
<code>\LeviCivita[d]{i, j, k}</code>	ϵ^{ijk}	ϵ^{ijk}
<code>\Style{LeviCivitaIndicies=local}</code>		
<code>\LeviCivita[d]{i, j, k}</code>	ϵ_{ijk}	ϵ_{ijk}
<code>\Style{LeviCivitaUseComma=true}</code>		
<code>\LeviCivita[d]{i, j, k}</code>	$\epsilon_{i,j,k}$	$\epsilon_{i,j,k}$

1.5 Polynomials

Polynomials can be ‘renamed’ with the `\Style` command:

```
\Style{ <Polynomial command> \Symb=<Symbol> }
```

As in `\Style{HermiteHSymb=h, LegendrePSymb=p} $\HermiteH{n}{x}$`
 `$\LegendreP{n,x}$` yielding: $h_n(x) p_n(x)$

Command	Inline	Display
<code>\HermiteH{n}{x}</code>	$H_n(x)$	$H_n(x)$
<code>\LaguerreL{n,x}</code>	$L_n(x)$	$L_n(x)$
<code>\LegendreP{n,x}</code>	$P_n(x)$	$P_n(x)$
<code>\ChebyshevT{n}{x}</code>	$T_n(x)$	$T_n(x)$
<code>\ChebyshevU{n}{x}</code>	$U_n(x)$	$U_n(x)$
<code>\JacobiP{n}{a}{b}{x}</code>	$P_n^{(a,b)}(x)$	$P_n^{(a,b)}(x)$
<code>\AssocLegendreP{\ell}{m}{x}</code>	$P_\ell^m(x)$	$P_\ell^m(x)$
<code>\AssocLegendreQ{\ell}{m}{x}</code>	$Q_\ell^m(x)$	$Q_\ell^m(x)$
<code>\LaguerreL{n,\lambda,x}</code>	$L_n^\lambda(x)$	$L_n^\lambda(x)$
<code>\GegenbauerC{n}{\lambda}{x}</code>	$C_n^\lambda(x)$	$C_n^\lambda(x)$
<code>\SphericalHarmY{n}{m}{\theta}{\phi}</code>	$Y_n^m(\theta, \phi)$	$Y_n^m(\theta, \phi)$
<code>\CyclotomicC{n}{x}</code>	$C_n(x)$	$C_n(x)$
<code>\FibonacciF{n}{x}</code>	$F_n(x)$	$F_n(x)$
<code>\EulerE{n}{x}</code>	$E_n(x)$	$E_n(x)$
<code>\BernoulliB{n}{x}</code>	$B_n(x)$	$B_n(x)$

1.6 Gamma, Beta, and Error Functions

1.6.1 Factorials

Command	Inline	Display
<code>\Factorial{n}</code>	$n!$	$n!$
<code>\DblFactorial{n}</code>	$n!!$	$n!!$
<code>\Binomial{n}{k}</code>	$\binom{n}{k}$	$\binom{n}{k}$
<code>\Multinomial{1,2,3,4}</code>	$(10; 1, 2, 3, 4)$	$(10; 1, 2, 3, 4)$
<code>\Multinomial{n_1, n_2, \ldots, n_m}</code>		
Inline:	$(n_1 + n_2 + \dots + n_m; n_1, n_2, \dots, n_m)$	
Display:	$(n_1 + n_2 + \dots + n_m; n_1, n_2, \dots, n_m)$	

1.6.2 Gamma Functions

<code>\GammaFunc{x}</code>	$\Gamma(x)$	$\Gamma(x)$
<code>\IncGamma{a}{x}</code>	$\Gamma(a, x)$	$\Gamma(a, x)$
<code>\GenIncGamma{a}{x}{y}</code>	$\Gamma(a, x, y)$	$\Gamma(a, x, y)$
<code>\RegIncGamma{a}{x}</code>	$Q(a, x)$	$Q(a, x)$
<code>\RegIncGammaInv{a}{x}</code>	$Q^{-1}(a, x)$	$Q^{-1}(a, x)$
<code>\GenRegIncGamma{a}{x}{y}</code>	$Q(a, x, y)$	$Q(a, x, y)$
<code>\GenRegIncGammaInv{a}{x}{y}</code>	$Q^{-1}(a, x, y)$	$Q^{-1}(a, x, y)$
<code>\Pochhammer{a}{n}</code>	$(a)_n$	$(a)_n$
<code>\LogGamma{x}</code>	$\log\Gamma(x)$	$\log\Gamma(x)$

1.6.3 Derivatives of Gamma Functions

<code>\DiGamma{x}</code>	$F(x)$	$F(x)$
<code>\PolyGamma{\nu}{x}</code>	$\psi^{(\nu)}(x)$	$\psi^{(\nu)}(x)$
<code>\HarmNum{x}</code>	H_x	H_x
<code>\HarmNum{x, r}</code>	$H_x^{(r)}$	$H_x^{(r)}$
<code>\Beta{a, b}</code>	$B(a, b)$	$B(a, b)$
<code>\IncBeta{z}{a}{b}</code>	$B_z(a, b)$	$B_z(a, b)$
<code>\GenIncBeta{x}{y}{a}{b}</code>	$B_{(x,y)}(a, b)$	$B_{(x,y)}(a, b)$
<code>\RegIncBeta{z}{a}{b}</code>	$I_z(a, b)$	$I_z(a, b)$
<code>\RegIncBetaInv{z}{a}{b}</code>	$I_z^{-1}(a, b)$	$I_z^{-1}(a, b)$
<code>\GenRegIncBeta{x}{y}{a}{b}</code>	$B_{(x,y)}(a, b)$	$B_{(x,y)}(a, b)$
<code>\GenRegIncBetaInv{x}{y}{a}{b}</code>	$I_{(x,y)}^{-1}(a, b)$	$I_{(x,y)}^{-1}(a, b)$

1.6.4 Error Functions

<code>\Erf{x}</code>	$\operatorname{erf}(x)$	$\operatorname{erf}(x)$
<code>\InvErf{x}</code>	$\operatorname{erf}^{-1}(x)$	$\operatorname{erf}^{-1}(x)$
<code>\GenErf{x}y</code>	$\operatorname{erf}(x, y)$	$\operatorname{erf}(x, y)$
<code>\GenErfInv{x}{y}</code>	$\operatorname{erf}^{-1}(x, y)$	$\operatorname{erf}^{-1}(x, y)$
<code>\Erfc{x}</code>	$\operatorname{erfc}(x)$	$\operatorname{erfc}(x)$
<code>\ErfcInv{x}</code>	$\operatorname{erfc}^{-1}(x)$	$\operatorname{erfc}^{-1}(x)$
<code>\Erfi{x}</code>	$\operatorname{erfi}(x)$	$\operatorname{erfi}(x)$

1.6.5 Fresnel Integrals

<code>\FresnelS{x}</code>	$S(x)$	$S(x)$
<code>\FresnelC{x}</code>	$C(x)$	$C(x)$

1.6.6 Exponential Integrals

<code>\ExpIntE{\nu}{x}</code>	$E_\nu(x)$	$E_\nu(x)$
<code>\ExpIntEi{x}</code>	$Ei(x)$	$Ei(x)$
<code>\LogInt{x}</code>	$li(x)$	$li(x)$
<code>\SinInt{x}</code>	$Si(x)$	$Si(x)$
<code>\CosInt{x}</code>	$Ci(x)$	$Ci(x)$
<code>\SinhInt{x}</code>	$Shi(x)$	$Shi(x)$
<code>\CoshInt{x}</code>	$Chi(x)$	$Chi(x)$

1.7 Hypergeometric Functions

1.7.1 Hypergeometric Function

$$\backslash\text{Hypergeometric}\{0\}\{0\}\{\}\{\}\{x\}$$
$${}_0F_0(;;x) \quad {}_0F_0(;;x)$$

$$\backslash\text{Hypergeometric}\{0\}\{1\}\{\}\{b\}\{x\}$$
$${}_0F_1(;b;x) \quad {}_0F_1(;b;x)$$

$$\backslash\text{Hypergeometric}\{1\}\{1\}\{a\}\{b\}\{x\}$$
$${}_1F_1(a;b;x) \quad {}_1F_1(a;b;x)$$

$$\backslash\text{Hypergeometric}\{1\}\{1\}\{1\}\{1\}\{x\}$$
$${}_1F_1(1;1;x) \quad {}_1F_1(1;1;x)$$

$$\backslash\text{Hypergeometric}\{3\}\{5\}\{a\}\{b\}\{x\}$$
$${}_3F_5(a_1, a_2, a_3; b_1, b_2, b_3, b_4, b_5; x) \quad {}_3F_5(a_1, a_2, a_3; b_1, b_2, b_3, b_4, b_5; x)$$

$$\backslash\text{Hypergeometric}\{3\}\{5\}\{1,2,3\}\{1,2,3,4,5\}\{x\}$$
$${}_3F_5(1, 2, 3; 1, 2, 3, 4, 5; x) \quad {}_3F_5(1, 2, 3; 1, 2, 3, 4, 5; x)$$

$$\backslash\text{Hypergeometric}\{p\}\{5\}\{a\}\{b\}\{x\}$$
$${}_pF_5(a_1, \dots, a_p; b_1, b_2, b_3, b_4, b_5; x) \quad {}_pF_5(a_1, \dots, a_p; b_1, b_2, b_3, b_4, b_5; x)$$

$$\backslash\text{Hypergeometric}\{p\}\{3\}\{a\}\{1,2,3\}\{x\}$$
$${}_pF_3(a_1, \dots, a_p; 1, 2, 3; x) \quad {}_pF_3(a_1, \dots, a_p; 1, 2, 3; x)$$

$$\backslash\text{Hypergeometric}\{p\}\{q\}\{a\}\{b\}\{x\}$$
$${}_pF_q(a_1, \dots, a_p; b_1, \dots, b_q; x) \quad {}_pF_q(a_1, \dots, a_p; b_1, \dots, b_q; x)$$

1.7.2 Regularized Hypergeometric Function

$$\backslash\text{RegHypergeometric}\{0\}\{0\}\{\}\{\}\{x\}$$

$${}_0\tilde{F}_0(;;x) \quad {}_0\tilde{F}_0(;;x)$$

$$\backslash\text{RegHypergeometric}\{0\}\{1\}\{\}\{b\}\{x\}$$

$${}_0\tilde{F}_1(;b;x) \quad {}_0\tilde{F}_1(;b;x)$$

$$\backslash\text{RegHypergeometric}\{3\}\{5\}\{a\}\{b\}\{x\}$$

$${}_3\tilde{F}_5(a_1, a_2, a_3; b_1, b_2, b_3, b_4, b_5; x) \quad {}_3\tilde{F}_5(a_1, a_2, a_3; b_1, b_2, b_3, b_4, b_5; x)$$

$$\backslash\text{RegHypergeometric}\{3\}\{5\}\{1,2,3\}\{1,2,3,4,5\}\{x\}$$

$${}_3\tilde{F}_5(1, 2, 3; 1, 2, 3, 4, 5; x) \quad {}_3\tilde{F}_5(1, 2, 3; 1, 2, 3, 4, 5; x)$$

$$\backslash\text{RegHypergeometric}\{p\}\{5\}\{a\}\{b\}\{x\}$$

$${}_p\tilde{F}_5(a_1, \dots, a_p; b_1, b_2, b_3, b_4, b_5; x) \quad {}_p\tilde{F}_5(a_1, \dots, a_p; b_1, b_2, b_3, b_4, b_5; x)$$

$$\backslash\text{RegHypergeometric}\{p\}\{3\}\{a\}\{1,2,3\}\{x\}$$

$${}_p\tilde{F}_3(a_1, \dots, a_p; 1, 2, 3; x) \quad {}_p\tilde{F}_3(a_1, \dots, a_p; 1, 2, 3; x)$$

$$\backslash\text{RegHypergeometric}\{p\}\{q\}\{a\}\{b\}\{x\}$$

$${}_p\tilde{F}_q(a_1, \dots, a_p; b_1, \dots, b_q; x) \quad {}_p\tilde{F}_q(a_1, \dots, a_p; b_1, \dots, b_q; x)$$

1.7.3 Meijer G-Function

$$\backslash\text{MeijerG}[a,b]\{n\}\{p\}\{m\}\{q\}\{x\}$$

$$G_{p,q}^{m,n} \left(x \left| \begin{matrix} a_1, \dots, a_n, a_{n+1}, \dots, a_p \\ b_1, \dots, b_m, b_{m+1}, \dots, b_q \end{matrix} \right. \right) \quad G_{p,q}^{m,n} \left(x \left| \begin{matrix} a_1, \dots, a_n, a_{n+1}, \dots, a_p \\ b_1, \dots, b_m, b_{m+1}, \dots, b_q \end{matrix} \right. \right)$$

$$\backslash\text{MeijerG}\{1, 2, 3, 4\}\{5, 6\}\{3, 6, 9\}\{12, 15, 18, 21, 24\}\{x\}$$

$$G_{6,8}^{3,4}\left(x \left| \begin{array}{c} 1, 2, 3, 4, 5, 6 \\ 3, 6, 9, 12, 15, 18, 21, 24 \end{array} \right. \right) \quad G_{6,8}^{3,4}\left(x \left| \begin{array}{c} 1, 2, 3, 4, 5, 6 \\ 3, 6, 9, 12, 15, 18, 21, 24 \end{array} \right. \right)$$

$$\backslash\text{MeijerG}[a, b]\{4\}\{6\}\{3\}\{8\}\{x\}$$

$$G_{6,8}^{3,4}\left(x \left| \begin{array}{c} a_1, a_2, a_3, a_4, a_5, a_6 \\ b_1, b_2, b_3, b_4, b_5, b_6, b_7, b_8 \end{array} \right. \right) \quad G_{6,8}^{3,4}\left(x \left| \begin{array}{c} a_1, a_2, a_3, a_4, a_5, a_6 \\ b_1, b_2, b_3, b_4, b_5, b_6, b_7, b_8 \end{array} \right. \right)$$

$$\backslash\text{MeijerG}[a, b]\{4\}\{p\}\{3\}\{8\}\{x\}$$

$$G_{p,8}^{3,4}\left(x \left| \begin{array}{c} a_1, a_2, a_3, a_4, a_5, \dots, a_p \\ b_1, b_2, b_3, b_4, b_5, b_6, b_7, b_8 \end{array} \right. \right) \quad G_{p,8}^{3,4}\left(x \left| \begin{array}{c} a_1, a_2, a_3, a_4, a_5, \dots, a_p \\ b_1, b_2, b_3, b_4, b_5, b_6, b_7, b_8 \end{array} \right. \right)$$

$$\backslash\text{MeijerG}[a, b]\{n\}\{p\}\{3\}\{8\}\{x\}$$

$$G_{p,8}^{3,n}\left(x \left| \begin{array}{c} a_1, \dots, a_n, a_{n+1}, \dots, a_p \\ b_1, b_2, b_3, b_4, b_5, b_6, b_7, b_8 \end{array} \right. \right) \quad G_{p,8}^{3,n}\left(x \left| \begin{array}{c} a_1, \dots, a_n, a_{n+1}, \dots, a_p \\ b_1, b_2, b_3, b_4, b_5, b_6, b_7, b_8 \end{array} \right. \right)$$

$$\backslash\text{MeijerG}[a]\{4\}\{6\}\{3, 6, 9\}\{12, 15, 18, 21, 24\}\{x\}$$

$$G_{6,8}^{3,4}\left(x \left| \begin{array}{c} a_1, a_2, a_3, a_4, a_5, a_6 \\ 3, 6, 9, 12, 15, 18, 21, 24 \end{array} \right. \right) \quad G_{6,8}^{3,4}\left(x \left| \begin{array}{c} a_1, a_2, a_3, a_4, a_5, a_6 \\ 3, 6, 9, 12, 15, 18, 21, 24 \end{array} \right. \right)$$

$$\backslash\text{MeijerG}[a]\{4\}\{p\}\{3, 6, 9\}\{12, 15, 18, 21, 24\}\{x\}$$

$$G_{p,8}^{3,4}\left(x \left| \begin{array}{c} a_1, a_2, a_3, a_4, a_5, \dots, a_p \\ 3, 6, 9, 12, 15, 18, 21, 24 \end{array} \right. \right) \quad G_{p,8}^{3,4}\left(x \left| \begin{array}{c} a_1, a_2, a_3, a_4, a_5, \dots, a_p \\ 3, 6, 9, 12, 15, 18, 21, 24 \end{array} \right. \right)$$

$$\backslash\text{MeijerG}[a]\{n\}\{6\}\{3, 6, 9\}\{12, 15, 18, 21, 24\}\{x\}$$

$$G_{6,8}^{3,n}\left(x \left| \begin{array}{c} a_1, \dots, a_n, a_{n+1}, \dots, a_6 \\ 3, 6, 9, 12, 15, 18, 21, 24 \end{array} \right. \right) \quad G_{6,8}^{3,n}\left(x \left| \begin{array}{c} a_1, \dots, a_n, a_{n+1}, \dots, a_6 \\ 3, 6, 9, 12, 15, 18, 21, 24 \end{array} \right. \right)$$

$$\backslash\text{MeijerG}[a]\{n\}\{p\}\{3, 6, 9\}\{12, 15, 18, 21, 24\}\{x\}$$

$$G_{p,8}^{3,n}\left(x \left| \begin{array}{c} a_1, \dots, a_n, a_{n+1}, \dots, a_p \\ 3, 6, 9, 12, 15, 18, 21, 24 \end{array} \right. \right) \quad G_{p,8}^{3,n}\left(x \left| \begin{array}{c} a_1, \dots, a_n, a_{n+1}, \dots, a_p \\ 3, 6, 9, 12, 15, 18, 21, 24 \end{array} \right. \right)$$

$$\backslash\text{MeijerG}[,b]\{1,2,3,4\}\{5,6\}\{3\}\{8\}\{x\}$$

$$G_{6,8}^{3,4}\left(x \left| \begin{array}{c} 1,2,3,4,5,6 \\ b_1,b_2,b_3,b_4,b_5,b_6,b_7,b_8 \end{array} \right. \right) \quad G_{6,8}^{3,4}\left(x \left| \begin{array}{c} 1,2,3,4,5,6 \\ b_1,b_2,b_3,b_4,b_5,b_6,b_7,b_8 \end{array} \right. \right)$$

$$\backslash\text{MeijerG}[,b]\{1,2,3,4\}\{5,6\}\{3\}\{q\}\{x\}$$

$$G_{6,q}^{3,4}\left(x \left| \begin{array}{c} 1,2,3,4,5,6 \\ b_1,b_2,b_3,b_4,\dots,b_q \end{array} \right. \right) \quad G_{6,q}^{3,4}\left(x \left| \begin{array}{c} 1,2,3,4,5,6 \\ b_1,b_2,b_3,b_4,\dots,b_q \end{array} \right. \right)$$

$$\backslash\text{MeijerG}[,b]\{1,2,3,4\}\{5,6\}\{m\}\{q\}\{x\}$$

$$G_{6,q}^{m,4}\left(x \left| \begin{array}{c} 1,2,3,4,5,6 \\ b_1,\dots,b_m,b_{m+1},\dots,b_q \end{array} \right. \right) \quad G_{6,q}^{m,4}\left(x \left| \begin{array}{c} 1,2,3,4,5,6 \\ b_1,\dots,b_m,b_{m+1},\dots,b_q \end{array} \right. \right)$$

$$\backslash\text{MeijerG}[a,b]\{n\}\{p\}\{m\}\{q\}\{x,r\}$$

$$G_{p,q}^{m,n}\left(x,r \left| \begin{array}{c} a_1,\dots,a_n,a_{n+1},\dots,a_p \\ b_1,\dots,b_m,b_{m+1},\dots,b_q \end{array} \right. \right) \quad G_{p,q}^{m,n}\left(x,r \left| \begin{array}{c} a_1,\dots,a_n,a_{n+1},\dots,a_p \\ b_1,\dots,b_m,b_{m+1},\dots,b_q \end{array} \right. \right)$$

1.7.4 Appell Hypergeometric Function F_1

$$\backslash\text{AppellF0ne}\{a\}\{b_1,b_2\}\{c\}\{x,y\}$$

$$F_1(a; b_1, b_2; c; x, y) \quad F_1(a; b_1, b_2; c; x, y)$$

1.7.5 Tricomi Confluent Hypergeometric Function

Command	Inline	Display
$\backslash\text{HypergeometricU}\{a\}\{b\}\{x\}$	$U(a, b, x)$	$U(a, b, x)$

1.7.6 Angular Momentum Functions

$$\backslash\text{ClebschGordon}\{j_1,m_1\}\{j_2,m_2\}\{j,m\}$$

$$\langle j_1, j_2; m_1, m_2 | j_1, j_2; j, m \rangle \quad \langle j_1, j_2; m_1, m_2 | j_1, j_2; j, m \rangle$$

$$\backslash\text{SixJSymbol}\{j_1,j_2,j_3\}\{j_4,j_5,j_6\}$$

$$\begin{Bmatrix} j_1 & j_2 & j_3 \\ j_4 & j_5 & j_6 \end{Bmatrix} \quad \begin{Bmatrix} j_1 & j_2 & j_3 \\ j_4 & j_5 & j_6 \end{Bmatrix}$$

$$\backslash\text{ThreeJSymbol}\{j_1,m_1\}\{j_2,m_2\}\{j_3,m_3\}$$

$$\begin{pmatrix} j_1 & j_2 & j_3 \\ m_1 & m_2 & m_3 \end{pmatrix} \quad \begin{pmatrix} j_1 & j_2 & j_3 \\ m_1 & m_2 & m_3 \end{pmatrix}$$

1.8 Elliptic Integrals

1.8.1 Complete Elliptic Integrals

Command	Inline	Display
<code>\EllipticK{x}</code>	$K(x)$	$K(x)$
<code>\EllipticE{x}</code>	$E(x)$	$E(x)$
<code>\EllipticPi{n,m}</code>	$\Pi(n m)$	$\Pi(n m)$

1.8.2 Incomplete Elliptic Integrals

Command	Inline	Display
<code>\IncEllipticF{x}{m}</code>	$F(x m)$	$F(x m)$
<code>\IncEllipticE{x}{m}</code>	$E(x m)$	$E(x m)$
<code>\IncEllipticPi{n}{x}{m}</code>	$\Pi(n; x m)$	$\Pi(n; x m)$
<code>\JacobiZeta{x}{m}</code>	$Z(x m)$	$Z(x m)$

1.9 Elliptic Functions

1.9.1 Jacobi Theta Functions

Command	Inline	Display
<code>\EllipticTheta{1}{x}{q}</code>	$\vartheta_1(x, q)$	$\vartheta_1(x, q)$
<code>\JacobiTheta{1}{x}{q}</code>	$\vartheta_1(x, q)$	$\vartheta_1(x, q)$

1.9.2 Neville Theta Functions

Command	Inline	Display
<code>\NevilleThetaC{x}{m}</code>	$\vartheta_c(x m)$	$\vartheta_c(x m)$
<code>\NevilleThetaD{x}{m}</code>	$\vartheta_d(x m)$	$\vartheta_d(x m)$
<code>\NevilleThetaN{x}{m}</code>	$\vartheta_n(x m)$	$\vartheta_n(x m)$
<code>\NevilleThetaS{x}{m}</code>	$\vartheta_s(x m)$	$\vartheta_s(x m)$

1.9.3 Weierstrass Functions

`\WeierstrassP{z}{g_2,g_3}`
 $\wp(z; g_2, g_3)$ $\wp(z; g_2, g_3)$

`\WeierstrassPInv{z}{g_2,g_3}`
 $\wp^{-1}(z; g_2, g_3)$ $\wp^{-1}(z; g_2, g_3)$

`\WeierstrassPGenInv{z_1}{z_2}{g_2}{g_3}`
 $\wp^{-1}(z_1, z_2; g_2, g_3)$ $\wp^{-1}(z_1, z_2; g_2, g_3)$

`\WeierstrassSigma{z}{g_2,g_3}`
 $\sigma(z; g_2, g_3)$ $\sigma(z; g_2, g_3)$

`\AssocWeierstrassSigma{n}{z}{g_2}{g_3}`
`\WeiSigma{n,z}{g_2,g_3}`
 $\sigma_n(z; g_2, g_3)$ $\sigma_n(z; g_2, g_3)$

`\WeierstrassZeta{z}{g_2,g_3}`
 $\zeta(z; g_2, g_3)$ $\zeta(z; g_2, g_3)$

`\WeierstrassHalfPeriods{g_2,g_3}`
 $\{\omega_1(g_2, g_3), \omega_3(g_2, g_3)\}$ $\{\omega_1(g_2, g_3), \omega_3(g_2, g_3)\}$

`\WeierstrassInvariants{\omega_1,\omega_3}`
 $\{g_2(\omega_1, \omega_3), g_3(\omega_1, \omega_3)\}$ $\{g_2(\omega_1, \omega_3), g_3(\omega_1, \omega_3)\}$

`\Style{WeierstrassPHalfPeriodValuesDisplay=sf}` (Default)
`\WeierstrassPHalfPeriodValues{g_2,g_3}`
 $\{e_1, e_2, e_3\}$ $\{e_1, e_2, e_3\}$

`\Style{WeierstrassPHalfPeriodValuesDisplay=ff}`
`\WeierstrassPHalfPeriodValues{g_2,g_3}`
 $\{e_1(g_2, g_3), e_2(g_2, g_3), e_3(g_2, g_3)\}$ $\{e_1(g_2, g_3), e_2(g_2, g_3), e_3(g_2, g_3)\}$

`\Style{WeierstrassZetaHalfPeriodValuesDisplay=sf}` (Default)
`\WeierstrassZetaHalfPeriodValues{g_2,g_3}`
 $\{\eta_1, \eta_2, \eta_3\}$ $\{\eta_1, \eta_2, \eta_3\}$

`\Style{WeierstrassZetaHalfPeriodValuesDisplay=ff}`
`\WeierstrassZetaHalfPeriodValues{g_2,g_3}`
 $\{\eta_1(g_2, g_3), \eta_2(g_2, g_3), \eta_3(g_2, g_3)\}$ $\{\eta_1(g_2, g_3), \eta_2(g_2, g_3), \eta_3(g_2, g_3)\}$

1.9.4 Jacobi Functions

Command	Inline	Display
<code>\JacobiAmplitude{z}{m}</code>	$\operatorname{am}(z m)$	$\operatorname{am}(z m)$
<code>\JacobiCD{z}{m}</code>	$\operatorname{cd}(z m)$	$\operatorname{cd}(z m)$
<code>\JacobiCDInv{z}{m}</code>	$\operatorname{cd}^{-1}(z m)$	$\operatorname{cd}^{-1}(z m)$
<code>\JacobiCN{z}{m}</code>	$\operatorname{cn}(z m)$	$\operatorname{cn}(z m)$
<code>\JacobiCNInv{z}{m}</code>	$\operatorname{cn}^{-1}(z m)$	$\operatorname{cn}^{-1}(z m)$
<code>\JacobiCS{z}{m}</code>	$\operatorname{cs}(z m)$	$\operatorname{cs}(z m)$
<code>\JacobiCSInv{z}{m}</code>	$\operatorname{cs}^{-1}(z m)$	$\operatorname{cs}^{-1}(z m)$
<code>\JacobiDC{z}{m}</code>	$\operatorname{dc}(z m)$	$\operatorname{dc}(z m)$
<code>\JacobiDCInv{z}{m}</code>	$\operatorname{dc}^{-1}(z m)$	$\operatorname{dc}^{-1}(z m)$
<code>\JacobiDN{z}{m}</code>	$\operatorname{dn}(z m)$	$\operatorname{dn}(z m)$
<code>\JacobiDNInv{z}{m}</code>	$\operatorname{dn}^{-1}(z m)$	$\operatorname{dn}^{-1}(z m)$
<code>\JacobiDS{z}{m}</code>	$\operatorname{ds}(z m)$	$\operatorname{ds}(z m)$
<code>\JacobiDSInv{z}{m}</code>	$\operatorname{ds}^{-1}(z m)$	$\operatorname{ds}^{-1}(z m)$
<code>\JacobiNC{z}{m}</code>	$\operatorname{nc}(z m)$	$\operatorname{nc}(z m)$
<code>\JacobiNCInv{z}{m}</code>	$\operatorname{nc}^{-1}(z m)$	$\operatorname{nc}^{-1}(z m)$
<code>\JacobiND{z}{m}</code>	$\operatorname{nd}(z m)$	$\operatorname{nd}(z m)$
<code>\JacobiNDInv{z}{m}</code>	$\operatorname{nd}^{-1}(z m)$	$\operatorname{nd}^{-1}(z m)$
<code>\JacobiNS{z}{m}</code>	$\operatorname{ns}(z m)$	$\operatorname{ns}(z m)$
<code>\JacobiNSInv{z}{m}</code>	$\operatorname{ns}^{-1}(z m)$	$\operatorname{ns}^{-1}(z m)$
<code>\JacobiSC{z}{m}</code>	$\operatorname{sc}(z m)$	$\operatorname{sc}(z m)$
<code>\JacobiSCInv{z}{m}</code>	$\operatorname{sc}^{-1}(z m)$	$\operatorname{sc}^{-1}(z m)$
<code>\JacobiSD{z}{m}</code>	$\operatorname{sd}(z m)$	$\operatorname{sd}(z m)$
<code>\JacobiSDInv{z}{m}</code>	$\operatorname{sd}^{-1}(z m)$	$\operatorname{sd}^{-1}(z m)$
<code>\JacobiSN{z}{m}</code>	$\operatorname{sn}(z m)$	$\operatorname{sn}(z m)$
<code>\JacobiSNInv{z}{m}</code>	$\operatorname{sn}^{-1}(z m)$	$\operatorname{sn}^{-1}(z m)$

1.9.5 Modular Functions

Command	Inline	Display
<code>\DedekindEta{z}</code>	$\eta(z)$	$\eta(z)$
<code>\KleinInvariantJ{z}</code>	$J(z)$	$J(z)$
<code>\ModularLambda{z}</code>	$\lambda(z)$	$\lambda(z)$
<code>\EllipticNomeQ{z}</code>	$q(z)$	$q(z)$
<code>\EllipticNomeQInv{z}</code>	$q^{-1}(z)$	$q^{-1}(z)$

1.9.6 Arithmetic Geometric Mean

Command	Inline	Display
<code>\ArithGeoMean{a}{b}</code>	$\operatorname{agm}(a, b)$	$\operatorname{agm}(a, b)$

1.9.7 Elliptic Exp and Log

Command	Inline	Display
<code>\EllipticExp{x}{a,b}</code>	$\operatorname{eexp}(x; a, b)$	$\operatorname{eexp}(x; a, b)$
<code>\EllipticLog{x,y}{a,b}</code>	$\operatorname{elog}(x, y; a, b)$	$\operatorname{elog}(x, y; a, b)$

1.10 Zeta Functions and Polylogarithms

1.10.1 Zeta Functions

Command	Inline	Display
<code>\RiemannZeta{s}</code>	$\zeta(s)$	$\zeta(s)$
<code>\Zeta{s}</code>	$\zeta(s)$	$\zeta(s)$
<code>\HurwitzZeta{s}{a}</code>	$\zeta(s, a)$	$\zeta(s, a)$
<code>\Zeta{s, a}</code>	$\zeta(s, a)$	$\zeta(s, a)$
<code>\RiemannSiegelTheta{x}</code>	$\vartheta(x)$	$\vartheta(x)$
<code>\RiemannSiegelZ{x}</code>	$Z(x)$	$Z(x)$
<code>\StieltjesGamma{n}</code>	γ_n	γ_n
<code>\LerchPhi{z}{s}{a}</code>	$\Phi(z, s, a)$	$\Phi(z, s, a)$
<code>\NielsenPolyLog{\nu}{p}{z}</code>	$S_\nu^p(z)$	$S_\nu^p(z)$
<code>\PolyLog{\nu, p, z}</code>	$S_\nu^p(z)$	$S_\nu^p(z)$
<code>\PolyLog{\nu, z}</code>	$\text{Li}_\nu(z)$	$\text{Li}_\nu(z)$
<code>\DiLog{z}</code>	$\text{Li}_2(z)$	$\text{Li}_2(z)$

1.11 Mathieu Functions and Characteristics

1.11.1 Mathieu Functions

Command	Inline	Display
<code>\MathieuC{a}{q}{z}</code>	$\text{Ce}(a, q, z)$	$\text{Ce}(a, q, z)$
<code>\MathieuS{a}{q}{z}</code>	$\text{Se}(a, q, z)$	$\text{Se}(a, q, z)$

1.11.2 Mathieu Characteristics

Command	Inline	Display
<code>\MathieuCharacteristicA{r}{q}</code>	$a_r(q)$	$a_r(q)$
<code>\MathieuCharisticA{r}{q}</code>	$a_r(q)$	$a_r(q)$
<code>\MathieuCharacteristicB{r}{q}</code>	$b_r(q)$	$b_r(q)$
<code>\MathieuCharisticB{r}{q}</code>	$b_r(q)$	$b_r(q)$
<code>\MathieuCharacteristicExponent{a}{q}</code>	$r(a, q)$	$r(a, q)$
<code>\MathieuCharisticExp{a}{q}</code>	$r(a, q)$	$r(a, q)$

1.12 Complex Components

Command	Inline	Display
<code>\Abs{z}</code>	$ z $	$ z $
<code>\Arg{z}</code>	$\arg(z)$	$\arg(z)$
<code>\Conj{z}</code>	z^*	z^*
<code>\Style{Conjugate=bar}\Conj{z}</code>	\bar{z}	\bar{z}
<code>\Style{Conjugate=overline}\Conj{z}</code>	\bar{z}	\bar{z}
<code>\Real{z}</code>	$\operatorname{Re} z$	$\operatorname{Re} z$
<code>\Imag{z}</code>	$\operatorname{Im} z$	$\operatorname{Im} z$
<code>\Sign{z}</code>	$\operatorname{sgn}(z)$	$\operatorname{sgn}(z)$

1.13 Number Theory Functions

Command	Inline	Display
<code>\FactorInteger{n}</code>	$\operatorname{factors}(n)$	$\operatorname{factors}(n)$
<code>\Factors{n}</code>	$\operatorname{factors}(n)$	$\operatorname{factors}(n)$
<code>\Divisors{n}</code>	$\operatorname{divisors}(n)$	$\operatorname{divisors}(n)$
<code>\Prime{n}</code>	$\operatorname{prime}(n)$	$\operatorname{prime}(n)$
<code>\PrimePi{x}</code>	$\pi(x)$	$\pi(x)$
<code>\DivisorSigma{k}{n}</code>	$\sigma_k(n)$	$\sigma_k(n)$
<code>\EulerPhi{n}</code>	$\varphi(n)$	$\varphi(n)$
<code>\MoebiusMu{n}</code>	$\mu(n)$	$\mu(n)$
<code>\JacobiSymbol{n}{m}</code>	$\left(\frac{n}{m}\right)$	$\left(\frac{n}{m}\right)$
<code>\CarmichaelLambda{n}</code>	$\lambda(n)$	$\lambda(n)$

`\DigitCount{n}{b}`

Inline: $\{s_b^{(1)}(n), s_b^{(2)}(n), \dots, s_b^{(b)-1}(n), s_b^{(0)}(n)\}$
Display: $\{s_b^{(1)}(n), s_b^{(2)}(n), \dots, s_b^{(b)-1}(n), s_b^{(0)}(n)\}$

`\DigitCount{n}{6}`

Inline: $\{s_6^1(n), s_6^2(n), s_6^3(n), s_6^4(n), s_6^5(n), s_6^{(0)}(n)\}$
Display: $\{s_6^1(n), s_6^2(n), s_6^3(n), s_6^4(n), s_6^5(n), s_6^{(0)}(n)\}$

1.14 Generalized Functions

Command	Inline	Display
<code>\DiracDelta{x}</code>	$\delta(x)$	$\delta(x)$
<code>\DiracDelta{x_1, x_2}</code>	$\delta(x_1, x_2)$	$\delta(x_1, x_2)$
<code>\HeavisideStep{x}</code>	$\theta(x)$	$\theta(x)$
<code>\HeavisideStep{x, y}</code>	$\theta(x, y)$	$\theta(x, y)$
<code>\UnitStep{x}</code>	$\theta(x)$	$\theta(x)$
<code>\UnitStep{x, y}</code>	$\theta(x, y)$	$\theta(x, y)$

1.15 Calculus Functions

1.15.1 Derivatives

`\Style{DDisplayFunc=inset,DShorten=true}` (Default)

<code>\D{f}{x}</code>	$\frac{df}{dx}$	$\frac{df}{dx}$
<code>\D[n]{f}{x}</code>	$\frac{d^n f}{dx^n}$	$\frac{d^n f}{dx^n}$

`\Style{DDisplayFunc=outset,DShorten=false}`

$$\backslash D\{f\}\{x\} \quad \frac{d}{dx} f \quad \frac{d}{dx} f$$

$$\backslash D[n]\{f\}\{x\} \quad \frac{d^n}{dx^n} f \quad \frac{d^n}{dx^n} f$$

$$\backslash D\{f\}\{x,y,z\} \quad \frac{d}{dx} \frac{d}{dy} \frac{d}{dz} f \quad \frac{d}{dx} \frac{d}{dy} \frac{d}{dz} f$$

$$\backslash D[2,n,3]\{f\}\{x,y,z\} \quad \frac{d^2}{dx^2} \frac{d^n}{dy^n} \frac{d^3}{dz^3} f \quad \frac{d^2}{dx^2} \frac{d^n}{dy^n} \frac{d^3}{dz^3} f$$

$$\backslash D[1,n,3]\{f\}\{x,y,z\} \quad \frac{d}{dx} \frac{d^n}{dy^n} \frac{d^3}{dz^3} f \quad \frac{d}{dx} \frac{d^n}{dy^n} \frac{d^3}{dz^3} f$$

`\Style{DDisplayFunc=outset,DShorten=true}`

$$\backslash D\{f\}\{x\} \quad \frac{d}{dx} f \quad \frac{d}{dx} f$$

$$\backslash D[n]\{f\}\{x\} \quad \frac{d^n}{dx^n} f \quad \frac{d^n}{dx^n} f$$

$$\backslash D\{f\}\{x,y,z\} \quad \frac{d^3}{dx dy dz} f \quad \frac{d^3}{dx dy dz} f$$

$$\backslash D[2,n,3]\{f\}\{x,y,z\} \quad \frac{d^{2+n+3}}{dx^2 dy^n dz^3} f \quad \frac{d^{2+n+3}}{dx^2 dy^n dz^3} f$$

$$\backslash D[1,n,3]\{f\}\{x,y,z\} \quad \frac{d^{1+n+3}}{dx dy^n dz^3} f \quad \frac{d^{1+n+3}}{dx dy^n dz^3} f$$

`\Style{DDisplayFunc=inset,DShorten=true}`

$$\backslash D\{f\}\{x\} \quad \frac{df}{dx} \quad \frac{df}{dx}$$

$$\backslash D[n]\{f\}\{x\} \quad \frac{d^n f}{dx^n} \quad \frac{d^n f}{dx^n}$$

$$\backslash D\{f\}\{x,y,z\} \quad \frac{d^3 f}{dx dy dz} \quad \frac{d^3 f}{dx dy dz}$$

$$\backslash D[2,n,3]\{f\}\{x,y,z\} \quad \frac{d^{2+n+3} f}{dx^2 dy^n dz^3} \quad \frac{d^{2+n+3} f}{dx^2 dy^n dz^3}$$

$$\backslash D[1,n,3]\{f\}\{x,y,z\} \quad \frac{d^{1+n+3} f}{dx dy^n dz^3} \quad \frac{d^{1+n+3} f}{dx dy^n dz^3}$$

1.15.2 Partial Derivatives

`\Style{DDisplayFunc=inset,DShorten=true}` (Default)

$$\backslash pderiv\{f\}\{x\} \quad \frac{\partial f}{\partial x} \quad \frac{\partial f}{\partial x}$$

$$\backslash pderiv[n]\{f\}\{x\} \quad \frac{\partial^n f}{\partial x^n} \quad \frac{\partial^n f}{\partial x^n}$$

`\Style{DDisplayFunc=outset,DShorten=false}`

$$\backslash\text{pderiv}\{f\}\{x\} \quad \frac{\partial}{\partial x} f \quad \frac{\partial}{\partial x} f$$

$$\backslash\text{pderiv}[n]\{f\}\{x\} \quad \frac{\partial^n}{\partial x^n} f \quad \frac{\partial^n}{\partial x^n} f$$

$$\backslash\text{pderiv}\{f\}\{x,y,z\} \quad \frac{\partial}{\partial x} \frac{\partial}{\partial y} \frac{\partial}{\partial z} f \quad \frac{\partial}{\partial x} \frac{\partial}{\partial y} \frac{\partial}{\partial z} f$$

$$\backslash\text{pderiv}[2,n,3]\{f\}\{x,y,z\} \quad \frac{\partial^2}{\partial x^2} \frac{\partial^n}{\partial y^n} \frac{\partial^3}{\partial z^3} f \quad \frac{\partial^2}{\partial x^2} \frac{\partial^n}{\partial y^n} \frac{\partial^3}{\partial z^3} f$$

$$\backslash\text{pderiv}[1,n,3]\{f\}\{x,y,z\} \quad \frac{\partial}{\partial x} \frac{\partial^n}{\partial y^n} \frac{\partial^3}{\partial z^3} f \quad \frac{\partial}{\partial x} \frac{\partial^n}{\partial y^n} \frac{\partial^3}{\partial z^3} f$$

`\Style{DDisplayFunc=outset,DShorten=true}`

$$\backslash\text{pderiv}\{f\}\{x\} \quad \frac{\partial}{\partial x} f \quad \frac{\partial}{\partial x} f$$

$$\backslash\text{pderiv}[n]\{f\}\{x\} \quad \frac{\partial^n}{\partial x^n} f \quad \frac{\partial^n}{\partial x^n} f$$

$$\backslash\text{pderiv}\{f\}\{x,y,z\} \quad \frac{\partial^3}{\partial x \partial y \partial z} f \quad \frac{\partial^3}{\partial x \partial y \partial z} f$$

$$\backslash\text{pderiv}[2,n,3]\{f\}\{x,y,z\} \quad \frac{\partial^{2+n+3}}{\partial x^2 \partial y^n \partial z^3} f \quad \frac{\partial^{2+n+3}}{\partial x^2 \partial y^n \partial z^3} f$$

$$\backslash\text{pderiv}[1,n,3]\{f\}\{x,y,z\} \quad \frac{\partial^{1+n+3}}{\partial x \partial y^n \partial z^3} f \quad \frac{\partial^{1+n+3}}{\partial x \partial y^n \partial z^3} f$$

`\Style{DDisplayFunc=inset,DShorten=true}`

<code>\pderiv{f}{x}</code>	$\frac{\partial f}{\partial x}$	$\frac{\partial f}{\partial x}$
<code>\pderiv[n]{f}{x}</code>	$\frac{\partial^n f}{\partial x^n}$	$\frac{\partial^n f}{\partial x^n}$
<code>\pderiv{f}{x,y,z}</code>	$\frac{\partial^3 f}{\partial x \partial y \partial z}$	$\frac{\partial^3 f}{\partial x \partial y \partial z}$
<code>\pderiv[2,n,3]{f}{x,y,z}</code>	$\frac{\partial^{2+n+3} f}{\partial x^2 \partial y^n \partial z^3}$	$\frac{\partial^{2+n+3} f}{\partial x^2 \partial y^n \partial z^3}$
<code>\pderiv[1,n,3]{f}{x,y,z}</code>	$\frac{\partial^{1+n+3} f}{\partial x \partial y^n \partial z^3}$	$\frac{\partial^{1+n+3} f}{\partial x \partial y^n \partial z^3}$

1.15.3 Integrals

Command	Inline	Display
<code>\Integrate{f}{x}</code>	$\int f dx$	$\int f dx$
<code>\Int{f(x)}{x}</code>	$\int f(x) dx$	$\int f(x) dx$
<code>\Int{f}{S,C}</code>	$\int_C f dS$	$\int_C f dS$
<code>\Int{f(x)}{x,a,b}</code>	$\int_a^b f(x) dx$	$\int_a^b f(x) dx$
<code>\Int{f(x)}{x,0,b}</code>	$\int_0^b f(x) dx$	$\int_0^b f(x) dx$
<code>\Int{\Int{f(x)}{x,0,y}}{y,0,z}</code>	$\int_0^z \int_0^y f(x) dx dy$	$\int_0^z \int_0^y f(x) dx dy$

1.15.4 Sums and Products

Command	Inline	Display
<code>\Sum{a(k)}{k}</code>	$\sum_k a(k)$	$\sum_k a(k)$
<code>\Sum{a(k)}{k,1,n}</code>	$\sum_{k=1}^n a(k)$	$\sum_{k=1}^n a(k)$
<code>\Prod{a(k)}{k}</code>	$\prod_k a(k)$	$\prod_k a(k)$
<code>\Prod{a(k)}{k,1,n}</code>	$\prod_{k=1}^n a(k)$	$\prod_{k=1}^n a(k)$

1.15.5 Matrices

Command	Inline	Display
<code>\IdentityMatrix</code>	$\mathbb{1}$	$\mathbb{1}$
<code>\Style{IdentityMatrixParen=p}</code> (Default)		
<code>\IdentityMatrix[2]</code>	$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$	$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$
<code>\Style{IdentityMatrixParen=b}</code>		
<code>\IdentityMatrix[2]</code>	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$
<code>\Style{IdentityMatrixParen=br}</code>		
<code>\IdentityMatrix[2]</code>	$\begin{Bmatrix} 1 & 0 \\ 0 & 1 \end{Bmatrix}$	$\begin{Bmatrix} 1 & 0 \\ 0 & 1 \end{Bmatrix}$
<code>\Style{IdentityMatrixParen=none}</code>		
<code>\IdentityMatrix[2]</code>	$\begin{matrix} 1 & 0 \\ 0 & 1 \end{matrix}$	$\begin{matrix} 1 & 0 \\ 0 & 1 \end{matrix}$

`\IdentityMatrix[20]` yields

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