CHAPTER 9 Auxillary

This chpater documents library functions and LET subcommands that were added after the release of the DATAPLOT Reference Manual. This chapter is not part of the official documentation and has not been through the WERB review process. These commands will be incorporated in the next edition of the DATAPLOT Reference Manual. These commands are listed in alphabetical order with no grouping by category. The following is a list of commands documented in this chapter.

AIRY(X)	Compute the Airy function.
ALPCDF(X,ALPHA,BETA)	Compute the alpha cumulative distribution function.
ALPPDF(X,ALPHA,BETA)	Compute the alpha probability density function.
ALPPPF(P,ALPHA,BETA)	Compute the alpha percent point function.
ANGCDF(X)	Compute the anglit cumulative distribution function.
ANGPDF(X)	Compute the anglit probability density function.
ANGPPF(P)	Compute the anglit percent point function.
ARSCDF(X)	Compute the arc-sine cumulative distribution function.
ARSPDF(X)	Compute the arc-sine probability density function.
ARSPPF(P)	Compute the arc-sine percent point function.
BAIRY(X)	Compute the Airy function of the second kind.
BBNCDF(X,A,B,N)	Compute the beta-binomial cumulative distribution function.
BBNPDF(X,A,B,N)	Compute the beta-binomial probability density function.
BBNPPFF(X,A,B,N)	Compute the beta-binomial percent point function.
BESSI0(X)	Compute the modified Bessel function of order 0.
BESSI0E(X)	Computes the exponentially scaled Bessel function of order 0.
BESSI1(X)	Compute the modified Bessel function of order 1.
BESSI1E(X)	Computes the exponentially scaled Bessel function of order 1.
BESSIN(X,N)	Compute the modified Bessel function of order N.
BESSINE(X,N)	Compute the exponentially scaled modified Bessel function of order N.
BESSJN(X,N)	Compute the Bessel function of the first kind and order N.
BESSK0(X)	Compute the modified Bessel function of the third kind and order 0.
BESSK0E(X)	Computes the exponentially scaled Bessel function of the third kind and order 0.
BESSK1(X)	Compute the modified Bessel function of the third kind and order 1.
BESSK1E(X)	Computes the exponentially scaled Bessel function of the third kind and order 1.
BESSKN(X,N)	Compute the modified Bessel function of the third kind and order N.
BESSKNE(X,N)	Compute the exponentially scaled modified Bessel function of the third kind and order N.
BESSY0(X)	Compute the Bessel function of the second kind and order 0.
BESSY1(X)	Compute the Bessel function of the second kind and order 1.
BESSYN(X,N)	Compute the Bessel function of the second kind and order N.
BRACDF(X,B)	Compute the Bradford cumulative distribution function.

BRAPDF(X,B)	Compute the Bradford probability density function.
BRAPPFF(X,B)	Compute the Bradford percent point function.
CABS(X)	Compute the absolute value of a complex number.
CBESSII(XR,XC,N)	Compute the imaginary component of the modified Bessel function of order N andcomplex argument.
CBESSIR(XR,XC,N)	Compute the real component of the Bessel function of the first kind and order N and complex argument.
CBESSJI(XR,XC,N)	Compute the imaginary component of the Bessel function of the first kind and order N and complex argument.
CBESSJR(XR,XC,N)	Compute the real component of the Bessel function of the first kind and order N and complex argument.
CBESSKI(XR,XC,N)	Compute the imaginary component of the modified Bessel function of the third kind and order N and complex argument.
CBESSKR(XR,XC,N)	Compute the real component of the modified Bessel function of the third kind and order N and complex argument.
CBESSYI(XR,XC,N)	Compute the imaginary component of the Bessel function of the second kind and order N and complex argument.
CBESSYR(XR,XC,N)	Compute the real component of the Bessel function of the second kind and order N and complex argument.
CCOS(XR,XC)	Compute the real component of the cosine of a complex number.
CCOSI(XR,XC)	Compute the imaginary component of the cosine of a complex number.
CEIL(X)	Return the integer portion of the number rounded to positive infinity.
CEXP(XR,XC)	Compute the real component of the exponential of a complex argument.
CEXPI(XR,XC)	Compute the imaginary component of the exponential of a complex argument.
CHCDF(X,NU)	Compute the chi cumulative distribution function.
CHEBT(X,N)	Compute the first kind Chebyshev polynomial of order N.
CHEBU(X,N)	Compute the second kind Chebyshev polynomial of order N.
CHPDF(X,NU)	Compute the chi probability density function.
CHPPF(P,NU)	Compute the chi percent point function.
CHU(X,A,B)	Compute the logarithm of the U type confluent hypergeometric function.
CLOG(XR,XC)	Compute the real component of the logarithm of a complex argument.
CLOGI(XR,XC)	Compute the imaginary component of the logarithm of a complex argument.
CN(X,K)	Compute the Jacobian elliptic function cn.
COSCDF(X)	Compute the cosine cumulative distribution function.
COSHINT(X)	Compute the hyperbolic cosine integral.
COSINT(X)	Compute the cosine integral.
COSPDF(X)	Compute the cosine probability density function.
COSPPF(X)	Compute the cosine percent point function.
CSIN(XR,XC)	Compute the real component of the sine of a complex number.
CSINI(XR,XC)	Compute the imaginary component of the sine of a complex number.
CSQRT(XR,XC)	Compute the real component of the square root of a complex number.
CSQRTI(XR,XC)	Compute the imaginary component of the square root of a complex number.

DAWSON(X)	Compute the Dawson integral.
DGACDF(X,GAMMA)	Compute the double gamma cumulative distribution function.
DGAPDF(X,GAMMA)	Compute the double gamma probability density function.
DGAPPF(P,GAMMA)	Compute the double gamma percent point function.
DIGAMMA(X)	Compute the digamma (or psi) function.
DLGCDF(X,THETA)	Compute the logarithmic series cumulative distribution function.
DLGPDF(X,THETA)	Compute the logarithmic series probability density function.
DLGPPF(X,THETA)	Compute the logarithmic series percent point function.
DN(X,K)	Compute the Jacobian elliptic function dn.
DWECDF(X,GAMMA)	Compute the double Weibull cumulative distribution function.
DWEPDF(X,GAMMA)	Compute the double Weibull probability density function.
DWEPPF(P,GAMMA)	Compute the double Weibull percent point function.
ELLIP1(PHI,ALPHA)	Compute Legendre's elliptic integral of the first kind.
ELLIP2(PHI,ALPHA)	Compute Legendre's elliptic integral of the second kind.
ELLIP3(PHI,N,ALPHA)	Compute Legendre's elliptic integral of the third kind.
ELLIPC1(ALPHA)	Compute Legendre's complete elliptic integral of the first kind.
ELLIPC2(ALPHA)	Compute Legendre's complete elliptic integral of the second kind.
EWECDF(X,GAMMA,T)	Compute the exponentialted Weibull cumulative distribution function.
EWEPDF(X,GAMMA,T)	Compute the exponentiated Weibull probability density function.
EWEPPF(P,GAMMA,T)	Compute the exponentiated -Weibull percent point function.
EXPINT1(X)	Compute the exponential integral of order 1.
EXPINTE(X)	Compute the Ei form of the exponential integral.
EXPINTN(X,N)	Compute the exponential integral of order N.
FLOOR(X)	Return the integer portion of the number rounded to negative infinity.
FCACDF(X,U,SD)	Compute the folded Cauchy cumulative distribution function.
FCAPDF(X,U,SD)	Compute the folded Cauchy probability density function.
FCAPPF(P,U,SD)	Compute the folded normal percent point function.
FNRCDF(X,U,SD)	Compute the folded normal cumulative distribution function.
FNRPDF(X,U,SD)	Compute the folded normal probability density function.
FNRPPF(P,U,SD)	Compute the folded normal percent point function.
FRESNC(X)	Compute the Fresnel cosine integral.
FRESNF(X)	Compute the Fresnel auxillary function f.
FRESNG(X)	Compute the Fresnel auxillary function g.
FRESNS(X)	Compute the Fresnel sine integral.
GCD(X1,X2)	Compute the greatest common divisor of two integers.
GEVCDF(X,GAMMA)	Compute the generalized extreme value cumulative distribution function.
GEVPDF(X,GAMMA)	Compute the generalized extreme value probability density function.
GEVPPF(P,GAMMA)	Compute the generalized extreme value percent point function.
GEXCDF(X,L1,L2,S)	Compute the generalized exponential cumulative distribution function.
GEXPDF(X,L1,L2,S)	Compute the generalized exponential probability density function.
GEXPPF(P,L1,L2,S)	Compute the generalized exponential percent point function.
GGDCDF(X,ALPHA,C)	Compute the generalized gamma cumulative distribution function.
GGDPDF(X,ALPHA,C)	Compute the generalized gamma probability density function.
GGDPPF(P,ALPHA,C)	Compute the generalized gamma percent point function.
GLOCDF(X,ALPHA)	Compute the generalized logistic cumulative distribution function.
GLOPDF(X,ALPHA)	Compute the generalized logistic probability density function.

GLOPPF(P,ALPHA)	Compute the generalized logistic percent point function.
GOMCDF(X,C,B)	Compute the Gompertz cumulative distribution function.
GOMPDF(X,C,B)	Compute the Gompertz probability density function.
GOMPPF(P,C,B)	Compute the Gompertz percent point function.
HEAVE(X)	Compute the heaveside function.
HERMITE(X,N)	Compute the Hermite polynomial of order N.
HFCCDF(X)	Compute the half-Cauchy cumulative distribution functions.
HFCPDF(X)	Compute the half-Cauchy probability density function.
HFCPPF(P)	Compute the half-Cauchy percent point function.
HFLCDF(X,GAMMA)	Compute the half-logistic and generalized half-logistic cumulative distribution functions.
HFLPDF(X,GAMMA)	Compute the half-logistic and generalized half-logistic probability density function.
HFLPPF(P,GAMMA)	Compute the half-logistic and generalized half-logistic percent point function.
HSECDF(X)	Compute the hyperbolic secant cumulative distribution functions.
HSEPDF(X)	Compute the hyperbolic secant probability density function.
HSEPPF(P)	Compute the hyperbolic secant percent point function.
JACOBIP(X,N,A,B)	Compute the Jacobi polynomial of order N.
KAPCDF(X,K,BETA,THETA)	Compute the Mielke's beta-kappa cumulative distribution functions.
KAPPDF(X,K,BETA,THETA)	Compute the Mielke's beta-kappa probability density function.
KAPPPF(P,K,BETA,THETA)	Compute the Mielke's beta-kappa percent point function.
LAGUERRE(X,N)	Compute the Laguerre polynomial of order N.
LAGUERRL(X,N,A)	Compute the generalized Laguerre polynomial of order N.
LEGENDRE(X,N,M)	Compute the Legendre polynomial of order N or the associated Legendre polynomial of order N and degree M.
LEGP(X,N,M)	Compute the Legendre function of the first kind of order N or the associated Legendre function of order N and degree M.
LEGQ(X,N,M)	Compute the Legendre function of the second kind of order N or the associated Legendre function of order N and degree M.
LGACDF(X,GAMMA)	Compute the log-gamma cumulative distribution function.
LGAPDF(X,GAMMA)	Compute the log-gamma probability density function.
LGAPPF(P,GAMMA)	Compute the log-gamma percent point function.
LLGCDF(X,DELTA)	Compute the log-logistic cumulative distribution function.
LLGPDF(X,DELTA)	Compute the log-logistic probability density function.
LLGPPF(P,DELTA)	Compute the log-logistic percent point function.
LOGINT1(X)	Compute the logarithmic integral.
MAD	Compute the median absolute deviation of a variable.
NCTPDF(X,NU,DELTA)	Compute the non-central t probability density function.
PA2CDF(X,GAMMA)	Compute the Pareto second kind cumulative distribution function.
PA2PDF(X,GAMMA)	Compute the Pareto second kind probability density function.
PA2PPF(P,GAMMA)	Compute the Pareto second kind percent point function.
PEQ(XR,XC)	Compute the real component of the Weierstrass P elliptic function of a complex number (equianharmonic case with unit period parallelogram).
PEQI(XR,XC)	Compute the imaginary component of the Weierstrass P elliptic function of a complex number (equianharmonic case with unit period parallelogram).
PEQ1(XR,XC)	Compute the real component of the derivative of Weierstrass P elliptic function of a complex number (equianharmonic case with unit period parallelogram).

PEQ1I(XR,XC)	Compute the imaginary component of the derivative of Weierstrass P elliptic function of a complex number (equianharmonic case with unit period parallelogram).
PEXCDF(X,ALPHA,BETA)	Compute the exponential power cumulative distribution function.
PEXPDF(X,ALPHA,BETA)	Compute the exponential power probability density function.
PEXPPF(P,ALPHA,BETA)	Compute the exponential power percent point function.
PLEM(XR,XC)	Compute the real component of the Weierstrass P elliptic function of a complex number (lemniscatic case with unit period parallelogram).
PLEMI(XR,XC)	Compute the imaginary component of the Weierstrass P elliptic function of a complex number (lemniscatic case with unit period parallelogram).
PLEM1(XR,XC)	Compute the real component of the derivative of Weierstrass P elliptic function of a complex number (lemniscatic case with unit period parallelogram).
PLEMI(XR,XC)	Compute the imaginary component of the derivative of Weierstrass P elliptic function of a complex number (lemniscatic case with unit period parallelogram).
PLNCDF(X,P,SD)	Compute the power log-normal cumulative distribution function.
PLNPDF(X,P,SD)	Compute the power log-normal probability density function.
PLNPPF(X,P,SD)	Compute the power log-normal percent point function.
PNRCDF(X,P,SD)	Compute the power normal cumulative distribution function.
PNRPDF(X,P,SD)	Compute the power normal probability density function.
PNRPPF(X,P,SD)	Compute the power normal percent point function.
POCH(X,A)	Compute a generalization of Pochhammer's symbol.
POCH1(X,A)	Compute a generalization of Pochhammer's symbol starting with the first order.
POWCDF(X,C)	Compute the power function cumulative distribution function.
POWPDF(X,C)	Compute the power function probability density function.
POWPPF(X,C)	Compute the power function percent point function.
RC(X,Y)	Compute Carlson's degenerate elliptic integral.
RD(X,Y,Z)	Compute Carlson's elliptic integral of the second kind.
RECCDF(X,B)	Compute the reciprocal cumulative distribution function.
RECPDF(X,B)	Compute the reciprocal probability density function.
RECPPFF(X,B)	Compute the reciprocal percent point function.
RF(X,Y,Z)	Compute Carlson's elliptic integral of the first kind.
RJ(X,Y,Z,P)	Compute Carlson's elliptic integral of the third kind.
SINHINT(X)	Compute the hyperbolic sine integral.
SININT(X)	Compute the sine integral.
SN(X,K)	Compute the Jacobian elliptic function sn.
SPENCE(X)	Compute the Spence integral.
SPHRHRMR(X,P,N,M)	Compute the spherical harmonic function.
TNECDF(X,X0,U,SD)	Compute the truncated exponential cumulative distribution function.
TNEPDF(X,X0,U,SD)	Compute the truncated exponential probability density function.
TNEPPF(P,X0,U,SD)	Compute the truncated exponential percent point function.
TNRCDF(X,A,B,U,SD)	Compute the truncated normal cumulative distribution function.
TNRPDF(X,A,B,U,SD)	Compute the truncated normal probability density function.
TNRPPF(P,A,B,U,SD)	Compute the truncated normal percent point function.
ULTRASPH(X,N)	Compute the ultraspherical (or Gegenbauer) polynomial of order N.
WARCDF(X,C,A)	Compute the Waring cumulative distribution function.
WARPDF(X,C,A)	Compute the Waring probability density function.

WARPPF(P,C,A)	Compute the Waring percent point function.PA2CDF(X,GAMMA)
	Compute the Pareto second kind cumulative distribution function.
WCACDF(X,P)	Compute the wrapped Cauchy cumulative distribution function.
WCAPDF(X,P)	Compute the wrapped Cauchy probability density function.
WCAPPF(P,P)	Compute the wrapped Cauchy percent point function.