

**RECPDF****PURPOSE**

Compute the reciprocal probability density function.

**DESCRIPTION**

The probability density function is:

$$f(x, b) = \frac{1}{x \log(b)} \quad 1/b \leq x < 1, b > 1 \quad \text{(EQ Aux-298)}$$

where b is the shape parameter.

**SYNTAX**

LET <y> = RECPDF(<x>,<b>) <SUBSET/EXCEPT/FOR qualification>

where <x> is a variable, a number, or a parameter;

<y> is a variable or a parameter (depending on what <x> is) where the computed reciprocal pdf value is saved;

<b> is a number, parameter, or variable that specifies the shape parameter;

and where the <SUBSET/EXCEPT/FOR qualification> is optional.

**EXAMPLES**

LET A = RECPDF(0.5,1.5)

LET X2 = RECPDF(X1,B)

**DEFAULT**

None

**SYNONYMS**

None

**RELATED COMMANDS**

RECCDF	=	Compute the reciprocal cumulative distribution function.
RECPPF	=	Compute the reciprocal percent point function.
BRACDF	=	Compute the Bradford cumulative distribution function.
BRAPDF	=	Compute the Bradford probability density function.
BRAPPF	=	Compute the Bradford percent point function.
BETCDF	=	Compute the beta cumulative distribution function.
BETPDF	=	Compute the beta probability density function.
BETPPF	=	Compute the beta percent point function.

**REFERENCE**

"Numerical Methods for Scientists and Engineers," 2nd. Ed., Hamming, Dover Publications, 1973.

**APPLICATIONS**

Data Analysis

**IMPLEMENTATION DATE**

96/5

## PROGRAM

```
MULTILOT 2 2; MULTILOT CORNER COORDINATES 0 0 100 100
TITLE AUTOMATIC
X1LABEL X
Y1LABEL PROBABILITY
LET B = 10
X1LABEL BETA = ^B
PLOT RECPDF(X,B) FOR X = 0.1 0.01 0.99
LET B = 100
X1LABEL BETA = ^B
PLOT RECPDF(X,B) FOR X = 0.01 0.01 0.99
LET B = 5
X1LABEL BETA = ^B
PLOT RECPDF(X,B) FOR X = 0.2 0.01 0.99
LET B = 2
X1LABEL BETA = ^B
PLOT RECPDF(X,B) FOR X = 0.5 0.01 0.99
END OF MULTILOT
```

