

**mathieeedoubtrans**

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# Chapter 1

## mathieeedoubtrans

### 1.1 mathieeedoubtrans.doc

```
IEEEEDPAcos ()
IEEEEDPAsin ()
IEEEEDPAtan ()
IEEEEDPCos ()
IEEEEDPCosh ()
IEEEEDPExp ()
IEEEEDPFieee ()
IEEEEDPLog ()
IEEEEDPLog10 ()
IEEEEDPPow ()
IEEEEDPSin ()
IEEEEDPSincos ()
IEEEEDPSinh ()
IEEEEDPSqrt ()
IEEEEDPTan ()
IEEEEDPTanh ()
IEEEEDPTieee ()
```

### 1.2 mathieeedoubtrans.library/IEEEEDPAcos

NAME  
IEEEEDPAcos -- compute the arc cosine of a number

SYNOPSIS  
    x = IEEEEDPAcos( y );  
d0/d1                      d0/d1

double x,y;

FUNCTION  
Compute arc cosine of y in IEEE double precision

INPUTS  
y - IEEE double precision floating point value

---

RESULT  
x - IEEE double precision floating point value

BUGS

SEE ALSO  
IEEEEDPCos(), IEEEEDPatan(), IEEEEDPasin()

### 1.3 mathieeedoubtrans.library/IEEEEDPasin

NAME  
IEEEEDPasin -- compute the arcsine of a number

SYNOPSIS  
x = IEEEEDPasin( y );  
d0/d1 d0/d1

double x,y;

FUNCTION  
Compute the arc sine of y in IEEE double precision

INPUTS  
y - IEEE double precision floating point value

RESULT  
x - IEEE double precision floating point value

BUGS

SEE ALSO  
IEEEEDPSin(), IEEEEDPatan(), IEEEEDPacos()

### 1.4 mathieeedoubtrans.library/IEEEEDPatan

NAME  
IEEEEDPatan -- compute the arctangent of a floating point number

SYNOPSIS  
x = IEEEEDPatan( y );  
d0/d1 d0/d1

double x,y;

FUNCTION  
Compute arctangent of y in IEEE double precision

INPUTS  
y - IEEE double precision floating point value

RESULT  
x - IEEE double precision floating point value

---

BUGS

SEE ALSO

IEEEEDPTan(), IEEEEDPAsin(), IEEEEDPACos()

## 1.5 mathieeedoubtrans.library/IEEEEDPCos

NAME

IEEEEDPCos -- compute the cosine of a floating point number

SYNOPSIS

```
x = IEEEEDPCos( y );  
d0/d1      d0/d1
```

```
double x,y;
```

FUNCTION

Compute cosine of y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

SEE ALSO

IEEEEDPACos(), IEEEEDPSin(), IEEEEDPTan()

## 1.6 mathieeedoubtrans.library/IEEEEDPCosh

NAME

IEEEEDPCosh -- compute the hyperbolic cosine of a floating point number

SYNOPSIS

```
x = IEEEEDPCosh( y );  
d0/d1      d0/d1
```

```
double x,y;
```

FUNCTION

Compute hyperbolic cosine of y in IEEE double precision

INPUTS

y - IEEE double precision floating point value

RESULT

x - IEEE double precision floating point value

BUGS

---

SEE ALSO  
IEEEEDPSinh(), IEEEEDPTanh()

## 1.7 mathieedoubtrans.library/IEEEEDPExp

NAME  
IEEEEDPExp -- compute the exponential of e

SYNOPSIS  
x = IEEEEDPExp( y );  
d0/d1 d0/d1

double x,y;

FUNCTION  
Compute e^y in IEEE double precision

INPUTS  
y - IEEE double precision floating point value

RESULT  
x - IEEE double precision floating point value

BUGS

SEE ALSO  
IEEEEDPLog()

## 1.8 mathieedoubtrans.library/IEEEDPFieee

NAME  
IEEEDPFieee -- convert IEEE single to IEEE double

SYNOPSIS  
x = IEEEDPFieee( y );  
d0/d1 d0

float y;  
double x;

FUNCTION  
Convert IEEE single precision number to IEEE double precision.

INPUTS  
y - IEEE single precision floating point value

RESULT  
x - IEEE double precision floating point value

BUGS

---

SEE ALSO  
IEEEEDPTieee()

## 1.9 mathieeedoubtrans.library/IEEEEDPLog

NAME  
IEEEEDPLog -- compute the natural logarithm of a floating point number

SYNOPSIS  
x = IEEEEDPLog( y );  
d0/d1 d0/d1

double x,y;

FUNCTION  
Compute  $\ln(y)$  in IEEE double precision

INPUTS  
y - IEEE double precision floating point value

RESULT  
x - IEEE double precision floating point value

BUGS

SEE ALSO  
IEEEEDPExp()

## 1.10 mathieeedoubtrans.library/IEEEEDPLog10

NAME  
IEEEEDPLog10 -- compute logarithm base 10 of a number

SYNOPSIS  
x = IEEEEDPLog10( y );  
d0/d1 d0/d1

double x,y;

FUNCTION  
Compute the logarithm base 10 of y in IEEE double precision

INPUTS  
y - IEEE double precision floating point value

RESULT  
x - IEEE double precision floating point value

BUGS

SEE ALSO  
IEEEEDPLog()

---



## 1.11 mathieeedoubtrans.library/IEEEDPPow

### NAME

IEEEDPPow -- raise a number to another number power

### SYNOPSIS

```
z = IEEEDPPow( x , y );
d0/d1          d2/d3 d0/d1
```

```
double x,y,z;
```

### FUNCTION

Compute  $y^x$  in IEEE double precision

### INPUTS

x - IEEE double precision floating point value  
y - IEEE double precision floating point value

### RESULT

z - IEEE double precision floating point value

### BUGS

### SEE ALSO

## 1.12 mathieeedoubtrans.library/IEEEDPSin

### NAME

IEEEDPSin -- compute the sine of a floating point number

### SYNOPSIS

```
x = IEEEDPSin( y );
d0/d1          d0/d1
```

```
double x,y;
```

### FUNCTION

Compute sine of y in IEEE double precision

### INPUTS

y - IEEE double precision floating point value

### RESULT

x - IEEE double precision floating point value

### BUGS

### SEE ALSO

IEEEDPAsin(), IEEEDPTan(), IEEEDPCos()

## 1.13 mathieeedoubtrans.library/IEEEDPSincos

## NAME

IEEEEDPSincos -- compute the arc tangent of a floating point number

## SYNOPSIS

```
x = IEEEEDPSincos( z , y );  
d0/d1      a0 d0/d1
```

```
double x,y,*z;
```

## FUNCTION

Compute sin and cosine of y in IEEE double precision.  
Store the cosine in \*z. Return the sine of y.

## INPUTS

y - IEEE double precision floating point value  
z - pointer to IEEE double precision floating point number

## RESULT

x - IEEE double precision floating point value

## BUGS

## SEE ALSO

IEEEEDPSin(), IEEEEDPCos()

## 1.14 mathieeedoubtrans.library/IEEEEDPSinh

## NAME

IEEEEDPSinh -- compute the hyperbolic sine of a floating point number

## SYNOPSIS

```
x = IEEEEDPSinh( y );  
d0/d1      d0/d1
```

```
double x,y;
```

## FUNCTION

Compute hyperbolic sine of y in IEEE double precision

## INPUTS

y - IEEE double precision floating point value

## RESULT

x - IEEE double precision floating point value

## BUGS

## SEE ALSO

IEEEEDPCosh(), IEEEEDPTanh()

## 1.15 mathieeedoubtrans.library/IEEEEDPSqrt

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NAME  
IEEEEDPSqrt -- compute the square root of a number

SYNOPSIS  
x = IEEEEDPSqrt( y );  
d0/d1 d0/d1

double x,y;

FUNCTION  
Compute square root of y in IEEE double precision

INPUTS  
y - IEEE double precision floating point value

RESULT  
x - IEEE double precision floating point value

BUGS

SEE ALSO

## 1.16 mathieeedoubtrans.library/IEEEEDPTan

NAME  
IEEEEDPTan -- compute the tangent of a floating point number

SYNOPSIS  
x = IEEEEDPTan( y );  
d0/d1 d0/d1

double x,y;

FUNCTION  
Compute tangent of y in IEEE double precision

INPUTS  
y - IEEE double precision floating point value

RESULT  
x - IEEE double precision floating point value

BUGS

SEE ALSO  
IEEEEDPAtan(), IEEEEDPSin(), IEEEEDPCos()

## 1.17 mathieeedoubtrans.library/IEEEEDPTanh

NAME  
IEEEEDPTanh -- compute the hyperbolic tangent of a floating point number

---

```
SYNOPSIS
    x = IEEEEDPTanh( y );
d0/d1      d0/d1

double  x,y;

FUNCTION
Compute hyperbolic tangent of y in IEEE double precision

INPUTS
y - IEEE double precision floating point value

RESULT
x - IEEE double precision floating point value

BUGS

SEE ALSO
IEEEEDPSinh(), IEEEEDPCosh()
```

## 1.18 mathieeedoubtrans.library/IEEEEDPTieee

```
NAME
IEEEEDPTieee -- convert IEEE double to IEEE single

SYNOPSIS
    x = IEEEEDPTieee( y );
d0      d0/d1

double  y;
float   x;

FUNCTION
Convert IEEE double precision number to IEEE single precision.

INPUTS
y - IEEE double precision floating point value

RESULT
x - IEEE single precision floating point value

BUGS

SEE ALSO
IEEEEDPFieee()
```

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