mathtrans

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mathtrans

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```

1.2 mathtrans.library/SPAcos

```
NAME
    SPAcos - obtain the arccosine of the floating point number

SYNOPSIS
    fnum2 = SPAcos(fnum1);
                 d0.l
    float fnum2;
    float fnum1;

FUNCTION
    Accepts a floating point number representing the cosine
    of an angle and returns the value of said angle in
    radians

INPUTS
    fnum1 - Motorola fast floating point number

RESULT
    fnum2 - Motorola fast floating point number

BUGS
    None

SEE ALSO
    SPSin
```

1.3   mathtrans.library/SPAsin

```
NAME
    SPAsin - obtain the arcsine of the floating point number

SYNOPSIS
    fnum2 = SPAsin(fnum1);
                  d0.l
    float fnum2;
    float fnum1;

FUNCTION
    Accepts a floating point number representing the sine
    of an angle and returns the value of said angle in
    radians

INPUTS
    fnum1 - Motorola fast floating point number

RESULT
    fnum2 - Motorola fast floating point number

BUGS
    None

SEE ALSO
    SPCos
```

1.4   mathtrans.library/SPAtan

```
NAME
    SPAtan - obtain the arctangent of the floating point number

SYNOPSIS
    fnum2 = SPAtan(fnum1);
                  d0.l
    float fnum2;
    float fnum1;

FUNCTION
    Accepts a floating point number representing the tangent
    of an angle and returns the value of said angle in
    radians

INPUTS
    fnum1 - Motorola fast floating point number

RESULT
    fnum2 - Motorola fast floating point number

BUGS
    None

SEE ALSO
```

```
    SPTan
```

1.5   mathtrans.library/SPCos

```
NAME
    SPCos - obtain the cosine of the floating point number

SYNOPSIS
    fnum2 = SPCos(fnum1);
                  d0.l
    float fnum2;
    float fnum1;

FUNCTION
    Accepts a floating point number representing an angle
    in radians and returns the cosine of said angle.

INPUTS
    fnum1 - Motorola fast floating point number

RESULT
    fnum2 - Motorola fast floating point number

BUGS
    None

SEE ALSO
    SPAcos
```

1.6   mathtrans.library/SPCosh

```
NAME
    SPCosh - obtain the hyperbolic cosine of the floating point number

SYNOPSIS
    fnum2 = SPCosh(fnum1);
                   d0.l
    float fnum2;
    float fnum1;

FUNCTION
    Accepts a floating point number representing an angle
    in radians and returns the hyperbolic cosine of said angle.

INPUTS
    fnum1 - Motorola fast floating point number

RESULT
    fnum2 - Motorola fast floating point number

BUGS
    None
```

SEE ALSO
    SPSinh

1.7   mathtrans.library/SPExp

NAME
    SPExp – obtain the exponential (e**X) of the floating point number

SYNOPSIS
    fnum2 = SPExp(fnum1);
                  d0.l
    float fnum2;
    float fnum1;

FUNCTION
    Accepts a floating point number and returns the value
    of e raised to the fnum1 power

INPUTS
    fnum1 – Motorola fast floating point number

RESULT
    fnum2 – Motorola fast floating point number

BUGS
    None

SEE ALSO
    SPLog

1.8   mathtrans.library/SPFieee

NAME
    SPFieee – convert single precision ieee to FFP number

SYNOPSIS
    fnum = SPFieee(ieeenum);
                   d0.l
    float fnum;
    float ieeenum;

FUNCTION
    Accepts a standard single precision format
    returns the same number, converted to Motorola
    fast floating point number

INPUTS
    ieeenum – IEEE Single Precision Floating Point

RESULT
    fnum – Motorola fast floating point number

```
BUGS
    None

SEE ALSO
    SPTieee
```

1.9   mathtrans.library/SPLog

```
NAME
    SPLog - obtain the natural logarithm of the floating point number

SYNOPSIS
    fnum2 = SPLog(fnum1);
                d0.l
    float fnum2;
    float fnum1;

FUNCTION
    Accepts a floating point number and returns the natural
    logarithem (base e) of said number

INPUTS
    fnum1 - Motorola fast floating point number

RESULT
    fnum2 - Motorola fast floating point number

BUGS
    None

SEE ALSO
    SPExp
```

1.10   mathtrans.library/SPLog10

```
NAME
    SPLog10 - obtain the naperian logarithm(base 10) of the
            floating point number

SYNOPSIS
    fnum2 = SPLog10(fnum1);
                    d0.l
    float fnum2;
    float fnum1;

FUNCTION
    Accepts a floating point number and returns the naperian
    logarithm (base 10) of said number

INPUTS
    fnum1 - Motorola fast floating point number
```

```
RESULT
    fnum2 - Motorola fast floating point number

BUGS
    None

SEE ALSO
    SPExp, SpLog
```

1.11   mathtrans.library/SPPow

```
NAME
    SPPow - raise a number to a power

SYNOPSIS
    result = SPPow(fnum1, fnum2);
                   d1.l     d0.l
    float fnum1, fnum2;
    float result;

FUNCTION
    Accepts two floating point numbers and returns the
    result of fnum2 raised to the fnum1 power

INPUTS
    fnum1 - Motorola fast floating point number
    fnum2 - Motorola fast floating point number

RESULT
    result - Motorola fast floating point number

BUGS
    None

SEE ALSO
    SPExp, SPLog
```

1.12   mathtrans.library/SPSin

```
NAME
    SPSin - obtain the sine of the floating point number

SYNOPSIS
    fnum2 = SPSin(fnum1);
                   d0.l
    float fnum2;
    float fnum1;

FUNCTION
    Accepts a floating point number representing an angle
    in radians and returns the sine of said angle.
```

```
INPUTS
    fnum1 - Motorola fast floating point number

RESULT
    fnum2 - Motorola fast floating point number

BUGS
    None

SEE ALSO
    SPAsin
```

1.13 mathtrans.library/SPSincos

```
NAME
    SPSincos - obtain the sine and cosine of a number

SYNOPSIS
    fnum3 = SPSincos(pfnum2, fnum1);
                     d1.l,   d0.l
    float *pfnum2;
    float fnum1;
    float fnum3;

FUNCTION
    Accepts a floating point number (fnum1) representing
    an angle in radians and a pointer to another floating
    point number (pfnum2). It computes the cosine and places it in
    *pfnum2. It computes the sine and returns it as a result.

INPUTS
    fnum1 - Motorola fast floating point number
    pfnum2 - pointer to Motorola fast floating point number

RESULT
    *pfnum2 - Motorola fast floating point number (cosine)
    fnum3 - Motorola fast floating point number (sine)

BUGS
    None

SEE ALSO
    SPSin, SPCos
```

1.14 mathtrans.library/SPSinh

```
NAME
    SPSinh - obtain the hyperbolic sine of the floating point number

SYNOPSIS
    fnum2 = SPSinh(fnum1);
```

```
                        d0.l
    float fnum2;
    float fnum1;

FUNCTION
    Accepts a floating point number representing an angle
    in radians and returns the hyperbolic sine of said angle.

INPUTS
    fnum1 - Motorola fast floating point number

RESULT
    fnum2 - Motorola fast floating point number

BUGS
    None

SEE ALSO
    SPCosh
```

1.15   mathtrans.library/SPSqrt

```
NAME
    SPSqrt - obtain the square root of the floating point number

SYNOPSIS
    fnum2 = SPSqrt(fnum1);
                d0.l
    float fnum2;
    float fnum1;

FUNCTION
    Accepts a floating point number and returns the square toot
    of said number

INPUTS
    fnum1 - Motorola fast floating point number

RESULT
    fnum2 - Motorola fast floating point number

BUGS
    None

SEE ALSO
    SPPow, SPMul
```

1.16   mathtrans.library/SPTan

```
NAME
    SPTan - obtain the tangent of the floating point number
```

```
SYNOPSIS
    fnum2 = SPTan(fnum1);
                  d0.l
    float fnum2;
    float fnum1;

FUNCTION
    Accepts a floating point number representing an angle
    in radians and returns the tangent of said angle.

INPUTS
    fnum1 - Motorola fast floating point number

RESULT
    fnum2 - Motorola fast floating point number

BUGS
    None

SEE ALSO
    SPAtan
```

1.17   mathtrans.library/SPTanh

```
NAME
    SPTanh - obtain the hyperbolic tangent of the floating point number

SYNOPSIS
    fnum2 = SPTanh(fnum1);
                   d0.l
    float fnum2;
    float fnum1;

FUNCTION
    Accepts a floating point number representing an angle
    in radians and returns the hyperbolic tangent of said angle.

INPUTS
    fnum1 - Motorola fast floating point number

RESULT
    fnum2 - Motorola fast floating point number

BUGS
    None

SEE ALSO
    SPSinh, SPCosh
```

1.18   mathtrans.library/SPTieee

```
NAME
    SPTieee - convert FFP number to single precision ieee

SYNOPSIS
    ieeenum = SPTieee(fnum);
                    d0.l
    float ieeenum;
    float fnum;

FUNCTION
    Accepts a Motorola fast floating point number and
    returns the same number, converted into IEEE
    standard single precision format

INPUTS
    fnum - Motorola fast floating point number

RESULT
    ieeenum - IEEE Single Precision Floating Point

BUGS
    None

SEE ALSO
    SPFieee
```