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);
                       d0.1
  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);
                       d0.1
  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
```