C - LIBRARIES

By SAHIL

MATH.H

The math.h header file is a standard C library that provides mathematical functions for performing calculations such as finding square roots, powers, logarithms and trigonometric values.

To use these functions, include the header file in your program.

```
#include <math.h>

function_name(arguments);
```

MATHEMATICAL FUNCTIONS

Basic Mathematical Functions:

1. **Square Root :** Calculates the square root of a number.

   syntax : sqrt(variable);
   ex: sqrt(25) → 5.0

2. **Power :** Calculates the value of x raised to the power y.

   syntax : pow(base,exponential);
   ex : pow(2, 3) → 8.0

MATHEMATICAL FUNCTIONS

Trigonometric Functions:

1. **Sine :** Calculates the sine of angle x.

syntax : sin(variable);
ex: sin(0) → 0.0

2.**Cos :** Calculates the cosine of angle x.

syntax : cos(variable);
ex : cos(0) → 1.0

MATHEMATICAL FUNCTIONS

Trigonometric Functions:

3. **Tan :** Calculates the tangent of angle x.

syntax : tan(variable);
ex: tan(0) → 0.0

4. **Cosec :** Calculates the inverse sine.

syntax : asin(variable);
ex : asin(0) → 0.0

MATHEMATICAL FUNCTIONS

Trigonometric Functions:

5. **Sec :** Calculates the inverse cosine.

syntax : asec(variable);
ex: asec(1) → 0.0

6. **Cot :** Calculates the inverse tangent.

syntax : atan(variable);
ex : atan(0) → 0.0

MATHEMATICAL FUNCTIONS

Logarithmic and Exponential Functions:

1. **Logarithmic :** Calculates the natural logarithm (base (e)).

syntax : log(variable);
ex: log(2.7182818) ≈ 1.0

2. **Exponential :** Calculates (e^x).

syntax : exp(variable);
ex : exp(1) ≈ 2.71828

MATHEMATICAL FUNCTIONS

Rounding Functions:

1. **Ceil :** Rounds upward to the smallest integer-valued number not less than x.

syntax : ceil(variable);
ex: ceil(4.2) → 5.0

2. **Floor :** Rounds downward to the largest integer-valued number not greater than x.

syntax : floor(variable);
ex : floor(4.8) → 4.0

MATHEMATICAL FUNCTIONS

Rounding Functions:

3. **Round :** Rounds upward to the smallest integer-valued number not less than x.

syntax : round(variable);
ex: round(4.5) → 5.0

4. **Trunc :** Removes the fractional part, rounding toward zero.

syntax : trunc(variable);
ex : trunc(-4.8) → -4.0

THANK YOU

By SAHIL