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<Self learning note>

TUTORIAL 3: MATH OPERATION IN C++

C++ has many functions that allows you to perform mathematical tasks on numbers.

cmath library is required for this operations.

Example:

```
#include <cmath>

cout << sqrt(64);

cout << round(2.6);
```

round(2.6) = 3, round(2.2) = 2, round(2.5) = 3

```
cout << log(2);
```

Note : This is natural log ln

For use base 10 : log10(2) it provides answer of log(given value) base 10

Function	Description
abs(x)	Returns the absolute value of x abs(-1) = 1, provide positive absolute value
acos(x)	Returns the arccosine of x
asin(x)	Returns the arcsine of x
atan(x)	Returns the arctangent of x
cbrt(x)	Returns the cube root of x
ceil(x)	Returns the value of x rounded up to its nearest integer Nearest next integer side (Ceiling)
cos(x)	Returns the cosine of x
cosh(x)	Returns the hyperbolic cosine of x
exp(x)	Returns the value of Ex
expm1(x)	Returns ex -1
fabs(x)	Returns the absolute value of a floating x

fdim(x, y)	Returns the positive difference between x and y	Working with floating point number
floor(x)	Returns the value of x rounded down to its nearest integer	Nearest integer toward zero side
hypot(x, y)	Returns sqrt(x2 +y2) without intermediate overflow or underflow	
fma(x, y, z)	Returns x*y+z without losing precision	
fmax(x, y)	Returns the highest value of a floating x and y	
fmin(x, y)	Returns the lowest value of a floating x and y	
fmod(x, y)	Returns the floating point remainder of x/y	
pow(x, y)	Returns the value of x to the power of y	
sin(x)	Returns the sine of x (x is in radians)	
sinh(x)	Returns the hyperbolic sine of a double value	
tan(x)	Returns the tangent of an angle	
tanh(x)	Returns the hyperbolic tangent of a double value	

CODE :

```
cout << round(2.1) << " , " << ceil(2.1) << " , " << floor(2.1) << endl;
cout << round(2.5) << " , " << ceil(2.5) << " , " << floor(2.5) << endl;
cout << round(2.9) << " , " << ceil(2.9) << " , " << floor(2.9) << endl;
```

OUTPUT:

```
2 , 3 , 2
3 , 3 , 2
3 , 3 , 2
```