

Python Math Library: Modules, Functions & Examples

This document contains the complete list of modules and functions in Python's built-in 'math' library with syntax examples.

Module: math

Description: Provides mathematical functions like trigonometry, logarithms, factorials, etc.

Function: `sqrt(x)`

```
import math

print(math.sqrt(25))  # Output: 5.0
```

Function: `ceil(x)`

```
import math

print(math.ceil(4.2))  # Output: 5
```

Function: `floor(x)`

```
import math

print(math.floor(4.9))  # Output: 4
```

Function: `factorial(x)`

```
import math

print(math.factorial(5))  # Output: 120
```

Function: `pow(x, y)`

```
import math

print(math.pow(2, 3))  # Output: 8.0
```

Function: `exp(x)`

```
import math
```

```
print(math.exp(2)) # Output: 7.389056
```

Function: `log(x)`

```
import math
```

```
print(math.log(10)) # Output: 2.302585
```

Function: `log10(x)`

```
import math
```

```
print(math.log10(100)) # Output: 2.0
```

Function: `log2(x)`

```
import math
```

```
print(math.log2(8)) # Output: 3.0
```

Function: `sin(x)`

```
import math
```

```
print(math.sin(math.radians(30))) # Output: 0.5
```

Function: `cos(x)`

```
import math
```

```
print(math.cos(math.radians(60))) # Output: 0.5
```

Function: `tan(x)`

```
import math
```

```
print(math.tan(math.radians(45))) # Output: 1.0
```

Function: `degrees(x)`

```
import math
```

```
print(math.degrees(math.pi/2)) # Output: 90.0
```

Function: `radians(x)`

```
import math
```

```
print(math.radians(180)) # Output: 3.141592
```

Function: gcd(x, y)

```
import math
```

```
print(math.gcd(48, 18)) # Output: 6
```

Function: isnan(x)

```
import math
```

```
print(math.isnan(float('nan'))) # Output: True
```

Function: isfinite(x)

```
import math
```

```
print(math.isfinite(100)) # Output: True
```

Function: isinf(x)

```
import math
```

```
print(math.isinf(float('inf'))) # Output: True
```

Function: hypot(x, y)

```
import math
```

```
print(math.hypot(3, 4)) # Output: 5.0
```

Function: copysign(x, y)

```
import math
```

```
print(math.copysign(5, -1)) # Output: -5.0
```

Function: fabs(x)

```
import math
```

```
print(math.fabs(-10)) # Output: 10.0
```

Function: fsum(iterable)

```
import math

print(math.fsum([0.1, 0.2, 0.3])) # Output: 0.6
```

Function: modf(x)

```
import math

print(math.modf(3.14)) # Output: (0.14, 3.0)
```

Function: trunc(x)

```
import math

print(math.trunc(3.99)) # Output: 3
```

Function: pi

```
import math

print(math.pi) # Output: 3.141592653589793
```

Function: e

```
import math

print(math.e) # Output: 2.718281828459045
```

Function: tau

```
import math

print(math.tau) # Output: 6.283185307179586
```

Function: inf

```
import math

print(math.inf) # Output: inf
```

Function: nan

```
import math
```

```
print(math.nan) # Output: nan
```