Math Module

In [2]:
```
import math
```

Euler's number

In [5]:
```
math.e
```

Out[5]: 2.718281828459045

Python math PI

In [8]:
```
math.pi
```

Out[8]: 3.141592653589793

math.tau

In [11]:
```
math.tau
```

Out[11]: 6.283185307179586

Infinity

In [14]:
```
math.inf
```

Out[14]: inf

In [16]:
```
-math.inf
```

Out[16]: -inf

Comparing the values of infinity with the maximum floating point value

In [19]:
```
print (math.inf > 10e108)
print (-math.inf < -10e108)
```

```
True
True
```

NaN Values

In [22]:
```
math.nan
```

Out[22]:
```
nan
```

Python | math.ceil() function

In [25]:
```
from math import *
```

In [29]:
```
x = 33.7
print(ceil(x))
```

```
34
```

In [37]:
```
x = -33.7
y = 101.2
print(f'This is x {ceil(x)} and {ceil(y)}')
```

```
This is x -33 and 102
```

Python | math.floor() function

In [43]:
```
x = 33.7
print(floor(x))
```

```
33
```

In [45]:
```
x = -33.7
print(floor(x))
```

```
-34
```

Python math library | exp() method

In [48]:
```
x = 4
print(exp(x))
```

```
54.598150033144236
```

In [50]:
```
x = -30
print(exp(x))
```

```
9.357622968840175e-14
```

In [52]:
```
x = 0.98
print(exp(x))
```

```
2.664456241929417
```

Python pow() Function

In [55]:
```
print(pow(3,2))
```

```
9.0
```

In [57]:
```
print(pow(2,2))
```

```
4.0
```

In [59]:
```
print(int(pow(2,2)))
```

```
4
```

In [71]:
```
from math import *
```

In [73]:
```
x = pow(2,3,4)
print(x)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[73], line 1
----> 1 x = pow(2,3,4)
      2 print(x)

TypeError: pow expected 2 arguments, got 3
```

Python math.sqrt() function

In [76]:
```
sqrt(4)
```

Out[76]:
```
2.0
```

In [78]:
```
int(sqrt(2))
```

Out[78]:
```
1
```

In [82]:
```
sqrt(4)
```

Out[82]:
```
2.0
```

Python | math.factorial() function

In [87]:
```
x = factorial(5)
print(x)
```

```
120
```

In [89]:
```
x = 5
y = 15
z = 8
print ("The factorial of 5 is : ", math.factorial(x))
print ("The factorial of 15 is : ", math.factorial(y))
print ("The factorial of 8 is : ", math.factorial(z))
```

```
The factorial of 5 is :  120
The factorial of 15 is :  1307674368000
The factorial of 8 is :  40320
```

In [93]:
```
print(factorial(12.3))
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[93], line 1
----> 1 print(factorial(12.3))

TypeError: 'float' object cannot be interpreted as an integer
```

In [97]:
```
math.factorial(13.7)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[97], line 1
----> 1 math.factorial(13.7)

TypeError: 'float' object cannot be interpreted as an integer
```

trunc() in Python

In [106…
```
print(floor(3.77))
print(trunc(3.5))
print(ceil(3.77))
```

```
3
3
4
```

In [104…
```
print(trunc(-3.5))
```

```
-3
```

In [108…
```
print(ceil(3.5))
```

```
4
```

In [ ]:
```

```

In [ ]:
```

```