

```

"""
Topic:Mathematical Functions
Summary By: Varpe K. M.
Reference : https://www.geeksforgeeks.org/mathematical-functions-python-set-1-numeric-functions/,
"""
"""
In python a number of mathematical operations can be performed
with ease by importing a module named "math" which defines
various functions which makes our tasks easier.

***Special Functions and Constants***

1. gamma() :-
This function is used to return the gamma function of the argument.
commonly used extension of the factorial function to complex numbers
gamma function is defined for all complex numbers except the non-positive integers.
"""

# Python code to demonstrate the working of
# gamma()

# importing "math" for mathematical operations
import math

a = 4

# returning the gamma() of 4
print ("The gamma() of 4 is : ", end="")
print (math.gamma(a))

"""
The gamma() of 4 is : 6.0
"""

2. pi :-
This is an inbuilt constant that outputs the value of pi(3.141592).

3. e :-
This is an inbuilt constant that outputs the value of e(2.718281).
"""

# Python code to demonstrate the working of
# const. pi and e

# importing "math" for mathematical operations
import math

# returning the value of const. pi
print ("The value of const. pi is : ", end="")
print (math.pi)

# returning the value of const. e
print ("The value of const. e is : ", end="")
print (math.e)

"""
The value of const. pi is : 3.141592653589793
The value of const. e is : 2.718281828459045
"""

```

4. inf :-

This is a positive floating point infinity constant.

-inf is used to denote the negative floating point infinity.

This constant is defined in python 3.5 and above.

5. isinf() :-

This function is used to check whether the value is an infinity or not.

6. nan :-

This constant denotes "Not a number" in python.

This constant is defined in python 3.5 and above.

7. isnan() :-

This function returns true if the number is "nan" else returns false.

"""

```
# Python code to demonstrate the working of  
# inf, nan, isinf(), isnan()
```

```
# importing "math" for mathematical operations  
import math
```

```
# checking if number is nan  
if (math.isnan(math.nan)):  
    print ("The number is nan")  
else : print ("The number is not nan")
```

```
if (math.isnan(0)):  
    print ("The number is nan")  
else : print ("The number is not nan")
```

```
# checking if number is positive infinity  
if (math.isinf(math.inf)):  
    print ("The number is positive infinity")  
else : print ("The number is not positive infinity")
```

```
if (math.isinf(9999999999999999)):  
    print ("The number is positive infinity")  
else : print ("The number is not positive infinity")
```

"""

The number is nan

The number is positive infinity

"""