112. Mathematical Analysis of Recursive Algorithms

AIM: To find the Mathematical Analysis of Recursive Algorithm

PROGRAM:

```
import time


def factorial(n):
    """ Function to compute factorial recursively """
    if n == 0 or n == 1:
        return 1
    else:
        return n * factorial(n - 1)
number = 5
start_time = time.time()
result = factorial(number)
end_time = time.time()
execution_time = end_time - start_time


print(f"Factorial of {number}: {result}")
print(f"Execution time: {execution_time} seconds")
```

OUTPUT:

```
Factorial of 5: 120
Execution time: 2.6226043701171875e-06 seconds
```

TIME COMPLEXITY:O(n)