



Trailing Zeros in Factorial

Given an integer n , write a function that returns count of trailing zeroes in $n!$.

Examples :

Input: $n = 5$
 Output: 1
 Factorial of 5 is 120 which has one trailing 0.

Input: $n = 20$
 Output: 4
 Factorial of 20 is 2432902008176640000 which has 4 trailing zeroes.

Input: $n = 100$
 Output: 24

Trailing 0s in $n!$ = Count of 5s in prime factors of $n!$
 = $\text{floor}(n/5) + \text{floor}(n/25) + \text{floor}(n/125) + \dots$

Python

```

# count trailing 0s
# in n !

# Function to return
# trailing 0s in
# factorial of n
def findTrailingZeros(n):

    # Initialize result
    count = 0

    # Keep dividing n by
    # powers of 5 and
    # update Count
    i = 5
  
```

- Dash
- All
- Articles
- Videos
- Problems
- Quiz

« Prev

Next »

Dash

All

Articles

Videos

Problems

Quiz

<<

>>

```
while (n / i>= 1):
    count += int(n / i)
    i *= 5

return int(count)

# Driver program
n = 100
print("Count of trailing 0s "+
      "in 100 ! is", findTrailingZeros(n))
```

Output:

Count of trailing 0s in 100 ! is 24

Time Complexity: $O(\log_5 n)$

Auxiliary Space: $O(1)$

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