



Challenge 6: Nested Loop with Multiplication (Advanced)

A more advanced exercise based on the Big O of an algorithm which involves nested loops and the loop variables increment with multiplication.

We'll cover the following ^

- Problem Statement
- Code Snippet

Problem Statement

Compute the Big O complexity of the code snippet given below. It is better to solve it on a piece of paper and then see if your answer matches with the correct option!

Code Snippet

```
1 n = 10 # can be anything
2 sum = 0
3 pie = 3.14
4 for i in range(n):
5     j = 1
6     while j < i:
7         sum += 1
8         j *= 2
9     print(sum)
10
```





Answer the following question and see if your result matches the correct answer!



Which of the following best describes the Big(O) of the program written above?

A) $O(n \log n)$

B) $O(n)$

C) $O(n^2)$

D) $O(n^2 \log n)$

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