



# Challenge 4: Nested Loop with Multiplication (Basic)

This is a little-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 # n can be anything, this is just an example
2 sum = 0
3 pie = 3.14
4 var = 1
5 while var < n:
6     print(pie)
7     for j in range(1, n, 2):
8         sum += 1
9         var *= 3
10 print(sum)
11
```





If you have computed the time complexity of the code snippet above, 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)  $O(n)$

B)  $O(n \log_2(n))$

C)  $O(\log n)$

D)  $O(n^2)$

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