CSC 212 Tutorial #2
Performance Analysis

Problem 1

Analyze the following code excerpts:

Code	S/E	Frequency	Total

`1` `int product = 1;`
`2` `for (int i = 0; i < 10; i = i + 2)`
`3`   `product = product * i;`
`4` `System.out.println(product);`			

Total			
O			

Code	S/E	Frequency	Total

`1` `int product = 1;`
`2` `for (int i = 0; i < n; i = i + 2)`
`3`   `for (int j = 0; j < 6; j ++)`
`4`   `product = product * i * j;`
`5` `System.out.println(product);`			

Total			
O			

Code	S/E	Frequency	Total
1 `int sum = 0;` 2 `for (int i = 1; i <= n; i++)` 3 `    for (int j = 1; j <= i; j++)` 4 `        sum = sum + 1;` 5 `System.out.println(sum);`			
Total			
O			

Is there any other way to write the above code in better performance?

Code	S/E	Frequency	Total
1 `int sum = 0;` 2 `for (int i = 0; i < n; i++)` 3 `    for (int j = n; j >= 1; j = j/2)` 4 `        sum += 1;` 5 `return sum;`			
Total			
O			

Problem 2

Find the simplest $g(n)$, c, n_o for the following $f(n)$: $5n^3 logn + 20n^2 - 4n + 3$

Problem 3

Find the big O notation for the following function: $2^{logn^4+2} + n^3 logn$