CSC212 - Tutorial 4

Question 1.

List the most common algorithm analysis functions and discuss their meaning and properties. Sort these functions based on their growth.

Question 2.

Some algorithms were analyzed to have the following number of primitive operations:

1. $13 + n^2 + 4$
2. $n^3 + n\log n + 7$
3. $300n + 2n^2 + 300n$
4. $12n/2$

What's the Big-Oh of these algorithms? How do they compare against each other?

Question 3.

Find the total number of primitive operations and the Big-Oh notation for the following methods:

	Code	**S/E**	**Freq.**	**Total**
1	void method1(int n)			
2	{			
3	int sum=0;			
4	for(int i=0; i <= 10; i = i+2){			
5	sum = sum + i;			
6	}			
7	System.out.println(sum);			
8	}			
	Total Operations			
	Big-Oh			

	Code	S/E	Freq.	Total
1	void method2(int n)			
2	{			
3	for(int i=1; i <= n; i = i+1){			
4	for(int j=1; j <= n; j = j+1){			
5	System.out.print(“\t” + i*j);			
6	}			
7	System.out.println();			
8	}			
9	}			
	Total Operations			
	Big-Oh			

	Code	S/E	Freq.	Total
1	void method3(int n)			
2	{			
3	for(int i=1; i <= n; i = i+1){			
4	for(int j=i; j <= n; j = j+1){			
5	System.out.print(“\t” + i*j);			
6	}			
7	System.out.println();			
	i--;			
8	}			
9	}			
	Total Operations			
	Big-Oh			

Question 4.

What is the best case/worst case Big-Oh analysis for all standard ADT List operations using the following implementations: Array, Linked list, Doubly linked list?