Worksheet – Recitation 4

Name:

Big O definition:

O(f(n)): A function g(n) is in O(f(n)) (“big O of f(n)”) if there exist constants c > 0 and N such that |g(n)| ≤ c |f(n)| for all n > N.

1-Calculate the Big O of the below functions- prove your answer

F(n) = $n^2 + 2n + 1$

F(n) = n + lgn

F(n) = $2^n + n!$

F(n) = $5n\lg n + n^2$

Calculate the growth rate (based on n) for the below code (Assume system call takes O (1) to be executed)

```
int counter=0;
While (n>1)
{
        For (int i=0; i < n; i++)
                counter++;
        n = n/2;
}
```

##########

```
int counter =0;
for (i =0 ; i < n ; i++)
    for (j =0 ; j < i ; j++)
       counter++;
```