Lab 7

Q1

f(n) = 5n + 12 gives f(n) =?.

f(n) = 109 gives f(n) =?.

f(n) = n^2+ 3n + 112 gives f(n) = ?

f(n) = n^3 + 1999n + 1337 gives f(n) = ?

f(n) = n + sqrt(n) gives f(n) = ?

Q2 Count the time complexity of the following function ?

a)
```
int sum(int a[], int n){
        int i, total=0;
        for(i=0; i<n; i++)
                total+=a[i];
        return total;
    }
```

b)
```
void Add(int a[,], int b[,], int c[,], int n){
    int i, j;
    for (i=0; i<n; i++)
        for(j=0; j<n; j++)
            c[i,j]=a[i,j]+b[i,j];
}
```

c)

```
 for i=1 to n do
      for j=i  to n do
        x=x+1
    end
end
```

Q3 Prove that $f(n) = 10\ n^2 + 5n + 1$ can be expressed $O(n^2)$

Q4 Prove $O(10n^3 + 24n^2 + 3n \log n + 144)$, it is also $O(n^3)$.