**Complejidad computacional – Actividad 1.1 Funciones Iterativas, Recursivas y su análisis de Complejidad**

**Función sumaDirecta**

|  |  |  |
| --- | --- | --- |
| **Pasos/Algoritmo** | **Cost** | **Times** |
| **if(n<=0)** | **C1** | **1** |
| **return 0;** | **C2** | **1** |
| **return n\*(n+1)/2;** | **C3** | **1** |
| **T = C1+C2+C3** | | |

**Función sumaIterativa**

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| --- | --- | --- |
| **Pasos/Algoritmo** | **Cost** | **Times** |
| **if(n<=0)** | **C1** | **1** |
| **return 0;** | **C2** | **1** |
| **Int sum=0;** | **C3** | **1** |
| **for(int i=1; i<=n ;i++)** | **C4** | **n** |
| **sum=sum+1;** | **C5** | **n-1** |
| **return sum;** | **C6** | **1** |
| **T(n) = C4(n) + C5(n-1) + C1 + C2 + C3 + C6**  **T(n) = n(C4 + C5) + C1 + C2 + C3 + C6 -C5** | | |

**Función sumaRecursiva**

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| --- | --- | --- |
| **Pasos/Algoritmo** | **Cost** | **Times** |
| **if(n<=0)** | **C1** | **n** |
| **return 0;** | **C2** | **1** |
| **If(i=n)** | **C3** | **n** |
| **return i;** | **C4** | **1** |
| **return i+sumaRecursiva(n, i+1)** | **C5** | **n** |
| **T(n) = C1(n) + C3(n) + C5(n) + C2 + C4**  **T(n) = n(C1+C3+C5) + C2 +C4** | | |