***Find the time complexity of –***

1. ***for(i=1;i<=n;i++)***

***for(j=i;j<=n;j++)***

***printf(“Hi");***

***Ans-> \_i\_ \_ j \_***

1. ***n***
2. ***n-1***
3. ***n-2***
4. ***n-3….***

***n n-(n-1)***

***it's time complexity is O(n) that is Quadratic time complexity as i and j both run n times so it becomes n^2.***

***ii)for(i=1; i<=n; i\*=3)***

***for(j=1;j<=n;j++)***

***printf(“Hello");***

***ans-> \_i\_ \_ j\_***

1. ***n***

***3 n***

***9 n***

***27 n…***

***n n***

***1+3+ 9 +27……***

***3^0+ 3^1+ 3^2+ 3^3+………..+ 3^logn***

***Putting to formula->***

***a(1-r^n/1-r)***

***=1(1-3^(logn+1)/1-3)***

***=3^(logn+1)-1/3-1***

***=3^logn+1***

***=3^logn(worst case)***

***Therefore, its time complexity is O(logn) i.e., logarithmic time complexity.***