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

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

printf("Hi");

Answer: -

for line1 time complexity = O(n)

for line2 time complexity = O(n)

for line3 time complexity = O(1)

Then the final time complexity = O(n)\* O(n) \*O(1)= O(n2)

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

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

printf("Hello");

Answer: -

Line 1 will run log n times. The time complexity becomes O(log n).

Line 2, the inner loop will run a max of n-1 times for each outer loop iteration. Time complexity is O(n-1) = O(n)

Line 3 is of constant complexity O(1).

Total time complexity is O(log n) \* O(n) \* O(1) = O(n log n)