

1. Find the time complexity of the following

(a) For ($i=1; i \leq n; i++$) $\rightarrow n$

for ($j=1; j \leq n; j++$) $\rightarrow n(n+1) = n^2 + n$

print("Hi"); $\rightarrow 1$

$$f(n) = O(n^2)$$

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(b) For ($i=1; i \leq n; i+=3$) $\rightarrow O(\log_3 n)$

For ($j=1; j \leq n; j++$) $\rightarrow O(n^2)$

print("Hello"); $\Rightarrow O(\log_3 n + n^2)$

~~$f(n) = O(\log_3 n + n^2)$~~

$\Rightarrow O(\log n + n^2)$

$f(n) = O(n^2)$

$f(n) = O(n^2 \log n)$