H.W

① `i = n ; i > 0 ; i /= 2`

$n = 32$

$n, \frac{n}{2}, \frac{n}{4}, \frac{n}{8}, \dots, 1$

$32, 16, 8, 4, 2, 1$

$2^x \Rightarrow n$

$x = \log_2 n$

$\boxed{O(\log n)}$

② `i = n ; i > 1 ; (i /= i)` $\Rightarrow \frac{i}{i} = 1 \rightarrow$ [illegible]

$n = 5 \quad n, 1, 1, 1, 1, 1$

[illegible] ↳ ek time run karega.

$\frac{5}{5} - \frac{5-1}{1} \quad \therefore \boxed{T.C = O(1)}$

③ `i = 0 ; i < n ; i += k` `i = i + k`

$100, \quad k = 3$

$0, 3, 6, 9, \dots, \frac{100}{3}$

$i = 0, k, 2k, \dots, n$

$\therefore a_x = 0 + (x-1)k \qquad \boxed{T.C = O(n)}$

$kx + k \leq n$

$kx \leq n$

$x = \frac{n}{k} \Rightarrow O(n)$

④ $i=2 ; i<n ; i = i*2$

n = 100

2 , 2 < 100,

2, 4, 8 . .

$2^x = n$

$\log_2 n = x$

$O(\log n)$

⑤ $i=0 ; i<n ; i++$

T.C = $O(n)$

⑥ $i=0 \quad i<n , i++ \quad -n$

$j=0; j<i , j++$

0 ---- n-1

0, 1 . . . . n-1

0, 1, 2 . . . . n-1

1, 2, 3 . . . n-1 =

$\therefore \frac{n(n+1)}{2} * n$

$\frac{n^2}{2} + \frac{n}{2} * n$

$(n^2 * n)$

$O(n^2)$