

Algorithms 5

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1 Polynomial Version 1

First for loop cost: c_1 times n

Sum c_2 times $n - 1$

$$T(n) = c_1n + c_2(n - 1)$$

$$= c_1n + c_2n - c_2$$

$$= (c_1 + c_2)n - c_2$$

Which gives us $O(2n)$

2 Polynomial Version 2

First for loop cost: c_1 times n

Append c_2 times $n - 1$

Second for loop cost: c_3 times n

Sum c_4 times $n - 1$

$$T(n) = c_1n + c_2(n - 1) + c_3n + c_4(n - 1)$$

$$= (c_1 + c_2 + c_3 + c_4)n - (c_2 + c_4)$$