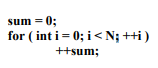
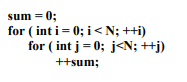
**Fragment 1**



|  |  |
| --- | --- |
| **Expression** | **# of expressions evaluated** |
| sum = 0 | 1 |
| i =0 | 1 |
| i < N | N + 1 |
| ++i | N |
| ++sum | N |

|  |
| --- |
| T(N) = 3N + 3 = θ(N) |

**Fragment 2**



|  |  |
| --- | --- |
| **Expression** | **# of expressions evaluated** |
| sum = 0 | 1 |
| i = 0 | 1 |
| i < N | N + 1 |
| ++i | N |
| S1 | N \* T1(N) = N(3N + 2) = 3N^2 + 2N |

|  |
| --- |
| T(N) = 3N^2 + 4N + 3 = θ(N^2) |

**Fragment 3**



|  |  |
| --- | --- |
| **S1 Expression** | **# of expressions evaluated** |
| j < N\*N | N^2 + 1 |
| j = 0 | 1 |
| ++j | N^2 |
| ++sum | N^2 |

|  |
| --- |
| T(N) = 3N^2 + 2 |

|  |  |
| --- | --- |
| **Expression** | **# of expressions evaluated** |
| sum = 0 | 1 |
| i = 0 | 1 |
| i < N | N + 1 |
| ++i | N |
| S1 | N\*T1(N) = N(3N^2 + 2) = 3N^3 + 2N |

|  |
| --- |
| T(N) = 3N^3 + 4n+3 = θ(N^3) |

**Fragment 4**

****

|  |  |
| --- | --- |
| **S1 Expression** | **# of expressions evaluated** |
| J = 0 | 1 |
| J < I | I + 1 |
| ++J | I |
| ++sum | I |

|  |
| --- |
| 3I + 2 |

|  |  |
| --- | --- |
| **Expression** | **# of expressions evaluated** |
| sum = 0 | 1 |
| i = 0 | 1 |
| i < N | N + 1 |
| ++i | N |
| S1 | N \* T1(I) = N(3I+2) |

|  |
| --- |
| == θ(N^2) |

**Fragment 5**

****

|  |  |
| --- | --- |
| **S1 Expression** | **# of expressions evaluated** |
| K = 0 | 1 |
| K < J | J + 1 |
| ++K | J |
| ++sum | J |

|  |
| --- |
| T(J) = 3J + 2 |

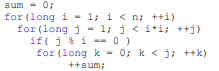
|  |  |
| --- | --- |
| **S2 Expression** | **# of expressions evaluated** |
| J = 0 | 1 |
| J < I^2 | I^2 + 1 |
| ++J | I^2 |
| S1 | I^2 \* T(J) = (3/2)I^4 + (I^2 / 2) - 2 |

|  |
| --- |
| T(I) = (3/2)I^4 + (5/2)I^2 |

|  |  |
| --- | --- |
| **Expression** | **# of expressions evaluated** |
| Sum = 0 | 1 |
| I = 0 | 1 |
| I < N | N + 1 |
| ++I | N |
| S2 | N \* T(I) |

|  |
| --- |
|  |

**Fragment 6**

****

|  |  |
| --- | --- |
| **S1** | **# of expressions used** |
| K = 0 | 1 |
| K < J | J + 1 |
| ++K | J |
| ++sum | J |

|  |
| --- |
| T(J) = 3J + 2 |

|  |  |
| --- | --- |
| **S2** | **# of expressions used** |
| J = 1 | 1 |
| J < I^2 | I^2 |
| ++J | I^2 - 1 |
| J % I | I^2 - 1 |
|  |  |

|  |  |
| --- | --- |
| **Expression** | **# of expressions used** |
| Sum = 0 | 1 |
| I = 0 | 1 |
| I < N | N |
| ++I | N |