

Review Q & A - Apr. 16

Final Exam

Consider the following fragment of Java code:

```

1 public int triangularSum (int[] a, int n) {
2     int sum = 0;
3     for (int i = 0; i < n; i++) {
4         for (int j = i; j < n; j++) {
5             sum += a[j];
6         }
7     }
8     return sum;
9 }

```

For each iteration of the outer loop (between Line 3 and Line 7), how many primitive operations are executed from Line 5? Choose the best answer.

$$\sum_{i=1}^{n-1} 1$$

$$i = 0, 1, 2, \dots, n-1$$

$$[i, i+1, \dots, n-1]$$

$$\downarrow$$

$$[i, n-1]$$

$$\downarrow$$

$$(n-1) - i + 1$$

$$= \boxed{n - i}$$

$$\boxed{} \times \boxed{}$$

$$\downarrow \quad \quad \downarrow$$

$$\# \text{ iterations} \quad \quad \# \text{ ops}$$

```

1  int x = 0; ①
2  for(int i = 0; i < n + 1; i++) { ②
3      for(int j = i + 1; j < n - 1; j++) { ③
4          x += i * j; ④
5      } ⑤
6  } ⑥

```

④ Pos for each value of j

$i = 0$

1
2
:
:
n

false $n+1$

$(n+2)$

2. $(n+2)$

$2n+4$

Singleton tree

$n=0$



← root.

↓
complete and full