COMP 3761 Lab #1
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(1.1)

A)

$$\sum_{i=0}^{n-1} (i * i + 1)^2$$

B)

$$\sum_{i=1}^{n} \sum_{m=1}^{i-1} (i+1)*2^{(m-1)}$$

C)

$$\sum_{i=1}^{n} i \sum_{j=1}^{n} \sum_{k=1}^{n} k$$

D)

$$\sum_{i=0}^{n-1} \sum_{j=0}^{i} (i + j + 1)$$

(1.2)
A) Multiplication
B) Multiplication
C) Multiplication
D) Addition

(1.3)

(1.4)
A) $O(n)$
B) $O(n^2)$
C) $O(n^3)$
D) $O(n^2)$

2.

A)

```
inversionCount(A[0..n-1])
   count ← 0
   for i to n-1
      for j ← i+1 to n
         if A[i] > A[j]
            count++;
```

B+C+D+E)

Output:

20:26 ~/Desktop/3761/lab $ javac lab1.java && java LabOne
Enter a file name: IntegerArray_10000.txt
Number of inversions: 24936914
Number of element comparisons: 49995000