

CS 2710

Assignment 5

Question 3

```
int t1 = 0;           FQ:1
for (int a = n; a > 0; a--) {
    int t2 = 0;       FQ:(1, n+1, n)
    for (int b = a + 1; b <= n; b++) {
        t1 = t1 + b * b;   FQ:n
        t2 = t2 + 3 * a;   FQ:(n, n(n), n(n-1))
    }                     FQ:n(n-1)
    System.out.println(t2); FQ:n(n-1)
}                           FQ:n
System.out.println(t1);     FQ:1
```

$$T(n) = 4n^2 + 5n - 3n + 4$$

$$T(n) = 4n^2 + 2n + 4$$

| n | T(n) | 5n ² |
|---|------|-----------------|
| 1 | 10 | 5 |
| 2 | 24 | 20 |
| 3 | 46 | 45 |
| 4 | 76 | 80 |

$T(n)$ is $O(n^2)$ for $c=5$ and $n \geq 4$.