

Quickcheck 03: Analysis

Name:

Consider the following recursive function. You may assume that the input will be a multiple of 3.

```
public int test(int n) {
    if (n <= 0) {
        return 2;
    } else {
        int curr = 0;
        for (int i = 0; i < n; i++) {
            curr += 1;
        }
        return curr + test(n - 3);
    }
}
```

(a) Write a recurrence modeling the *worst-case runtime* of test. When counting operations, feel free to round to a simple function (e.g. you could use n^2 instead of $n^2 - n + 3$).

(b) Unfold the recurrence into a summation (for $n \geq 0$).

(c) Simplify the summation into a closed form (for $n \geq 0$).

Another question

Do you have any questions about this course? It could be about policy, content, instructors, TAs, etc.