

CS 314 EXAM ONE REVIEW — $T(N)$ SHORT ANSWER

1. What is the $T(N)$ of method a? ($N = \text{data.length}$)

```
public static int a(int[] data){
    int count = 0; // 1
    for(int i = 2; i < data.length - 2; i++){ // 1 + ((N-4) + 1) + (N-4)
        for(int j = i - 2; j < i + 2; j++){ // (N-4)(1 + 5 + 4)
            count += data[j]; // (N-4)(4)(1)
        }
    }
    return count; // 1
}
```

Solution: $T(N) = 16N - 60$

2. What is the $T(N)$ of method b? ($N = \text{data.length}$, assume N is *even*)

```
public static int b(int[] data){
    int i = 0; // 1
    int j = data.length - 1; // 1
    while(i < j){ // (N/2) + 1
        int temp = data[i]; // (N/2) (1)
        data[i] = data[j]; // (N/2) (1)
        data[j] = temp; // (N/2) (1)
        i++; // (N/2) (1)
        j--; // (N/2) (1)
    }
    return data[i]; // 1
}
```

Solution: $T(N) = 3N + 4$