

Name: _____

Consider the following method, `increment(int[] a)`:

```
1 void increment(int[] a) {
2     int i = 0;
3     while (i < a.length) {
4         a[i] = a[i] + 1;
5         i = i + 1;
6     }
7 }
```

Question 1. Suppose the array `a` is initialized to `[0, 0, 0, 0]`. If two threads concurrently call `increment(a)`, what are *all* possible values of `a` when the threads terminate?

Note that only the array `a` is shared between the threads. The variable `i` is thread-local, meaning that each thread has its own variable `i`.

Question 2. Now suppose k threads concurrently call `increment(a)`. What are the possible values of `a` when the threads terminate?