

# Worksheet #27: Liveness Guarantees

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Name: \_\_\_\_\_

Netid: \_\_\_\_\_

```
/** Atomically adds delta to the current value.
 *
 * @param delta the value to add
 * @return the previous value
 */
public final int getAndAdd(int delta) {
    for (;;) {
        int current = get();
        int next = current + delta;
        if (compareAndSet(current, next))
            // commit
            return current;
    }
}
```

**Assume that multiple tasks call `getAndAdd()` repeatedly in parallel. Can this implementation of `getAndAdd()` lead to a) deadlock, b) livelock, or c) starvation? Write and explain your answer below**

