Consider the following computation problem.

**Is Array Increasing?**

*Precondition:* An integer array $A$ with some positive length $n$ is given as input.

*Postcondition:* The Boolean value true is returned if $A[i] < A[i + 1]$ for every integer $i$ such that $0 \leq i \leq n - 2$. The Boolean value false is returned, otherwise.

Consider, as well, the following algorithm.

```java
boolean arrayIncreasing ( integer[] A ) {
1. integer i := 0
2. while (i ≤ A.length − 2) {
3.   if (A[i] ≥ A[i + 1]) {
4.     return false
5.   } else {
6.     i := i + 1
7.   }
8. return true
}
```

1. State a **loop invariant** for the above algorithm, when considering it as an algorithm for the “Is Array Increasing?” problem.

2. Use this loop invariant to prove that this algorithm is partially correct.