1. (10 points) Given the following algorithm:

**Algorithm UniqueElements(A)**

**Input:** n-element array of numbers, A[1...n]

**Output:** Returns “true” if all items are unique and “false” otherwise

1. for ( i = 1 to n−1 )
2. for ( j = i+1 to n )
4. return true

(a) Is there a difference in $T(n)$ (measured by number of operations executed) for best- and worst-case input? If your answer is “yes”, give examples of best- and worst-case inputs. If your answer is “no”, explain why there is no difference between best- and worst-case inputs.

(b) Give the line number(s) of the basic operation. Express the running time using $\theta$ notation if there is no difference between best-case and worst-case running times, or give best-case and worst-case asymptotic running time using $O$ and $\Omega$ if there is a difference.