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HANDS ON - 4

PROBLEM 2

Q2 Prove the time complexity of the algorithms.

The for loop iterates through each element of the array, taking $O(n)$ time.

The set operations are typically $O(1)$, resulting in a combined $O(n)$ for the entire loop.

Q3 Ways to improve implementation

While the implementation has a good time complexity, it uses extra space for the set. If memory usage is a concern, in-place modifications is better.