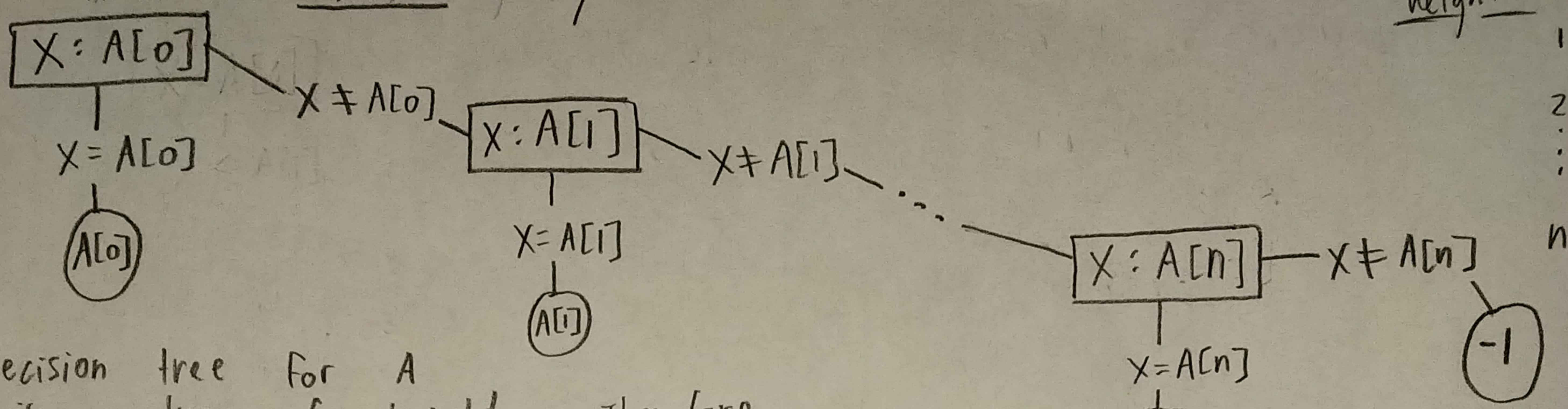


CSC 225 Written Assignment 3

1) Suppose A is the unsorted array $A[1, \dots, n]$,



The decision tree for A results in a tree of height n . Therefore, an unsorted array A of size n the lower bound of the worst case running time is $\Omega(n)$

Suppose A is the sorted array $A[1, \dots, n]$

The decision tree for A results in a tree of height $\log_3 n$ since each tree of height h has 3^h leaves.

$$\log_3 n = \Omega(\log n)$$

Therefore for a sorted array of size n the lower bound of the worst case running time is $\Omega(\log n)$

