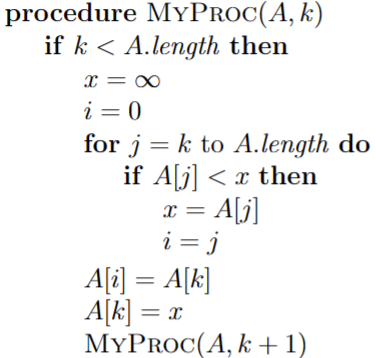
Homework #2

# Question 1



The time it takes to sort the remaining unsorted elements after the minimum element has been swapped into its proper position is represented by the first term in the recurrence, T(n-1), and the time it takes to scan the unsorted elements to find the next minimum element is represented by the second term, n-1. is the runtime during the base case.

# Question 2

# Question 3

Combining both definitions, we get

Since is bounded between -best case- and -worst case- and the above is the definition of

# Question 4

## Definition

## Solution

Let and and we observe that holds for all

# Question 5

## Definition

## Solution

and we observe that holds for all