

# MTH 4320 Homework 6

Yaohui Wu

March 19, 2024

## Problem 1

*Solution.* If the cell is empty then we can insert with constant time so the runtime is  $O(1)$ . If the cell is not empty then there is a collision so we need to iterate over the other cells to find an empty one. Therefore, the time complexity of insertion is  $O(n)$ . We have to iterate over the cells to find the element so the time complexity of searching is  $O(n)$ . ■

## Problem 2

## Problem 3

## Problem 4