

Problem Set 4

Question 1

Kim is new to programming and designs the following hash function for her hash table.

```
int computeHash(int key) {  
  
    int hash = 0;  
    for (int i = 1; i <= key; i++) {  
        hash += i;  
    }  
  
    return hash;  
}
```

- a-** What is the time complexity of the hash function?
- b-** Can we make the hash function take constant time?
- c-** What is the space requirements/complexity if Kim chooses to stick with her hash function and wants to ensure no collisions happen?