#CSE 321 Homework 5

Question 1:

I have three loops for the my algorithm:
First loop complexity => #cities
Second loop complexity => #months * #cities * #cities
third loop complexity => #cities
So if I say months is m count, cities is c count my algorithm complexity will be $T(n) \in O(mc^2)$ //
My Algorithm => I make a dpTable and fill the with suitable numbers. Then I used the table for the result. I used 4 parameters. They are cities number, month number, operationCost (the table given to us) and relocationCost (I made the list using the Shuttling cost (it gave the values according to data)).

Question 2:

I wrote 3 functions. getKey function complexity is O(1). Check function complexity is O(1). findOptimalList function complexity is "sort complexity + n"
So my algorithm complexity will be $T(n) \in O(n)$ //
My algorithm is very simple like that just I sorted then I checked list.

Question 3:

My algorithm just making two number subset sums. Because I think the question has some logical mistakes so I tried the solution so I write the code. Sum first and last element then try others, so again again. Also checking sum controls.
My algorithm complexity is "sort complexity + n" so I can say like that:
$T(n) \in O(n)$ //

Question 4:

The question has some mistakes because of the example don't finish correctly:

```
A L I G N M E N T
| | | | | | | | |
S L L - - M E - -
```

Also the example should have 2 gap and cost should be 2. I wrote my algorithm according to the concept.

I thought like minimum edit distance. So we can see diag, delete, insert values. If we think all functions and loops my algorithm complexity will be $T(n) \in O(mn)$ (m = first string length, n = second string length)
//

Question 5:

The problem was about operation count. Our operation count was 2 so I used the opCount. I wrote a loop (from 0 to len(arr)) the loop traverse and finding the gSum.

My Algorithm complexity is $T(n) \in O(n)$ // Because of I used just one loop and it traverses from 0 to len(arr).