INFSCI 2591 – Algorithm Design – Project 1

Problem 1 Outputs:

Test Case 1

```
In [7]: arraySort(3)

        3
        7
        9
Out[7]: [3, 7, 9]
```

Test Case 2

```
In [8]: arraySort(4)

        2
        7
        9
        1
Out[8]: [1, 2, 7, 9]
```

Test Case 3

```
In [9]: arraySort(8)

        1
        7
        10
        15
        3
        8
        12
        18
Out[9]: [1, 3, 7, 8, 10, 12, 15, 18]
```

Test Case 4

```
In [10]: arraySort(19)

         1
         3
         5
         5
         15
         18
         21
         5
         5
         6
         8
         10
         12
         16
         17
         17
         20
         25
         28
Out[10]: [1, 3, 5, 5, 5, 5, 6, 8, 10, 12, 15, 16, 17, 17, 18, 20, 21, 25, 28]
```

Problem 2 Outputs:

Test Case 1

```
In [9]: acMultiplication(7000 , 7294)
```

```
51058000
```

Test Case 2

```
In [10]: acMultiplication(25 , 5038385)
```

```
125959625
```

Test Case 3

```
In [11]: acMultiplication(-59724 , 783)
```

```
- 46763892
```

Test Case 4

```
In [12]: acMultiplication(8516 , -82147953548159344)
```

```
- 699571972416124973504
```

Test Case 5

```
In [13]: acMultiplication(45952456856498465985 , 98654651986546519856)
```

```
4533423639104649634397093450504343098160
```

Test Case 6

```
In [14]: acMultiplication(-45952456856498465985 , -98654651986546519856)
```

```
4533423639104649634397093450504343098160
```

Problem 3 Outputs:

Test Case 1

In [8]: `rectMultiplication(7000 , 7294)`

51058000

Test Case 2

In [14]: `rectMultiplication(25 , 5038385)`

125959625

Test Case 3

In [15]: `rectMultiplication(-59724 , 783)`

-46763892

Test Case 4

In [11]: `rectMultiplication(8516 , -82147953548159344)`

-699571972416124973504

Test Case 5

In [12]: `rectMultiplication(45952456856498465985 , 98654651986546519856)`

4533423639104649634397093450504343098160

Test Case 6

In [13]: `rectMultiplication(-45952456856498465985 , -98654651986546519856)`

4533423639104649634397093450504343098160

For Ala Carte and Rectangle multiplication I first used java but after a couple of iterations, it started throwing garbage values, so I looked into it to find out if it's my computer or the programming language.

Then I tested the same logic in python and it compiled correctly so I decided to use python for this project as it gave correct values