**Problem Set 2, Part I**

**Problem 0:** *You will make a separate submission for this question on Gradescope.  
See the assignment for more details.*

**Problem 1: Understanding code that uses an array**

**1-1)**

|  |  |
| --- | --- |
| **i** | **values** |
| - | {1, 3, 5, 7, 9, 11, 13} |
| 0 | 3 + 1 -> 4 |
| 1 | 5 + 1 -> 6 |
| 2 | 7 + 1 -> 8 |
| 3 | 9 + 1 -> 10 |
| 4 | 11 + 1 -> 12 |
| 5 | 13 + 1 -> 14 |
| - | {4, 6, 8, 10, 12, 14} |

**1-2)** contents of array just before the method returns:   
 {4, 6, 8, 10, 12, 14, 2}

**1-3)**

We will see the changes made by the call to the mystery() method.

Because when we execute the method, the value of arr would be changed. If we substitute arr into mystery() method, we can see how each values in arr has been changed step by step as 1-1) shows

**Problem 2: Memory management and arrays**

**2-1)**

a

b

c

main

Stack

Heap

2

4

6

8

0

0

0

0

2

4

6

8

0

0

0

0

0

0

0

0

0

0

0

0

**2-2)**

0

0

0

0

a

b

c

main

a

b

c

foo

Stack

Heap

2

4

6

8

2

4

6

8

0

0

0

0

2

4

6

8

0

0

0

0

0

0

0

0

**2-3)**

a

b

c

main

a

b

c

foo

Stack

Heap

2

4

6

8

3

5

7

9

3

5

7

9

3

5

7

9

0

0

0

0

2

4

6

8

0

0

0

0

**2-4)**

a

b

c

main

a

b

c

foo

Stack

Heap

2

4

6

8

3

5

7

9

2

4

6

8

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

**Problem 3: Two-dimensional arrays**

**3-1)**

**图形用户界面, 文本, 应用程序

描述已自动生成**

**3-2)**

图示

低可信度描述已自动生成

**3-3)**

图形用户界面

描述已自动生成

**Problem 4: Our Rectangle class revisited**

**4-1)**

type of method:

header:

**4-2)**

type of method:

header:

**4-3)**

problems in code:

rewritten version: