CSE220 Practice Sheet 2

1. Given a circular array of integers, do the following operations stepwise:

Value	25	a + 15	52	25	0	0	b + 25	25	5	19	5 + a	5	6 + b
Index	0	1	2	3	4	5	6	7	8	9	10	11	12

Where “a” is the last three digits of your BRACU student id % 35 and “b” is your birth year % 44.

The start of the array is index 6.

[Note: if the capacity of the array is full, resize it by its previous capacity + 3].

a. Remove 25 by right-shifting.
b. Insert birthyear%67 at position 5.
c. Insert studentId%13 at position 8.
d. Insert studentId%23 at position 2.
e. Insert birthyear%61 at position 3.
f. Remove 5 by left-shifting.
g. Remove 52 by left-shifting.
h. Right rotate the array 3 times.
i. Left rotate the array by 4 times.

You have to show the simulation of each operation separately, no coding is required.

2. Given a circular array, complete the method stated below where **cir** is the circular array, **start** is the starting index of that array and **size** is the number of elements. All the elements of this array are residing one after another starting from index **start** leaving all the empty slots at the end (if any). Your job is to remove all the positive numbers from that array. If there is no positive number in the array, throw noPosNumException. After removal, say there are k non positive numbers left. Your job is to ensure that these k numbers reside one after another starting from index **start**. This method returns the number of removed elements.

Example 1:

0 (start)	2	-3

Returns 1

0 (start)	-3

Example 2:

4	-5	-6	1 (start)	-2	-3

Returns 2

-6	-2 (start)	-3	-5

Example 3:

-4	-5	-1 (start)	-2	-3

noPosNumException

```
public int removePos(int [] cir, int start, int size) throws
Exception
{
  // TO DO
}
```

OR

```
def removePos (cir, start, size):
   pass
```

3. Given a circular array of integers and a number, remove all the occurrences of the number in the array. [Consider the start index cannot be changed].

Sample Input		Sample Output
{1,2,5,6,4,0,0,1,1,2,3,1} and 2	Start index 7	{5,6,4,0,0,0,1,1,3,1,1}
{1,2,5,6,4,0,0,1,1,2,3,1} and 1	Start index 7	{4,0,0,0,0,0,0,2,3,2,5,6}

```
/*
* @param cir is the reference of the circular array
* @param start is the starting index of the array
* @param size is the number of elements in the array
* @param elem is the element to be removed
*/
public void remove (int [] cir, int start, int size, int elem){
      //to do
}
```

OR

```
def removePos (cir, start, size):
   pass
```