Problem 1: Execute the following, drawing and updating the memory diagram for each variable and object involved.

Problem 1 Code

`number = 2`
`other_number = number`
`number += 1`

Problem 1 Diagram

Problem 2: Execute the following, drawing and updating the memory diagram for each variable and object involved.

Problem 2 Code	Problem 2 Diagram

`a = []`
`b = [1]`
`a.insert(0, b)`
`b[0] = 4`
`a.insert(0, b)`
`print(a)`	

Problem 3: Implement the following function to create a true copy of a list. Hint: one possible approach uses a loop and the append method.

```
def copy_list(in_list):
    """ Return a new list object containing the same elements
    as in_list.
    Precondition: in_list's contents are all immutable. """
```

Problem 4: Implement this function, which removes half the elements from the given list.

```
def snap(avengers):
   """ Remove a randomly chosen half of the
       elements from the given list of avengers """
```