

Note: the sample codes are given in Python.

1. Output for n = 20:

Length: 0; Size in bytes: 72
Length: 4; Size in bytes: 104
Length: 8; Size in bytes: 136
Length: 16; Size in bytes: 200

2. Add 5 different elements at different positions and verify that they are in order.

```
dynamic_array = DynamicArray()
dynamic_array.insert(0,1)
dynamic_array.insert(0,2)
dynamic_array.insert(1,3)
dynamic_array.insert(3,5)
dynamic_array.insert(2,4)
print(dynamic_array) # it prints [2,3,4,1,5]
```

3. Add 5 different elements into ArrayQueue and remove them checking that they are in the same order of insertion.

```
queue = ArrayQueue()
queue.remove()      # it prints "Queue is empty"
queue.add(1)
queue.add(2)
queue.add(3)
queue.remove()      # it returns 1
queue.add(4)
queue.remove()      # it returns 2
queue.remove()      # it returns 3
queue.add(5)
queue.remove()      # it returns 4
queue.remove()      # it returns 5
queue.remove()      # it prints "Queue is empty"
```

4. Add 5 different elements in ArrayStack and remove them checking that they are in order.

```
stack = ArrayStack()
stack.add(0,1)
stack.add(0,2)
```

```
stack.add(1,3)
stack.add(3,5)
stack.add(2,4)
print(stack.get(0))    # it prints 2
print(stack.get(1))    # it prints 3
print(stack.get(2))    # it prints 4
print(stack.get(3))    # it prints 1
print(stack.get(4))    # it prints 5
```

5. Same as 3.