

CS61B Week 3: Arrays

1. What does the following code snippet print?

```
int[] x = {1, 2, 10, 4, 5};
int[] y = x;
x[2] = 3;
System.out.println(y);
System.out.println(Arrays.toString(y));
```

2. `/** Return a new array that is the reverse of the given array L.`

```
 * Don't modify the original array. */
public static int[] reverseList(int[] L) {
```

3. Fill in the blanks with either the word 'static' or 'instance' (non-static).

- (a) _____ methods should be invoked with the class name, without the need for creating an instance of the class.
- (b) You must instantiate an object to call a(n) _____ method of the class.
- (c) _____ methods cannot access instance variables or instance methods directly; they must use an object reference.
- (d) _____ methods cannot use the 'this' keyword.

4. `/** The given array LISTOFNAMES is a list of names (all lowercase)`

```
 * of more than 9000 important people. Every letter of the alphabet
 * except one starts at least one of the names. Return the character
 * that is not the first letter of any of the names in the given list. */
public static char missingFirstLetter(String[] listOfNames) {
```

```
5. /** Return an array that is the reverse of the given array.  
    * Don't use 'new'. You may modify the original array. */  
    public static int[] destructiveReverseList(int[] L) {
```

Sample Interview Question of the Week:

You are given an array of doubles of length n (could be very large). You want to return a new array of doubles of length n such that: for all i where $0 \leq i < n$, the number at index i of this new array is the product of every number except the one at index i in the original array. For example, if you are given the array $\{2, 5, 3\}$, you should return $\{15, 6, 10\}$. The catch is, you can only multiply numbers together—you cannot use divide! The most efficient solution should be able to do this in less than $3n$ multiplications.