

Model 1 Example Code

The following examples are found in *Model1.java*. Open this file on your computer, and run the program. Record the output of each example in the space below.

```
1 int[] nums;  
2 nums = new int[3];  
3  
4 nums[0] = 74;  
5 nums[1] = 11;  
6 nums[2] = 21;  
7  
8 System.out.println(nums.length);  
9 System.out.println(nums);
```

The output is:

```
1 ArrayList<Integer> nums;  
2 nums = new ArrayList<Integer>();  
3  
4 nums.add(74);  
5 nums.add(11);  
6 nums.add(21);  
7  
8 System.out.println(nums.size());  
9 System.out.println(nums);
```

The output is:

Questions (20 min)

Start time:

1. Compare the examples line by line, and summarize the differences.

a) Line 1:

b) Line 2:

c) Lines 3–6:

d) Line 8:

2. What is the main difference in the output of these two examples?

3. What happens if you add the following code after Line 6 in the array example? Verify your answer by editing *Model1.java* and running the program.

```
nums[3] = 59;
```

4. In *Model1.java*, comment out the line you just added in the previous question. Then add the following line to the ArrayList example. What is the resulting output?

```
nums.add(59);
```

5. Based on your previous answer, what ability do ArrayLists have that arrays do not?

6. Add the following line to the ArrayList example. What is the result?

```
nums[0] = 33;
```

7. In the ArrayList example, is *nums* an *array* or an *object*? Justify your answer.