**CMSC 113: Computer Science I**

**Array Exercises**

You will complete these exercises *on paper*, both to prepare for the upcoming exam and to give you and your partner practice reading and understanding code.

1. Write a function that returns the smallest element in an array. You may assume that the array has at least one element.

public int minElement(int[] nums)

{

}

Test your function on the array containing {8, 3, 1, 5, 9}.

1. Write a function that returns the *index* of the smallest element in an ArrayList. So, if the ArrayList contains the numbers {8, 2, 9, 5, 1, 3}, your function would return 4, the index of that 1.

public int minIndex(ArrayList<Integer> nums)

{

}

Test your function on the ArrayList containing {8, 3, 1, 5, 9}.

1. Write a function that returns the sum of the elements in an array.

public double sum(double[] nums)  
{

}

Test your function on the array containing {8, 3, 1, 5, 9}.

1. Write a function to append two ArrayLists by inserting all the elements from the second into the first, in order. So, if the first ArrayList contains {3, 9, 1} and the second contains {5, 7, 3, 6}, then the result will contain {3, 9, 1, 5, 7, 3, 6}.

public ArrayList<Integer> append(ArrayList<Integer> a,

ArrayList<Integer> b)

{

}

Test your function on the inputs {9, 6} and {7, 1, 3}.

1. Write a function that finds the minimum in a *two-dimensional* array. So, for the input {{5, 3, 2}, {9, 4, 1}, {8, 9, 3}}, your function would return 1. You may assume that the array is rectangular (each row has the same length) and has at least one element.

public int min2d(int[][] nums)

{

}

Test your function on the example given above.