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}.

2. 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}.

3. 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}.

4. 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}.

5. 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.