# Assignment – Unit Test Functions Using Loops (Difficult)

In this assignment, we will be using the functions you created during our last meeting as well as our new knowledge of loops. Below I have provided 4 arrays that contain a set of arguments and expected results for each of the functions you built. Your task is to loop through each argument, plug it into your function, and check that the result matches the expected result in the array.

Each array is a multidimensional array with 2 dimensions with the following structure:

|  |  |
| --- | --- |
| Argument1 | ExpectedResult1 |
| Argument2 | ExpectedResult2 |
| Argument3 | ExpectedResult3 |
| Argument4 | ExpectedResult4 |

If you think of the array structured like arr[x][y] then **x** iterates through each argument-result pair (row) and **y** iterates through the columns. So for example, to get the first argument you would use arr[0][0] and to get the first result you would use arr[0][1].

The arrays are not all the same length so you must use the length parameter to know how many loops to iterate through.

Here is an example of how I would test the first argument for the first function:

f1TestArray[0][1] === pow2( f1TestArray[0][0] );

Note that this example doesn't use a loop, while your solution will need to. For each test, you should print to the console the number of the test and the word "passed". If a test fails, you should break out of the loops and print a failure message. If your function is working correctly, all tests should pass. Here are the test arrays, which you can copy directly into your code:

// Test for power of 2 (square) function

var f1TestArray = [ [2,4], ["a",NaN], [7,49], [-8,64] ];

// Test for function that capitalizes the first letter and adds a period

var f2TestArray = [ [1, ""], ["test", "Test."], ["the quick brown fox jumps over the lazy dog", "The quick brown fox jumps over the lazy dog."] ];

// Test for function that flips first and second half of a string

var f3TestArray = [ ["a",""], [1,""], ["abcd", "cdab"], ["fournine", "ninefour"], ["12345", ""] ];

// Test for function that finds the average of an array of four numbers

var f4TestArray = [ [[2,4,6,8],5], ["a",NaN], [[],NaN], [[1,"a",3,4], NaN],

[[9,8,0,1],4.5], [[1,1,1,1],1] ];

Here's an example of my code output when all tests complete successfully:

|  |
| --- |
| Test #1 passed  Test #2 passed  Test #3 passed  Test #4 passed  Test #5 passed  Test #6 passed  Test #7 passed  Test #8 passed  Test #9 passed  Test #10 passed  Test #11 passed  Test #12 passed  Test #13 passed  Test #14 passed  Test #15 passed  Test #16 passed  Test #17 passed  Test #18 passed  All tests completed successfully! |

Here's an example of one of the tests failing (you don't want this to happen!):

|  |
| --- |
| Test #1 passed  Test #2 passed  Test #3 passed  Test #4 FAILED |