

HW4: Released Monday, week 4 and due Thursday, week 4

1. List any students you discussed with on this homework assignment: _____

These should still be your own answers, but it is ok to check answers and discuss your reasoning with your classmates.

Running code snippets from the homework is ok, but please take a moment to read through the code yourself first and figure out what you think it will do—you will learn how the code works much better if you think through it first before checking, *especially* if your initial assessment was wrong.

2. Call by Value vs Call by Reference 1 (2 points)

What is the difference between a call-by-reference parameter and a call-by-value parameter?

3. Call by Value vs Call by Reference 2 (3 points)

Write a void function definition for a function called `falsify` with 2 parameters, both of which are variables of type `bool`, and set the value of both variables to false (0).

Describe if you picked the function parameters to be call-by-reference or call-by-value and why?

4. Array Declaration (4 points)

Give the length and contents (could be unknown/garbage) of each of the following arrays after declaration:

a. `int arr[4] = {0, 1, 2, 3};`

b. `int arr[4] = {4, 5};`

c. `int arr[] = {6, 7};`

d. `int arr[8];`

5. Multidimensional Arrays (6 points)

Assume we want to add all of the numbers in a 3-dimensional array of integers declared as `int arr[3][2][3] = /* initialization values here */;`

- a. How many loops do we need to use to do this?
- b. Which would be better to use—for loops or while loops—and why?
- c. What is the total number of integer elements in this array?

6. Arrays in Functions (3 points)

Given the following function definition:

```
void square(int a[], int size){  
    for(int i = 0; i < size; ++i){  
        a[i] *= a[i];  
    }  
}
```

What will the contents of myArray be after the function is called with the following code?

```
int myArray[4] = {0, 1, 2, 3};  
square(myArray, 4);
```

7. Midterm (2 points)

- a. When is the midterm released? (Date and Time)
- b. When is the midterm due? (Date and Time)