CS31 Written Homework 1: C Arrays

Name(s):

Question 1

Given the following C code snippet, list the `VALUE` and `TYPE` of each expression below.

```
int x = 3, i, myarray[10];
float f = 3.4;
for(i=0; i < 10; i++) {
   myarray[i]  = i % x;
}
```

`1. x + f  2. myarray[4]  3. myarray[4] > myarray[3]  4. myarray`

Question 2

Trace through the following C code, and draw the stack at the execution point indicated in `mystery`, and show the output produced by a complete run of the program. (Assume `stdio.h` has been included.)

```
void print_array(int a[], int s) {                        // YOUR STACK DRAWING
  int i;
  for(i=0; i < s; i++) {
    printf("%d:%d, ", i, a[i]);
  }
  printf("\n");
}
/***********************************/
int mystery(int a[], int s, int y){
  int i, val;
  val = 0;
  for(i = 0; i < s; i++) {
      if(a[i] > y) {
        val++;
        a[i] = a[i] - y;
      }
  }
  // DRAW THE STACK WHEN EXECUTION GETS HERE
  return val;
}
/************************************/
int main() {
  int i, myarray[10], num;
  for(i=0; i < 10; i++) {
     myarray[i] = i;
  }
  printf("Before:\n");
  print_array(myarray, 10);
  num =  mystery(myarray, 7, 3);
  printf("After: num = %d\n", num);
  print_array(myarray, 10);                               // PROGRAM OUTPUT
}
```