

CS31 Written Homework 1: C Arrays Name:

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) {
    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);
}

```