

Name: _____ PID: _____

Does the following C function always terminate? If not, describe all inputs that cause non-termination. If yes, briefly explain why.

```
int mystery(int n) {  
    int count = 0;  
    while (n != 0) {  
        count++;  
        n = n - 2;  
    }  
    return count;  
}
```

Can the following Java method ever throw an exception? If yes, describe all scenarios in which those would happen. If no, explain why it's safe.

```
public static int findMax(int[] arr) {  
    int max = arr[0];  
    for (int i = 1; i < arr.length; i++) {  
        if (arr[i] > max) {  
            max = arr[i];  
        }  
    }  
    return max;  
}
```

List all possible behaviors of the C function below.

```
1 void test(int *a, int *b) {  
2     *a = 20;  
3     *b = 30;  
4     printf("%d\n", *a);  
5 }
```