

CS108 Practice Problems

These are the sort of problems commonly missed on CS108 tests. Generally, questions involving conditionals and loops are missed most frequently, particularly when nesting is involved. There will be problems like these on the test, but there will also be easier ones.

Question 1: (8 points) Convert the following for loop to a while loop with the same behaviour

```
for(int i = 0; i < 10; i++){
    println(i*i);
}
```

Question 2: (8 points) What is printed by the following program?

```
int j;
for(int i = 6; i > 2; i--){
    j = 0;
    while(j < i){
        print(".");
        j++;
    }
    println("");
}
```

Question 3: (8 points) What is printed by the following program?

```
int i = 100;
while(i > 10){
    println(i);
    i = i / 2;
}
```

Question 4: (8 points) What is printed by the following program?

```
// Remember, i is type int, not float
for(int i = 0; i < 100; i++){
    if(i / 95 == 1){
        println(i);
    }
}
```

Question 5: (8 points) Convert the following while loop to a for loop with the same behaviour

```
int i = 10;
int sum = 0;
while(i > 0){
    sum += i;
    i -= 2;
}
println("sum = " + sum);
```

Question 6: (8 points) Convert the following nested if statement to a non-nested if with the same behaviour

```
// a and b are integers, and the values have already been set
if(a > b){
    if(a / 2 > b){
        println("beep");
    } else {
        println("whirr");
    }
} else if(a == b) {
    println("click");
}
```