# CS 1622 – Homework 5
## Due: Tuesday, April 17, 2018, at the start of class

Please submit a typewritten document. I'd prefer you draw your graphs on the computer, but if this is a challenge, you may hand draw them neatly on the paper by hand.

1.) Identify the basic blocks in the following sequence of IR code and construct the Control Flow Graph:

```
        x ≔ 0
        c ≔ 0
L1:     x ≔ x * 2
        a ≔ x % 5
        b ≔ a == 0
        iftrue b goto L2
        c ≔ x + 1
        goto L2
        c ≔ x + x
L2:     b ≔ x < 10
        iftrue b goto L1
        return c
```

2.) Perform liveness analysis on the variables in the above code statement by statement. Show each iteration of the algorithm in terms of live-in and live-out.

3.) Construct the interference graph and perform register allocation using K=3 registers. Show the order that simplify removes the nodes from the graph and then the resulting colors as it is rebuilt.