**CS 6501 - Spring 2020 - Problem 2 Name:**

Assigned: January 16, 2020

Due: January 23, 2020

At the beginning of class on the due date, submit your neatly presented solution with this page stapled to the front (10 points).

Given the following program (in pseudo-like language), construct two control flow graphs for the program. In the first, use maximal basic blocks; in the second, place each statement in its own basic block. In both cases, label the nodes in the graphs with the numbers of the program statements.

procedure sqrt(real x):real real x1,x2,x3,eps,errval;

begin

1. x3 = 1

2. errval = 0.0

3. eps = .001

4. if (x <= 0.0)

1. output("illegal operand");
2. return errval;
3. else

8. if (x < 1)

9. x1 = x;

10. x2 = 1;

1. else
2. x1 = eps;

13. x2 = x;

14. endif

15. while ( (x2-x1) >= 2.0\*eps ) 16. x3 = (x1+x2)/2.0

17. if ( (x3\*x3-x)\*(x1\*x1-x) < 0)

18. x2 = x3;

19. else

20. x1 = x3;

1. endif;
2. endwhile;
3. return x3;
4. endif;
5. end.

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