

**CS 6501 - Spring 2020 - Problem 4****Name:** \_\_\_\_\_

Assigned: Jan. 30, 2020

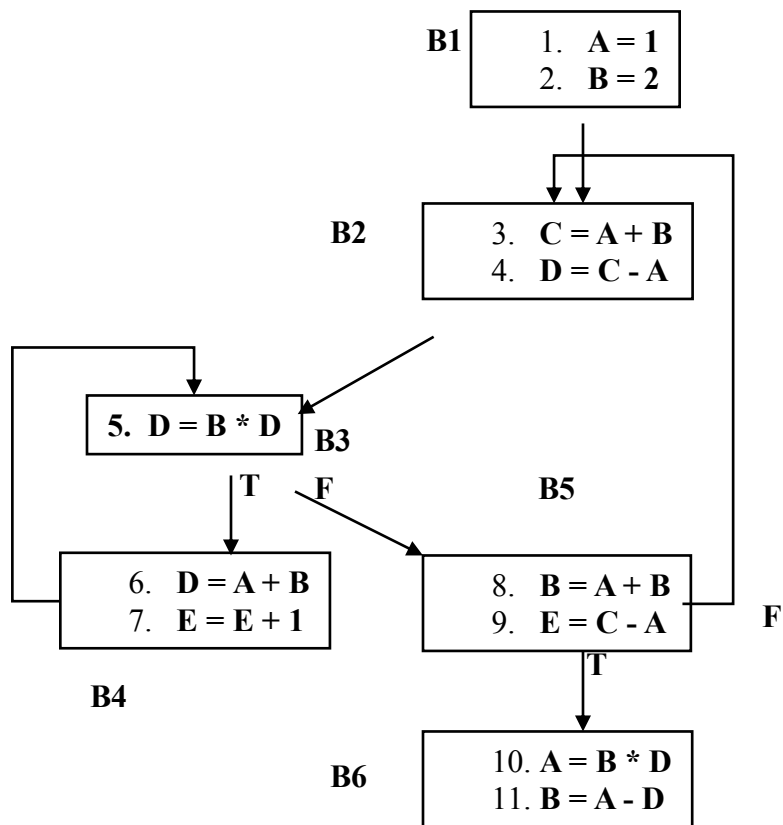
Due: Feb. 6, 2020

(30 points)

1. (10 points) Given the following C program, construct the dominator tree and postdominator tree.

```
{ Read A; LSR = 1; RSR = A;
  SR = (LSR+RSR)/2;
  Repeat {
    T = SR*SR;
    if (T>A) RSR = SR;
    else if (T<A) LSR = SR;
    else { LSR = SR; RSR = SR}
    SR = (LSR+RSR)/2;
  Until (LSR ≠ RSR);
  Print SR;
}
```

(10 pts) 2. Given the statement-based control graph for the program  
(a) construct the control-dependence graph for the program.



3. (10 points) Given the program from 2a, construct the program-dependence graph using data dependence and control dependence for the program.