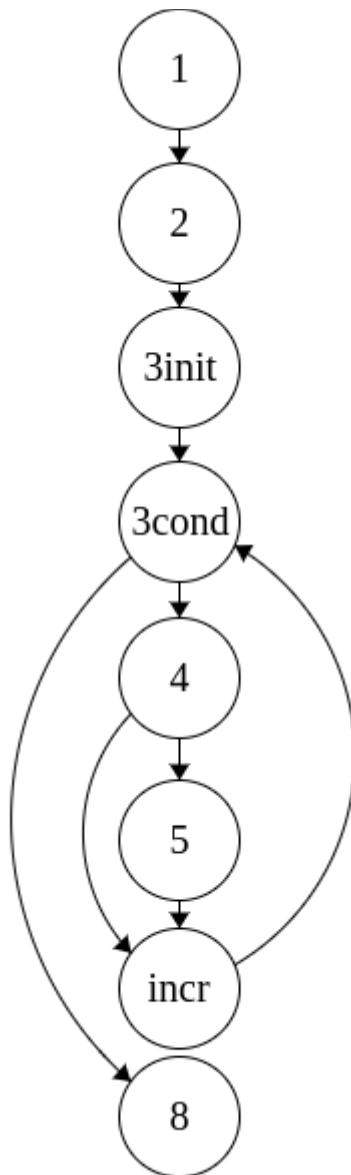


1. Draw the control-flow graph (CFG) of method search. The nodes shall contain the corresponding line numbers of the source code



```
1. int search(int[] array, int length, int searchItem) {  
2.     int foundIndex=-1;  
3.     for (int i = 0; i < length; i++) {  
4.         if (array[i] == searchItem) {  
5.             foundIndex=i;  
6.         }  
7.     }  
8.     return foundIndex;  
9. }
```

2. For 100% Statement coverage, paths visited must be:

1,2,3init,3cond,4,5,incr,8

This would visit all statements in the code in one test

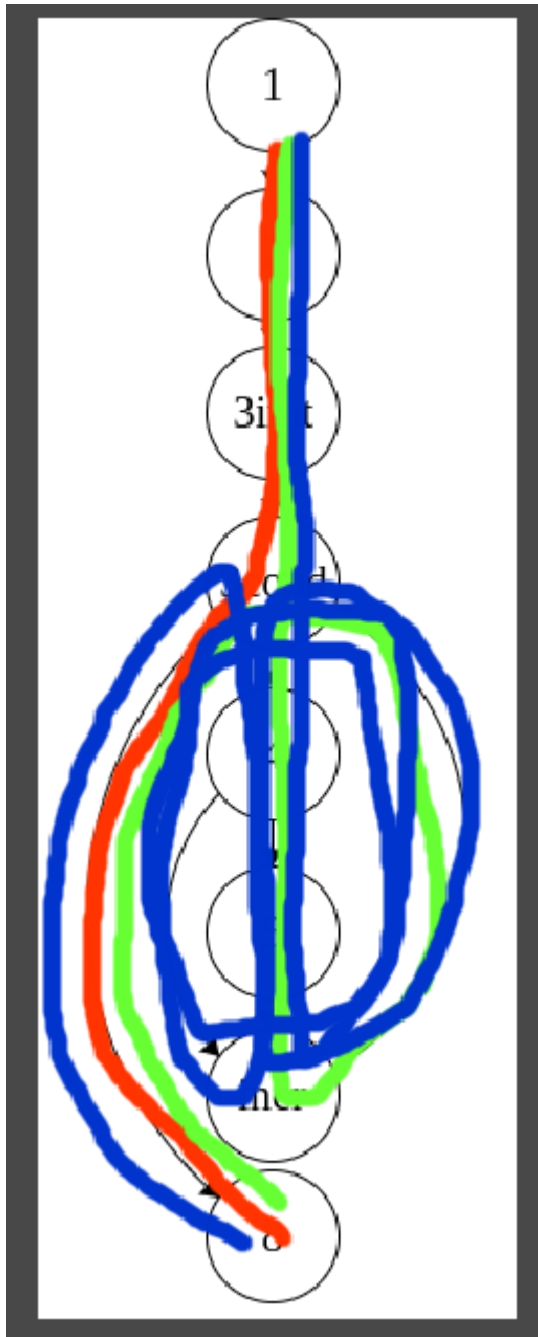
3. For 100% Branch coverage, paths visited must be:

1. 1, 2, 3init, 3cond, 4, 5, incr, 8

2. 1, 2, 3init, 3cond, 4, incr, 8

As such, the branch coverages are one for a normal run, one for a failed if condition.

4.

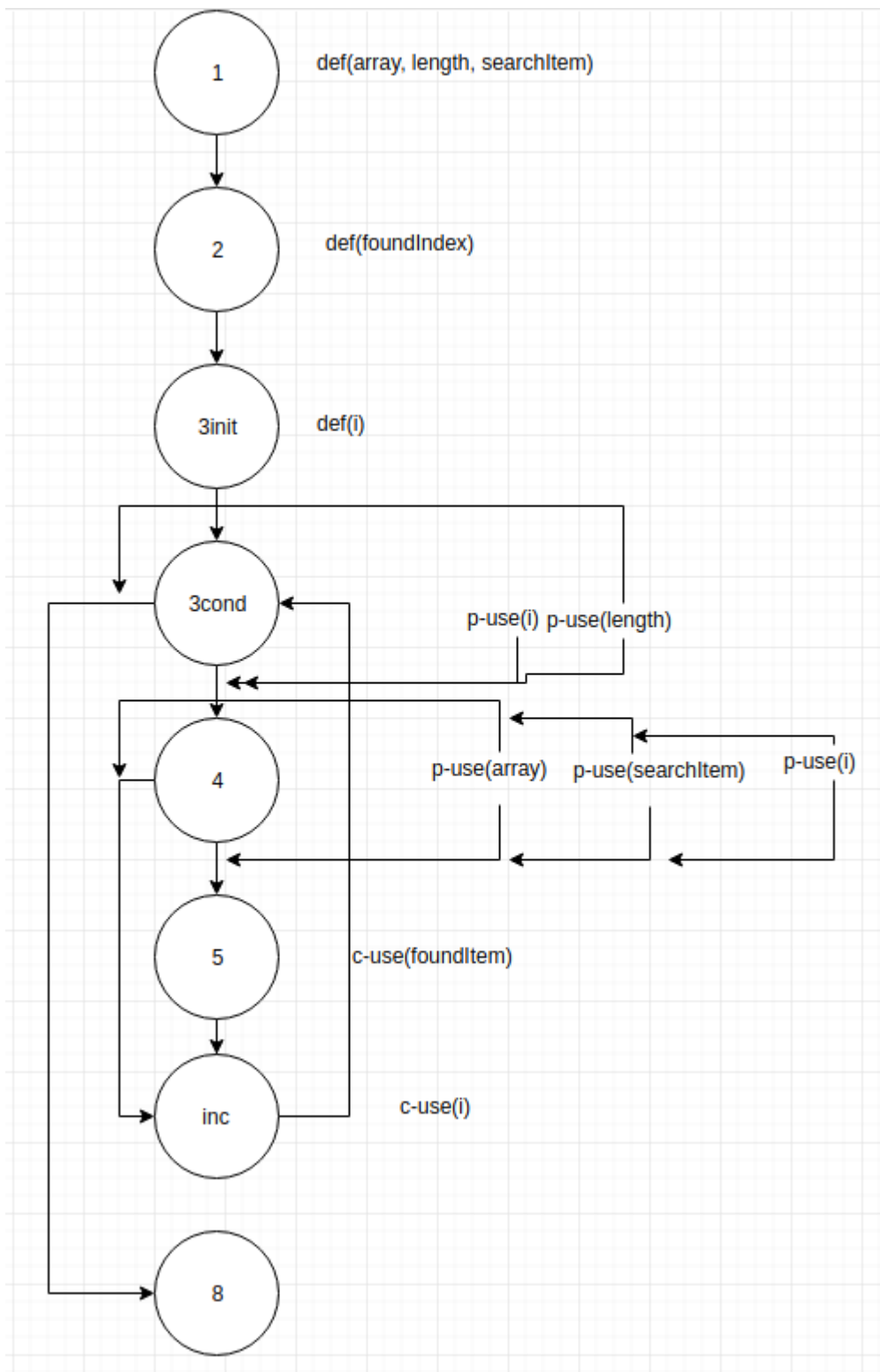


Red is 0 runs through for loop
 Green is 1 loop through for loop
 Blue is 3 loops through for loop

5. McCabe's Cyclomatic number: $v(G) := e - n + p \Rightarrow 9 - 8 + 2 = 3$

6. The worst case of iterations is 2 to the power of n, where n is length(n)

7.



all p-uses criterion are achieved by definition of 100% branch coverage