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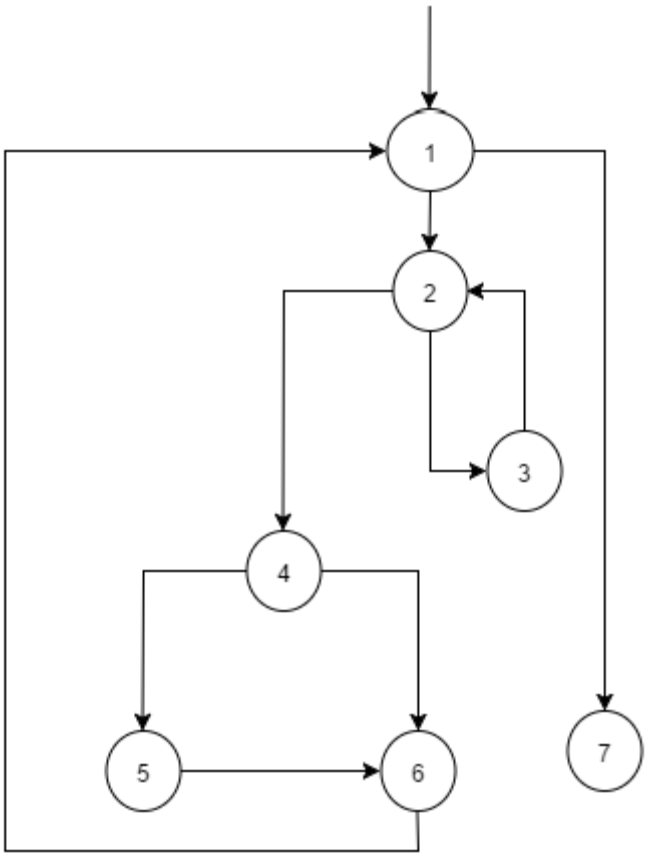
2.2.1
Q5
5)a)



b)

	Test Requirement (TR)
A	[1,2,3]
B	[1,2,4]
C	[2,3,2]
D	[2,4,5]
E	[2,4,6]
F	[3,2,3]
G	[3,2,4]
H	[4,5,6]
I	[4,6,1]
J	[5,6,1]
K	[6,1,2]
L	[6,1,7]

c)
t_0 = [1,2,4,5,6,1,7] covers B, D, H, J, L
t_1 = [1,2,3,2,4,6,1,7] covers A,C, G, E, I, L
Edge pair TRs' F[3,2,3] and K[6,1,2] are not toured by any of the test paths.

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d)
The test path does not tour the simple path [3, 2, 4, 5, 6] directly. It tours with a sidetrip [4, 6, 1, 2, 4].

e)
Node Coverage test requirements = {1, 2, 3, 4, 5, 6, 7}
Edge coverage requirements = {(1, 2,), (1, 7), (2, 3), (2, 4), (3, 2), (4, 5), (4, 6), (5, 6), (6, 1)} .
Prime path coverage requirements =

1. [1,2,4,6,1] ,
2. [1,2,4,5,6,1] ,
3. [2,3,2],
4. [2,4,6,1,2],
5. [2,4,5,6,1,2] ,
6. [3,2,3],
7. [3,2,4,6,1,7],
8. [3,2,4,5,6,1,7],
9. [4,5,6,1,2,4] ,
10. [4,5,6,1,2,3] ,
11. [4,6,1,2,4] ,
12. [4,6,1,2,3] ,
13. [5,6,1,2,4,5],
14. [6,1,2,4,5,6] ,
15. [6,1,2,4,6] ,

f)
Test path [1,2,3,2,4,5,6,1,7] fulfills node coverage , but does not cover (4,6) .

g)
[1,2,3,2,4,5,6,1,7] , [1,2,4,6,1,7]

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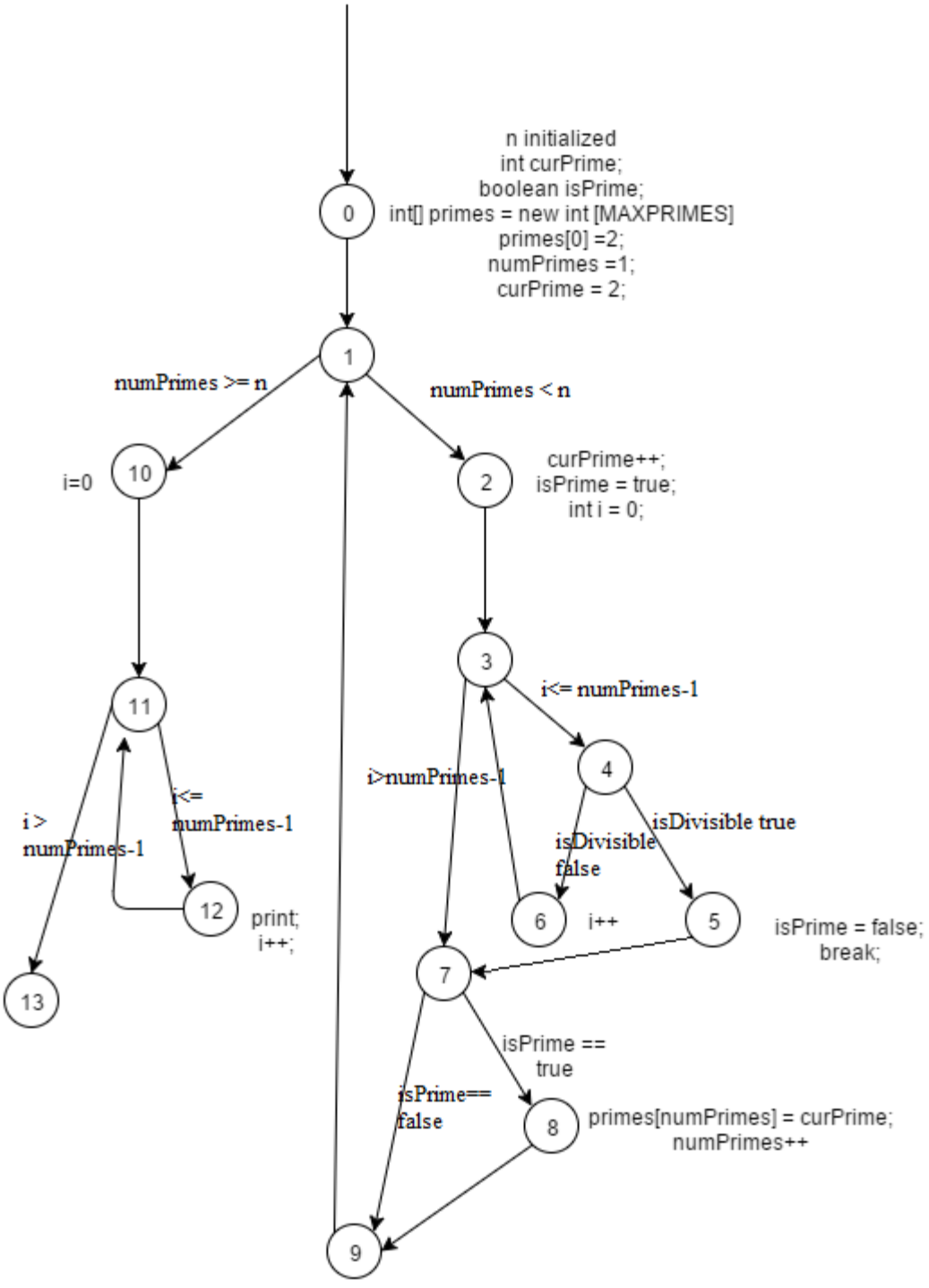
2.3
Q7
a)



b)
line 16, while(numPrimes < 3) . This would be detected by n = 3 but not by n = 5.

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c)
// is the **for statement** the for statement at line 36? My answer assumes so.
For test case n = 1, the body of the while loop is skipped.

d)
Node coverage TR = {0,1,2,3,4,5,6,7,8,9,10,11}
Edge coverage TR = {(0,1), (1,2), (2,3) , (3,4), (4,5), (4,6), (6,3), (3,7), (5,7), (7,8), (7,9) , (8,9), (9,1), (1,10), (10,11), (11,12), (12,11), (11,13)}

Prime Path coverage TR ={
[0,1,10,11,13],
[0,1,10,11,12],
[0,1,2,3,7,9],
[0,1,2,3,7,8,9],
[0,1,2,3,4,6],
[0,1,2,3,4,5,7,9],
[0,1,2,3,4,5,7,8,9],
[1,2,3,7,9,1],
[2,3,7,9,1,2],
[3,7,9,1,2,3],
[7,9,1,2,3,7],
[9,1,2,3,7,9],
[1,2,3,4,5,7,9,1],
[2,3,4,5,7,9,1,2],
[3,4,5,7,9,1,2,3],
[4,5,7,9,1,2,3,4],
[5,7,9,1,2,3,4,5],
[7,9,1,2,3,4,5,7],
[9,1,2,3,4,5,7,9],
[1,2,3,4,5,7,8,9,1],
[2,3,4,5,7,8,9,1,2],
[3,4,5,7,8,9,1,2,3],
[4,5,7,8,9,1,2,3,4],
[5,7,8,9,1,2,3,4,5],
[7,8,9,1,2,3,4,5,7],
[8,9,1,2,3,4,5,7,8],
[9,1,2,3,4,5,7,8,9],
[2,3,7,9,1,10,11,12],
[2,3,7,9,1,10,11,13],
[2,3,7,8,9,1,10,11,12],
[2,3,7,8,9,1,10,11,13],
[2,3,4,5,7,9,1,10,11,12],
[2,3,4,5,7,9,1,10,11,13],
[2,3,4,5,7,8,9,1,10,11,12],
[2,3,4,5,7,8,9,1,10,11,13],
[3,4,6,3],
[4,6,3,4],
[6,3,4,6],

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[4,6,3,7,9,1,10,11,12],
[4,6,3,7,8,9,1,10,11,12],
[4,6,3,7,9,1,10,11,13],
[4,6,3,7,8,9,1,10,11,13],
[5,7,9,1,2,3,4,6]
[5,7,8,9,1,2,3,4,6]
[7,9,1,2,3,4,5]
[11,12,11]
[12,11,12]
[12,11,13]
[6,3,4,5,7,9,1,2],
[6,3,4,5,7,8,9,1,2],
[4,6,3,7,9,1,2]
[4,6,3,7,8,9,1,2]
[6,3,4,5,7,9,1,10,11,13],
[6,3,4,5,7,8,9,1,10,11,13],
[4,6,3,7,9,1,2,10,11,13]
[4,6,3,7,8,9,1,2,,10,11,13]
[6,3,4,5,7,9,1,10,11,12],
[6,3,4,5,7,8,9,1,10,11,12],
[4,6,3,7,9,1,2,10,11,12]
[4,6,3,7,8,9,1,2,,10,11,12]
}

e)
[0,1,2,3,4,6,3,4,5,7,8,9,1,10,11,12,11,14] does not achieve edge coverage but achieves node coverage.

f)
test path [0,1,2,3,7,9,1,2,3,4,6,3,4,5,7,8,9,1,10,11,12,11,13] tours all the edges, but does not cover prime path [0,1,10,11,14] .

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3)

Counter	Coverage	Covered	Missed	Total
Instructions	89.9 %	753	85	838
Branches	99.0 %	101	1	102
Lines	89.2 %	165	20	185
Methods	77.8 %	14	4	18
Types	100.0 %	3	0	3
Complexity	92.8 %	64	5	69