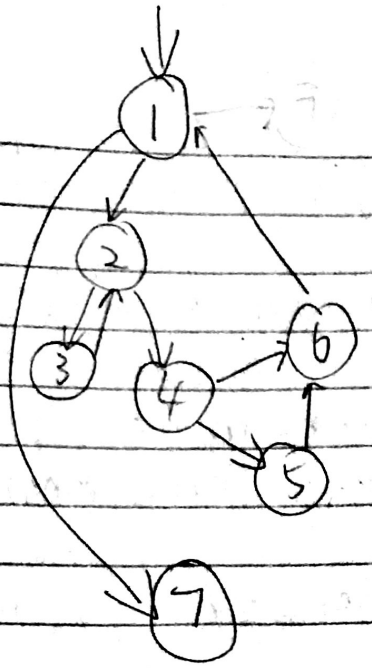
5. a)



b)

Path(t1) = (1, 2, 3)
Path(t2) = (1, 2, 4)
Path (t3) = (2, 4, 6)
Path(t4) = (2, 4, 5)
Path(t5) = (3, 2, 4)
Path(t6) = (4, 5, 6)
Path(t7) = (4, 6, 1)
Path(t8) = (5, 6, 1)
Path(t9) = (6, 1, 2)
Path(t10) = (6, 1, 7)
Path (t11) = (2, 3, 2)
Path (t12) = (3, 2, 3)

requirements = { Path(t1), ... Path(t12) }

c) No, the requirement [6, 1, 2] is missing

d) It covers with a sidetrip.
side trip is (4, 6, 1, 2, 4)

e) NC = { 1, 2, 3, 4, 5, 6, 7 }
EC = { (1,2), (2,3), (3,2), (2,4), (4,5), (4,6), (5,6), (6,1), (1,7) }

PPC = { (1, 2, 3), (1, 2, 4, 5, 6, 1), (1, 2, 4, 6, 1) ,
(3, 2, 4, 5, 6, 1, 7), (3, 2, 4, 6, 1, 7) }

f) { (1, 2, 3, 2, 4, 5, 6 , 1, 7) }

g) { (1, 2, 3), (3, 2, 4), (4, 5, 6), (4, 6, 1, 7) }

6 a) NC = {$n_0, n_1, n_2, n_3, n_4, n_5, n_6, n_7, n_8, n_9$}

EC = {$(n_0, n_3), (n_3, n_7), (n_0, n_4), (n_4, n_7), (n_1, n_4), (n_4, n_8), (n_5, n_1), (n_8, n_5), (n_2, n_5), (n_5, n_9), (n_6, n_9), (n_2, n_6)$}

PPC = {$(n_0, n_3, n_7), (n_0, n_4, n_7), (n_0, n_4, n_8, n_5, n_1), (n_0, n_4, n_8, n_5, n_9), (n_1, n_4, n_8, n_5, n_9), (n_1, n_4, n_8, n_5, n_1), (n_2, n_6, n_9), (n_2, n_5, n_1, n_4, n_8)$}

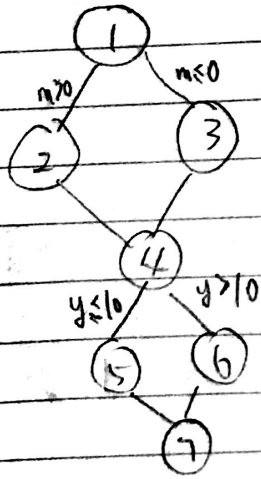
b) {$(n_0, n_3, n_7), (n_0, n_4, n_8), (n_2, n_5, n_1, n_4, n_8, n_5, n_9), (n_2, n_6, n_9)$}

c) EC but not PPC

{$(n_0, n_3, n_7), (n_0, n_4, n_7), (n_1, n_4, n_8, n_5, n_9), (n_2, n_5, n_8), (n_2, n_6, n_9)$}

1.

a)



b) 1, 2, 3.

c) 2, 3, 7

d) No. There isn't one because of all path, w is used

e) W: {2, 5, 7}, {2, 6, 7}, {3, 5, 7}, {3, 6, 7}

X: {5, 7}, {6, 7}