1. Sequential approach:

stem

Blossom

#11

#11 = {7, 8, 10}

Edge (7,10) — blossom is found
LCA(7,10) = 7

(4,7)

(6,7)   (9,10)

Blossom

#12
= {6, 9, 11}

NBD
Q: 9 10 11

LCA : 9,11 = 11

(4,11)

Q: 1 3 7 9 10 11 12   from (5)——(12)

(5,6)

Parallel approach:

Aug path

Q: 1 5 7 9 7 8   Q: 1 7 7 9 10   o
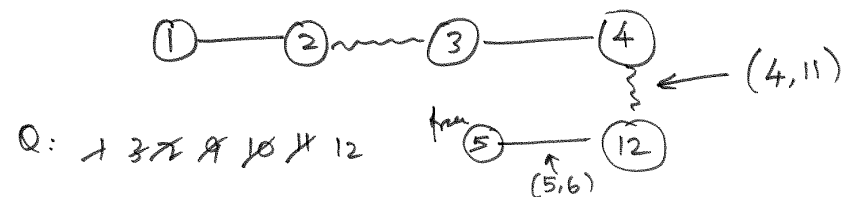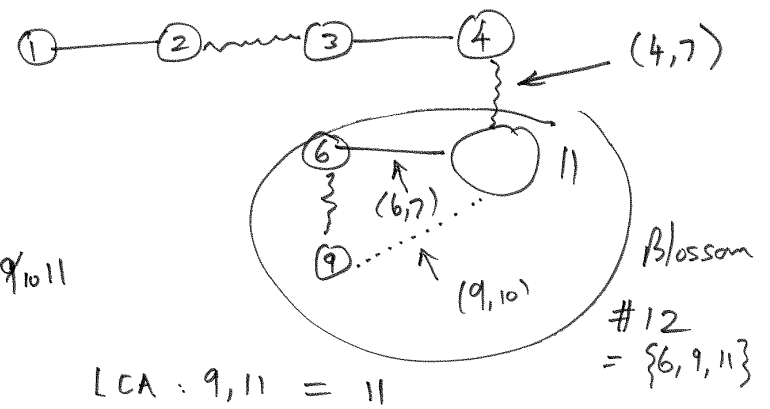
Augmenting path is found

Update M:
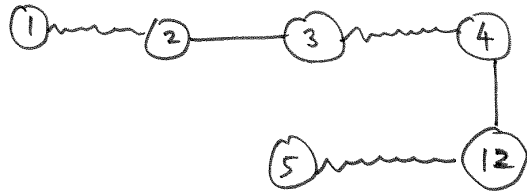
Expand 12:
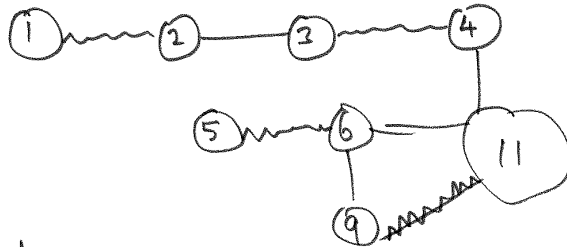
Expand 11:
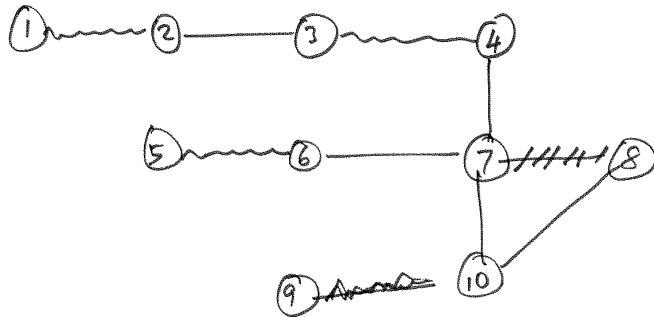
Output:

$$\underline{M} = (1,2) \quad (3,4) \quad (5,6) \quad (7,8) \quad (9,10)$$

One extra outer nodes
vs inner nodes

slack $= 16 + 0 - 4 = 12$

$-\Delta$

$+\Delta$

slack $= 15$

$-\Delta$

slack $= 10 + 0 - 1 = 9$
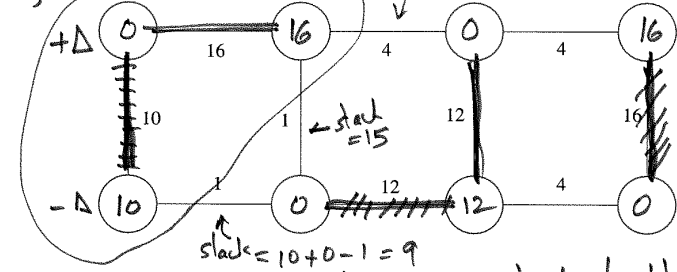
Zero graph = set of tight edges

$$e = (u,v): \quad L(u) + L(v) = w(e).$$

Find Min slack: $\{12, 9, 15\} = 9$
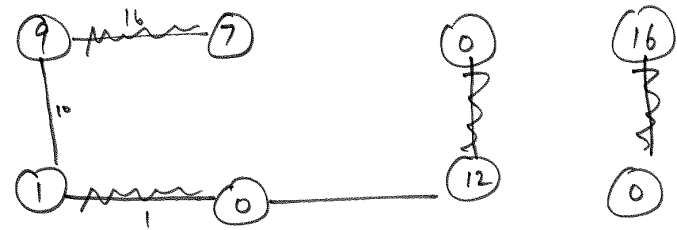
Zero graph Z

Perfect matching ———— Output Max weight matching.