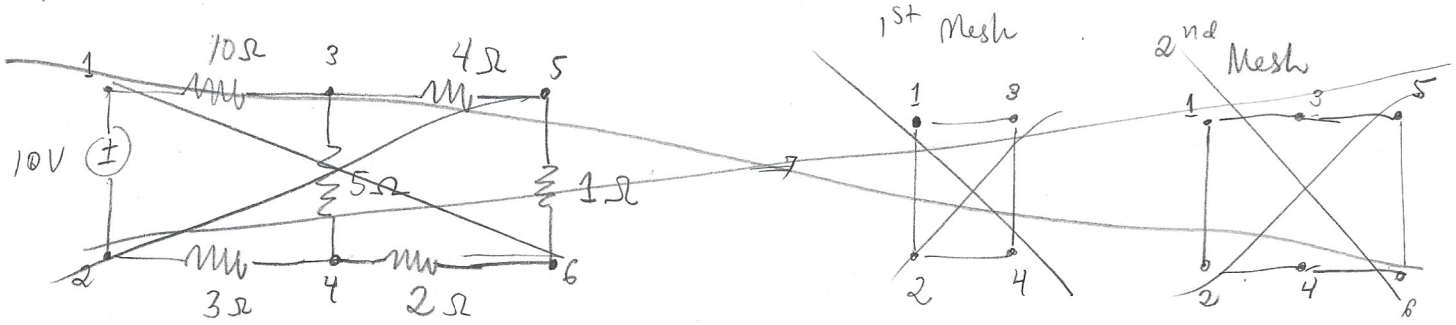
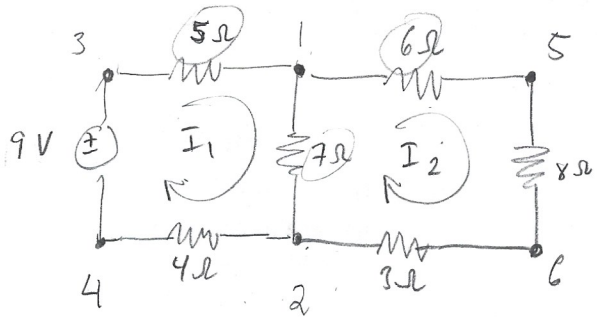
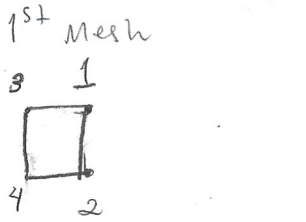
~~For the case where getMesh() is not fixed.~~





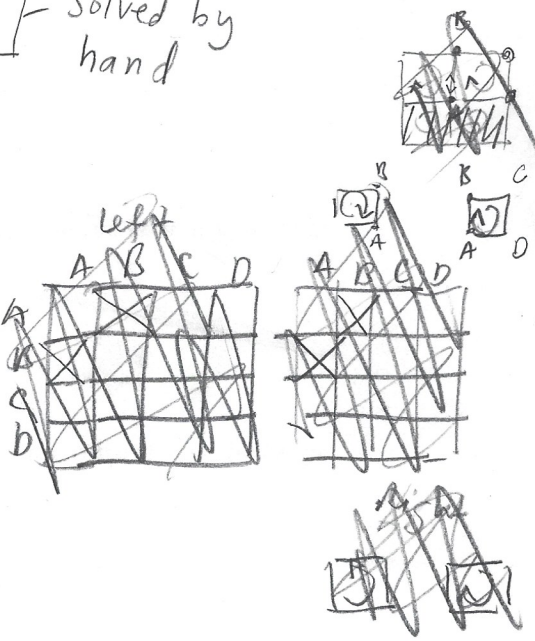


$I_1 = 0.645$
$I_2 = 0.188$ } solved by hand

Mesh 1 directed

	1	2	3	4	5	6
1	—	1 to 2		1 to 4	1 to 5	1 to 6
2		—	2 to 3	2 to 4	2 to 5	2 to 6
3	3 to 1	3 to 2	—		3 to 5	3 to 6
4	4 to 1		4 to 3	—	4 to 5	4 to 6
5	5 to 1	5 to 2	5 to 3	5 to 4	—	5 to 6
6	6 to 1	6 to 2	6 to 3	6 to 4	6 to 5	—

setOrientation(): A



Input2. txt

Mesh 2 directed

	1	2	3	4	5	6
1		1 to 2				
2						2 to 6
3						
4						
5	5 to 1					
6					6 to 5	

Matrix Generated by function:

$$(5+7+4)I_1 + 7I_2 = 9$$

$$7I_1 + (6+7+3+8)I_2 = 0$$

$$\begin{bmatrix} 16 & 7 \\ 7 & 24 \end{bmatrix} \begin{bmatrix} I_1 \\ I_2 \end{bmatrix} = \begin{bmatrix} 9 \\ 0 \end{bmatrix}$$

B

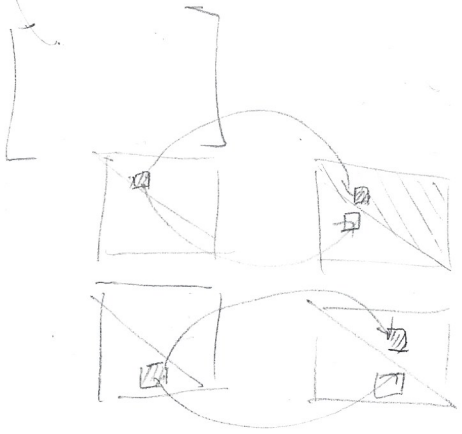
I

A

$I_1 = 0.645$
$I_2 = 0.188$

} solved from function's matrix

i, j



Solution by hand:

KVL Mesh 1:

$$9 = 5I_1 + 7(I_1 - I_2) + 4I_1$$

Mesh 2:

$$6I_2 + 8I_2 + 3I_2 + 7(I_2 - I_1) = 0$$

Solving the system yields

$I_1 = 0.645$
$I_2 = 0.188$

LU Decomposition

Find LU in $A = LU$

$$L = \begin{bmatrix} 16 & 0 \\ 7 & 335/16 \end{bmatrix}$$

$$U = \begin{bmatrix} 1 & 7/16 \\ 0 & 1 \end{bmatrix}$$