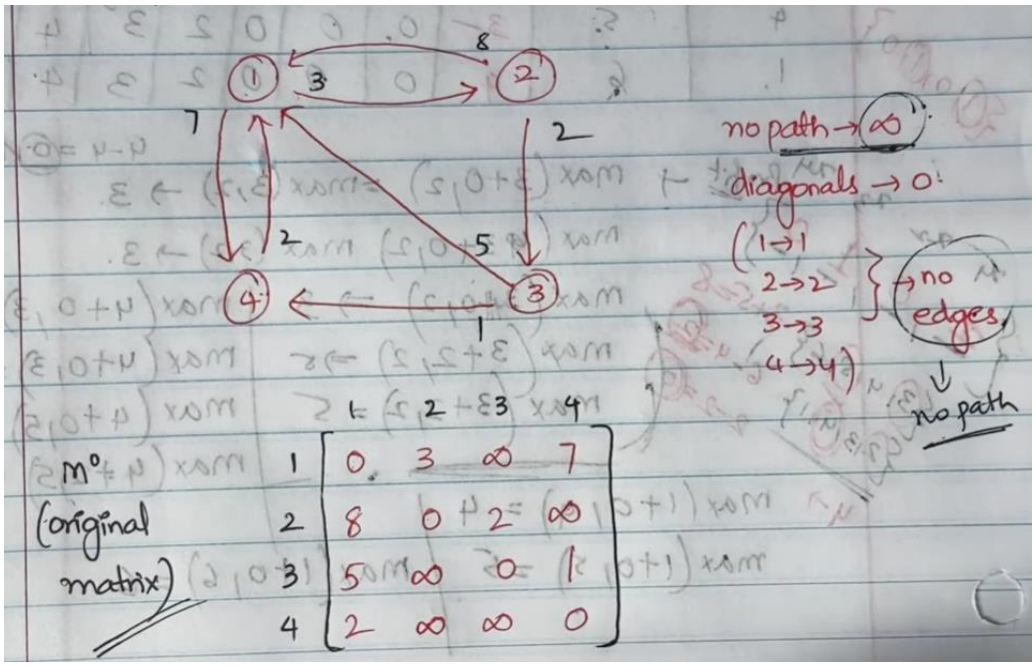
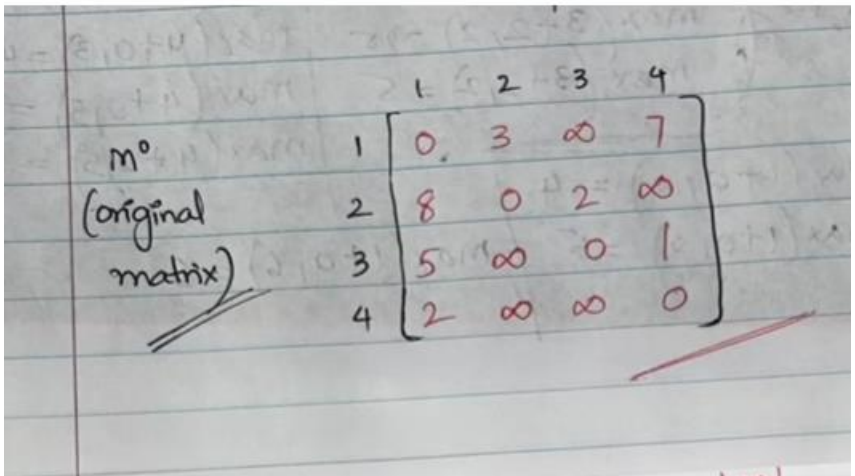
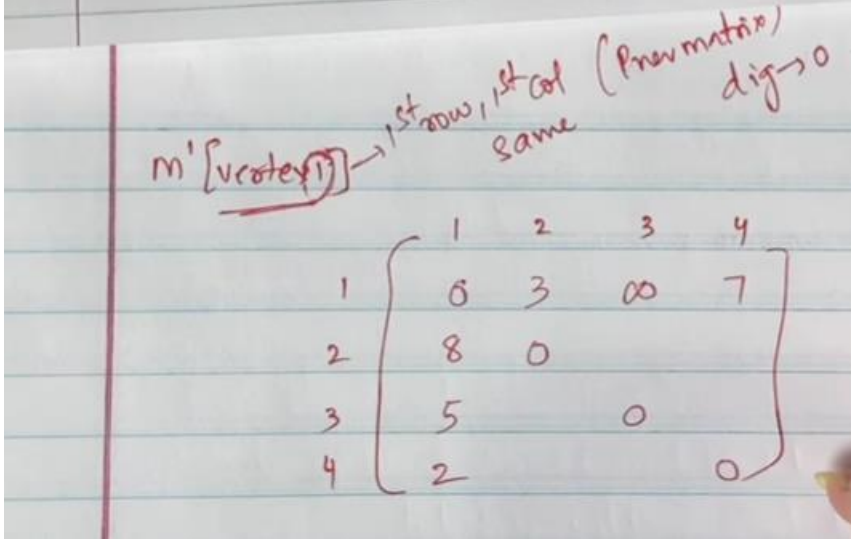

8
3
7
2
2
5
1
no path → ∞
diagonals → 0
1→1
2→2
3→3
4→4
no edges
no path
M° (original matrix)
1 2 3 4
1 0 3 ∞ 7
2 8 0 2 ∞
3 5 ∞ 0 1
4 2 ∞ ∞ 0


M° (original matrix)
1 2 3 4
1 0 3 ∞ 7
2 8 0 2 ∞
3 5 ∞ 0 1
4 2 ∞ ∞ 0


M'[vertex1] → 1st row, 1st col same
(Prev matrix)
dig → 0
1 2 3 4
1 0 3 ∞ 7
2 8 0
3 5 0
4 2 0

(13)

M^0 (original matrix)

	1	2	3	4
1	0	3	∞	7
2	8	0	2	∞
3	5	∞	0	1
4	2	∞	∞	0

	1	2	3	4
1	0	3	∞	7
2	8	0	2	15
3	5	8	0	1
4	2	5		0

$M^0[2,3] \Rightarrow M^0[2,1] + M^0[1,3]$

$2 < 8 + \infty$

$M^0[2,4] \Rightarrow M^0[2,1] + M^0[1,4]$

$\infty > 8 + 7 \quad (15)$

$M^0[3,2] \quad M^0[3,1] + M^0[1,2]$

$\infty > 5 + 3 \quad (8)$

$M^0[4,2] = M^0[4,1] + M^0[1,2]$

$\infty > 2 + \infty \quad 3(5)$

$M^0[3,4] = M^0[3,1] + M^0[1,4]$

$1 < 5 + 7 \quad (12)$

$M^0[4,3] = M^0[4,1] + M^0[1,3]$

$M^1 \Rightarrow$

	1	2	3	4
1	0	3	∞	7
2	8	0	2	15
3	5	8	0	1
4	2	5	∞	0

M^2, M^3, M^4

$M^0[2,3] \Rightarrow M^0[2,1] + M^0[1,3]$

$2 < 8 + \infty$

$M^0[2,4] \Rightarrow M^0[2,1] + M^0[1,4]$

$\infty > 8 + 7 \quad (15)$

$M^0[3,2] \quad M^0[3,1] + M^0[1,2]$

$\infty > 5 + 3 \quad (8)$

$M^0[4,2] = M^0[4,1] + M^0[1,2]$

$\infty > 2 + \infty \quad 3(5)$

$M^0[3,4] = M^0[3,1] + M^0[1,4]$

$1 < 5 + 7 \quad (12)$

$M^0[4,3] = M^0[4,1] + M^0[1,3]$

$\infty \quad 0 + \infty \rightarrow \infty$

M^2 (vertex 2) $\Rightarrow$

	1	2	3	4
1	0	3	5	7
2	8	0	2	15
3		8	0	
4		5		0

Prev: 2nd row, 2nd col, 2 dig

(1,3)

(1,2) (2,3)

$\infty > 3 + 2$

$(1,4) \rightarrow (1,2) + (2,4)$

$7 < 3 + 15$

$(3,1) \rightarrow (3,2) + (2,1)$

$m^1 \Rightarrow$

	1	2	3	4
1	0	3	∞	7
2	8	0	2	15
3	5	8	0	1
4	2	5	∞	0

m^2, m^3, m^4

$m^0[2,3] \Rightarrow m^0[2,1] + m^0[1,3]$

(2) $<$ $8 + \infty$

$m^0[2,4] \Rightarrow m^0[2,1] + m^0[1,4]$

$\infty > 8 + 7$ (15)

$m^0[3,4] = m^0[3,1] + m^0[1,4]$

(1) $<$ $5 + 7$ (12)

$m^0[3,2]$ $m^0[3,1] + m^0[1,2]$

$\infty > 5 + 3$ (8)

$m^0[4,2] = m^0[4,1] + m^0[1,2]$

$\infty > 2 + 3$ (5)

$m^0[4,3] = m^0[4,1] + m^0[1,3]$

∞ $0 + \infty \rightarrow \infty$

m^2 (vertex 2) $\Rightarrow$

	1	2	3	4
1	0	3	5	7
2	8	0	2	15
3	5	8	0	1
4	2	5	7	0

Row: 2nd row, 2nd col, dig

(1,3)

(1,2) (2,3)

(2) $\infty > 3 + 2$

$(1,4) \rightarrow (1,2) + (2,4)$

$7 < 3 + 15$

$(3,4) \rightarrow (3,2) + (2,4)$

$1 < 8 + 15$ (23)

$(3,1) \Rightarrow (3,2) + (2,1)$

5 $8 + 8$ (16)

$(4,1) \rightarrow (4,2) + (2,1)$

$2 < 5 + 8$ (13)

$(4,3) \rightarrow (4,2) + (2,3)$

∞ $5 + 2$ (7)