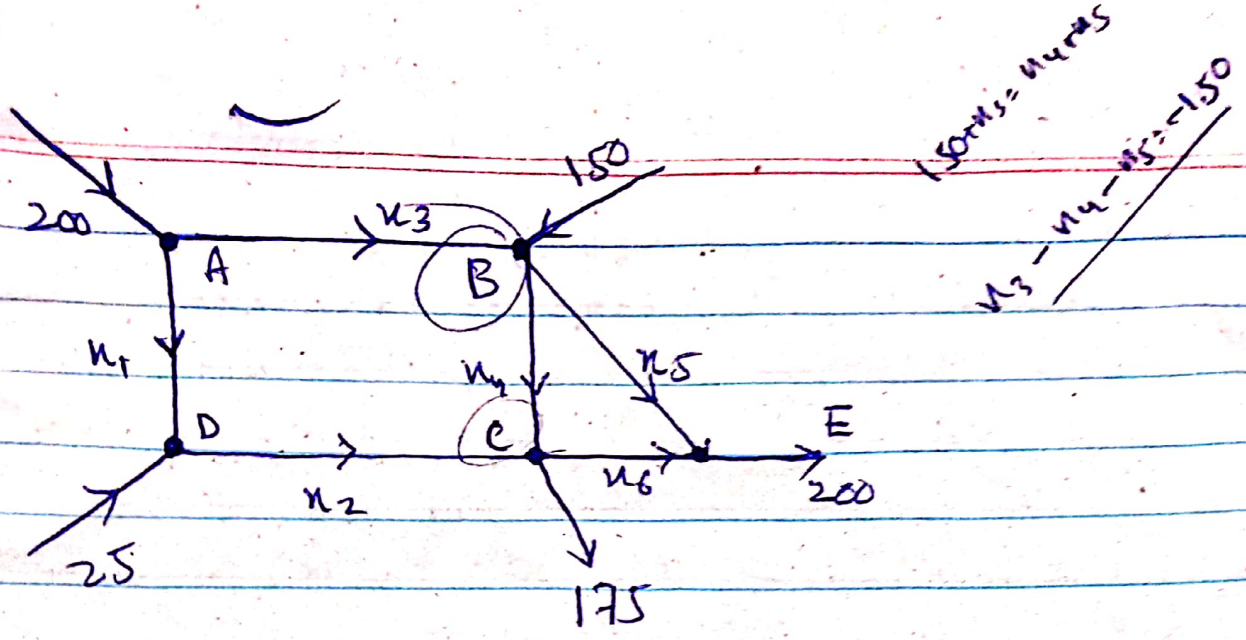


$150 + x_3 = x_4 + x_5$

$x_3 - x_4 - x_5 = -150$

At Node A: $200 = x_1 + x_3$.

→ At Node B: $150 + x_3 = x_4 + x_5 \Rightarrow 150 = x_4 + x_5 - x_3$

→ At Node C: $x_4 + x_2 = x_6 + 175$

At Node D: $x_1 + 25 = x_2 \Rightarrow x_1 - x_2 = -25$

At Node E: $x_5 + x_6 = 200$

$$x_1 + x_3 = 200$$

$$+x_3 + x_4 + x_5 = 150$$

$$+x_2 + x_4 - x_6 = 175$$

$$x_1 - x_2 = -25$$

$$x_5 + x_6 = 200.$$

$$\begin{bmatrix} 1 & 0 & 1 & 0 & 0 & 0 & 200 \\ 0 & 0 & +1 & -1 & -1 & 0 & -150 \\ 0 & 1 & 0 & 1 & 0 & -1 & 175 \\ 1 & -1 & 0 & 0 & 0 & 0 & -25 \\ 0 & 0 & 0 & 0 & 1 & 1 & 200 \end{bmatrix}$$

Interchange R_2 and R_3.

$$\begin{bmatrix} 1 & 0 & 1 & 0 & 0 & 0 & 200 \\ 0 & 1 & 0 & 1 & 0 & -1 & 175 \\ 0 & 0 & \boxed{1} & -1 & -1 & 0 & -150 \\ 1 & -1 & 0 & 0 & 0 & 0 & -25 \\ 0 & 0 & 0 & 0 & 1 & 1 & 200 \end{bmatrix}$$

Interchange R_4 and R_5

$$\begin{bmatrix} 1 & 0 & 1 & 0 & 0 & 0 & 200 \\ 0 & 1 & 0 & 1 & 0 & -1 & 175 \\ 0 & 0 & 1 & -1 & -1 & 0 & -150 \\ 0 & 0 & 0 & 0 & 1 & 1 & 200 \\ 1 & -1 & 0 & 0 & 0 & 0 & -25 \end{bmatrix}$$

$R_4 \leftarrow R_4 + 1 \times R_1$

$-25 \quad -200$

$$\begin{bmatrix} 1 & 0 & 1 & 0 & 0 & 0 & 200 \\ 0 & 1 & 0 & 1 & 0 & -1 & 175 \\ 0 & 0 & 1 & -1 & -1 & 0 & -150 \\ 0 & 0 & 0 & 0 & 1 & 1 & 200 \\ 0 & -1 & -1 & 0 & 0 & 0 & -225 \end{bmatrix}$$

$R_5 \leftarrow$ Add R_2 and R_5

$$\begin{bmatrix} 1 & 0 & 1 & 0 & 0 & 0 & 200 \\ 0 & 1 & 0 & 1 & 0 & -1 & 175 \\ 0 & 0 & 1 & -1 & -1 & 0 & -150 \\ 0 & 0 & 0 & 0 & 1 & 1 & 200 \\ 0 & 0 & -1 & 1 & 0 & -1 & -50 \end{bmatrix}$$

Interchange R_4 and R_5

$$\begin{bmatrix} 1 & 0 & 1 & 0 & 0 & 0 & 200 \\ 0 & 1 & 0 & 1 & 0 & -1 & 175 \\ 0 & 0 & 1 & -1 & -1 & 0 & -150 \\ 0 & 0 & -1 & 1 & 0 & -1 & -50 \\ 0 & 0 & 0 & 0 & 1 & 1 & 200 \end{bmatrix}$$

$R_4 \leftarrow R_3 + R_4$

$$\begin{bmatrix} 1 & 0 & 1 & 0 & 0 & 0 & 200 \\ 0 & 1 & 0 & 1 & 0 & -1 & 175 \\ 0 & 0 & 1 & -1 & -1 & 0 & -150 \\ 0 & 0 & 0 & 0 & -1 & -1 & -200 \\ 0 & 0 & 0 & 0 & 1 & 1 & 200 \end{bmatrix}$$

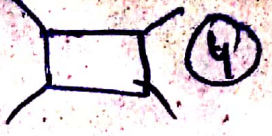
$R_1 \leftarrow R_1 - 1 \times R_3$

$$\begin{bmatrix} 1 & 0 & 0 & 1 & 1 & 0 & 350 \\ 0 & 1 & 0 & 1 & 0 & -1 & 175 \\ 0 & 0 & 1 & -1 & -1 & 0 & -150 \\ 0 & 0 & 0 & 0 & -1 & -1 & -200 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$R_4 \leftarrow R_4 + R_1$ ① $-1 \times R_4$

$$\begin{bmatrix} 1 & 0 & 0 & 1 & 0 & 1 & 150 \\ 0 & 1 & 0 & 1 & 0 & -1 & 175 \\ 0 & 0 & 1 & -1 & -1 & 0 & -150 \\ 0 & 0 & 0 & 0 & -1 & -1 & -200 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$-1 \times R_4$



$$\begin{bmatrix} 1 & 0 & 0 & 1 & 0 & 0 & 150 \\ 0 & 1 & 0 & 1 & 0 & -1 & 175 \\ 0 & 0 & 1 & -1 & -1 & 0 & -150 \\ 0 & 0 & 0 & 0 & 1 & 1 & 200 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$R_3 \leftarrow R_4 + R_3$

$$\begin{bmatrix} 1 & 0 & 0 & 1 & 0 & 0 & 150 \\ 0 & 1 & 0 & 1 & 0 & -1 & 175 \\ 0 & 0 & 1 & -1 & 0 & 1 & 50 \\ 0 & 0 & 0 & 0 & 1 & 1 & 200 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$