

$$B = \begin{bmatrix} 2 & 3 \\ 2 & 5 \end{bmatrix}, \text{ 则基变量为 } x_2, x_4$$

$$N = \begin{bmatrix} 2 & 3 \\ 3 & 4 \end{bmatrix} \quad C_B = (4, 8) \quad C_N = (5, 7)$$

$$B^{-1} = \begin{bmatrix} \frac{5}{4} & -\frac{3}{4} \\ -\frac{1}{2} & \frac{1}{2} \end{bmatrix} \quad \pi = C_B B^{-1} = (1, 1) \quad \textcircled{2}$$

$$\pi b = (1, 1) \begin{pmatrix} 20 \\ 30 \end{pmatrix} = 50 \quad B^{-1}b = \begin{pmatrix} \frac{5}{2} \\ \frac{5}{2} \end{pmatrix} = (x_4, x_2) \quad \textcircled{1}$$

$$\bar{N} = B^{-1}N = \begin{pmatrix} \frac{5}{4} & -\frac{3}{4} \\ -\frac{1}{2} & \frac{1}{2} \end{pmatrix} \begin{pmatrix} 2 & 3 \\ 3 & 4 \end{pmatrix} = \begin{pmatrix} \frac{1}{4} & \frac{3}{4} \\ -\frac{1}{2} & \frac{1}{2} \end{pmatrix} \quad \bar{N}_1 = \begin{pmatrix} \frac{1}{4} \\ -\frac{1}{2} \end{pmatrix} \quad \bar{N}_3 = \begin{pmatrix} \frac{3}{4} \\ \frac{1}{2} \end{pmatrix} \quad \textcircled{2}$$

$$J_N = C_N - C_B B^{-1}N = (5, 7) - \pi \begin{pmatrix} 2 & 3 \\ 3 & 4 \end{pmatrix} = (0, 0)$$