$\min c^\top x$ subject to $Ax = b$, $x \geq 0$ where

$$A = \begin{bmatrix} \quad \end{bmatrix}, \quad b = \begin{bmatrix} \quad \end{bmatrix}, \quad c = \begin{bmatrix} \quad \end{bmatrix}$$

$$\mathcal{B} = \{ \quad \}, \quad B = \begin{bmatrix} \quad \end{bmatrix}, \quad \underline{Bx_B = b} \implies x_B = \begin{bmatrix} \quad \end{bmatrix}, \quad c_B = \begin{bmatrix} \quad \end{bmatrix}$$

$$\mathcal{N} = \{ \quad \}, \quad N = \begin{bmatrix} \quad \end{bmatrix}, \quad x_N = \begin{bmatrix} \quad \end{bmatrix}, \quad c_N = \begin{bmatrix} \quad \end{bmatrix}$$

$$\underline{B^\top \lambda = c_B} \implies \lambda = \begin{bmatrix} \quad \end{bmatrix} \implies \underline{s_N = c_N - N^\top \lambda} = \begin{bmatrix} \quad \end{bmatrix}$$

$s_N \geq 0$? stop with optimum

$s_N \overset{\text{index of min}}{\longrightarrow} q = \boxed{\quad} \implies \underline{Bd = A_q} \implies d = \begin{bmatrix} \quad \end{bmatrix}$

$d \leq 0$? stop, unbounded

$\left\{ \frac{(x_B)_i}{d_i} \right\} = \{ \quad \} \overset{\text{index of min over } d_i > 0}{\longrightarrow} p = \boxed{\quad}$

$$\mathcal{B} = \{ \quad \}, \quad B = \begin{bmatrix} \quad \end{bmatrix}, \quad \underline{Bx_B = b} \implies x_B = \begin{bmatrix} \quad \end{bmatrix}, \quad c_B = \begin{bmatrix} \quad \end{bmatrix}$$

$$\mathcal{N} = \{ \quad \}, \quad N = \begin{bmatrix} \quad \end{bmatrix}, \quad x_N = \begin{bmatrix} \quad \end{bmatrix}, \quad c_N = \begin{bmatrix} \quad \end{bmatrix}$$

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$$\mathcal{N} = \left\{ \qquad \qquad \right\}, \quad N = \begin{bmatrix} \qquad \qquad \end{bmatrix}, \quad x_N = \begin{bmatrix} \quad \end{bmatrix}, \quad c_N = \begin{bmatrix} \quad \end{bmatrix}$$

$$\underline{B^\top \lambda = c_B} \implies \lambda = \begin{bmatrix} \quad \end{bmatrix} \implies \underline{s_N = c_N - N^\top \lambda} = \begin{bmatrix} \quad \end{bmatrix}$$

$s_N \geq 0$? stop with optimum

$$s_N \overset{\text{index of min}}{\longrightarrow} q = \boxed{\quad} \implies \underline{Bd = A_q} \implies d = \begin{bmatrix} \quad \end{bmatrix}$$

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