

reformulate as QUBO

$$\begin{array}{ll} \min_x & c^\top x \\ \text{s.t.} & Ax = b \end{array}$$

$$\min_x x^\top Q x$$

$$\begin{array}{c} \begin{bmatrix} 0 & 0 \\ 0 & q_{ij} \end{bmatrix} \leftarrow \dots \leftarrow \begin{pmatrix} q_{11} & \dots & q_{1j} & \dots & q_{1n} \\ \vdots & & \textcircled{q_{ij}} & \dots & \vdots \\ \vdots & & \textcircled{q_{kk}} & \dots & \vdots \\ & & & \ddots & \\ & & & & q_{nn} \end{pmatrix} \\ \vdots \downarrow \quad \quad \quad \begin{bmatrix} 0 \\ q_{kk} \end{bmatrix} \leftarrow \dots \leftarrow \quad \quad \quad \downarrow \\ \mathbf{i}, \mathbf{j}, \dots, \mathbf{k} \rightarrow \end{array}$$