0 1 2 3 4
5 6 7 8 9
10 11 12 13 14
15 16 17 18 19
20 21 22 23 24

$$0 = q_1 - C_1\frac{dT_1}{dt} - K_{01}(T_1-T_0) - K_{12}(T_1-T_2) - K_{13}(T_1-T_3) - \dots$$
$$- K_{15}(T_1-T_5) - K_{16}(T_1-T_6) - \dots$$
$$= q_1 - C_1\frac{dT_1}{dt} - (K_{01}+K_{12}+K_{13}+\dots+K_{1\text{-}25})T_1 + K_{01}T_0 + \dots$$
$$+ K_{12}T_2 + K_{13}T_3 + \dots$$

$$0 = q_0 - C_0\frac{dT_0}{dt} - K_{01}(T_0-T_1) - K_{02}(T_0-T_2) - K_{03}(T_0-T_3) - \dots$$
$$- K_{05}(T_0-T_5) - K_{06}(T_0-T_6) - K_{07}(T_0-T_7) - \dots$$

$$= q_0 - C_0\frac{dT_0}{dt} - (K_{01}+K_{02}+\dots+K_{0\text{-}25})T_0 + K_{01}T_1 + K_{02}T_2 + K_{03}T_3 + \dots$$

$$0 = q_6 - C_6\frac{dT_6}{dt} - K_{60}(T_6-T_0) - K_{61}(T_6-T_1) - K_{62}(T_6-T_2) - K_{63}(T_6-T_3) - \dots$$
$$- K_{65}(T_6-T_5) - K_{67}(T_6-T_6) - K_{68}(T_6-T_8) - K_{69}(T_6-T_9) - \dots$$

$$= q_6 - C_6\frac{dT_6}{dt} - (K_{60}+K_{61}+K_{62}+\dots+K_{6\text{-}25})T_6 + K_{60}T_0 + K_{61}T_1 + K_{62}T_2 + \dots$$

$$\underline{\underline{K}} = \begin{bmatrix} -\sum_{\substack{0\le i\le N \\ i\neq 0}} K_{0,i} & K_{01} & K_{02} & K_{03} & K_{04} & K_{05} & K_{06} & K_{07} & K_{08} & \dots \\ K_{10} & -\sum_{\substack{0\le i\le N \\ i\neq 1}} K_{1,i} & K_{12} & K_{13} & & & & & & \\ K_{20} & K_{21} & -\sum_{\substack{0\le i\le N \\ i\neq 2}} K_{2,i} & K_{23} & & & & & & \\ K_{30} & K_{31} & K_{32} & & & & & & & \end{bmatrix} \begin{bmatrix} T_0 \\ T_1 \\ T_2 \end{bmatrix}$$

if T_i, T_j, T_K are inputs, eliminate i, j, and K rows + columns

no K_{ii}, K_{ij}, K_{iK}
no K_{ji}, K_{jj}, K_{jK}
no K_{Ki}, K_{Kj}, K_{KK}

$$+ \underbrace{\begin{bmatrix} K_{0i} & K_{0j} & K_{0K} \\ K_{1i} & K_{1j} & K_{1K} \\ K_{2i} & K_{2j} & K_{2K} \\ K_{3i} & K_{3j} & K_{3K} \\ \vdots & \vdots & \vdots \\ K_{Ni} & K_{Nj} & K_{NK} \end{bmatrix}}_{B} \underbrace{\begin{bmatrix} T_i \\ T_j \\ T_K \end{bmatrix}}_{T_{in}}$$

General Case ÷