

$$A = \begin{pmatrix} 0 & 1 & 3 & 1 \\ 1 & 4 & 5 & 0 \\ 1 & 1 & 2 & 1 \\ 2 & 1 & 1 & 1 \end{pmatrix}$$

$$b_0 = \begin{pmatrix} 1 \\ 0 \\ 0 \\ 0 \end{pmatrix}, \quad b_1 = A \cdot b_0 = \begin{pmatrix} 0 \\ 1 \\ 1 \\ 2 \end{pmatrix}, \quad b_2 = A \cdot b_1 = \begin{pmatrix} 6 \\ 9 \\ 4 \\ 3 \end{pmatrix}$$

$$b_3 = A \cdot b_2 = \begin{pmatrix} 27 \\ 61 \\ 26 \\ 22 \end{pmatrix}, \quad b_4 = A \cdot b_3 = \begin{pmatrix} 184 \\ 405 \\ 163 \\ 137 \end{pmatrix}$$

$$\begin{array}{ccccccc} b_0 & & b_1 & & b_2 & & b_3 \\ \downarrow & & \downarrow & & \downarrow & & \downarrow \\ 1 \cdot p_4 + 0 \cdot p_3 + 6 \cdot p_2 + 27 p_1 & = & -184 \\ 0 \cdot p_4 + 1 \cdot p_3 + 9 p_2 + 61 p_1 & = & -405 \\ 0 \cdot p_4 + 1 \cdot p_3 + 4 p_2 + 26 p_1 & = & -163 \\ 0 \cdot p_4 + 1 \cdot p_3 + 3 p_2 + 22 p_1 & = & -137 \end{array} \quad \left. \vphantom{\begin{array}{l} 1 \cdot p_4 + 0 \cdot p_3 + 6 \cdot p_2 + 27 p_1 = -184 \\ 0 \cdot p_4 + 1 \cdot p_3 + 9 p_2 + 61 p_1 = -405 \\ 0 \cdot p_4 + 1 \cdot p_3 + 4 p_2 + 26 p_1 = -163 \\ 0 \cdot p_4 + 1 \cdot p_3 + 3 p_2 + 22 p_1 = -137 \end{array}} \right\} \begin{array}{l} p_1 = -7 \\ p_2 = 2 \\ p_3 = 11 \\ p_4 = -7 \end{array}$$

$$\begin{aligned} \pi(\lambda) &= (-1)^n (\lambda^n + p_1 \lambda^{n-1} + \dots + p_{n-1} \lambda + p_n) \\ &= (-1)^4 (\lambda^4 - 7 \lambda^3 + 2 \lambda^2 + 11 \lambda - 7) \end{aligned}$$

A \setminus b