

$$\#1: A := \begin{bmatrix} 1 & 2 & 1 \\ 2 & 6 & 1 \\ 1 & 1 & 4 \end{bmatrix}$$

$$\#2: B := \begin{bmatrix} 2 \\ 7 \\ 3 \end{bmatrix}$$

$$\#3: A^{-1} \cdot B = \begin{bmatrix} -3 \\ 2 \\ 1 \end{bmatrix}$$

$$\#4: A1 := \text{APPEND_COLUMNS}(B, A_{\downarrow\downarrow}[2, 3])$$

$$\#5: A1 = \begin{bmatrix} 2 & 2 & 1 \\ 7 & 6 & 1 \\ 3 & 1 & 4 \end{bmatrix}$$

$$\#6: A2 := \text{APPEND_COLUMNS}(A_{\downarrow\downarrow}[1], B, A_{\downarrow\downarrow}[3])$$

$$\#7: A2 = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 7 & 1 \\ 1 & 3 & 4 \end{bmatrix}$$

$$\#8: A3 := \text{APPEND_COLUMNS}(A_{\downarrow\downarrow}[1, 2], B)$$

$$\#9: A3 = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 6 & 7 \\ 1 & 1 & 3 \end{bmatrix}$$

$$\#10: \frac{\text{DET}(A1)}{\text{DET}(A)} = -3$$

$$\#11: \frac{\text{DET}(A2)}{\text{DET}(A)} = 2$$

$$\#12: \frac{\text{DET}(A3)}{\text{DET}(A)} = 1$$