Step	Algorithm: $[y] := \text{SYMV_L_UNB_VAR5}(A, x, y)$
1a	$y = \widehat{y}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, x \to \begin{pmatrix} x_T \\ x_B \end{pmatrix}, y \to \begin{pmatrix} y_T \\ y_B \end{pmatrix}$ where A_{BR} is 0×0 , x_B has 0 rows, y_B has 0 rows
2	$ \left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) $
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \wedge m(A_{BR}) < m(A)$
5a	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ x_B \end{array}\right) \rightarrow \left(\begin{array}{c} x_0 \\ \chi_1 \\ x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ y_B \end{array}\right) \rightarrow \left(\begin{array}{c} y_0 \\ \psi_1 \\ y_2 \end{array}\right) $ where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row
6	$\left(\frac{y_0}{\psi_1}\right) = \left(\frac{\widehat{y_0}}{\widehat{\psi_1}}\right) = \left(\frac{\widehat{y_0}}{\widehat{\psi_1}}\right)$
8	$\psi_1 := \psi_1 + a_{11}\chi_1 + a_{21}^T x_2$ $y_2 := y_2 + a_{21}\chi_1$
5b	$ \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BR} \end{vmatrix} \leftarrow \left(\frac{A_{00}}{a_{01}} \begin{vmatrix} a_{01} \\ a_{11} \\ A_{21} \end{vmatrix} \begin{vmatrix} A_{02} \\ A_{22} \end{vmatrix}, \left(\frac{x_T}{x_B}\right) \leftarrow \left(\frac{x_0}{x_1} \\ x_2 \end{vmatrix}, \left(\frac{y_T}{y_B}\right) \leftarrow \left(\frac{y_0}{y_1} \\ y_2 \end{vmatrix}\right) $
7	$ \left(\frac{y_0}{\underline{\psi_1}}\right) = \left(\frac{\widehat{y_0}}{\widehat{\psi_1} + a_{11}\chi_1 + a_{21}^T x_2} \right) \\ \widehat{y_2} + a_{21}\chi_1 + A_{22}x_2 $
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right)$
	endwhile
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \land \neg (m(A_{BR}) < m(A))$
1b	$[y] = \operatorname{symv} A(A, x, \widehat{y}) = Ax + \widehat{y}$

Algorithm: $[y] := \text{SYMV_L_UNB_VAR5}(A, x, y)$

$$A \to \left(\frac{A_{TL} A_{TR}}{A_{BL} A_{BR}}\right), x \to \left(\frac{x_T}{x_B}\right), y \to \left(\frac{y_T}{y_B}\right)$$

where A_{BR} is 0×0 , x_B has 0 rows, y_B has 0 rows

while $m(A_{BR}) < m(A)$ do

$$\left(\frac{A_{TL} | A_{TR}}{A_{BL} | A_{BR}}\right) \to \left(\frac{A_{00} | a_{01} | A_{02}}{a_{10}^T | a_{11} | a_{12}^T}\right), \left(\frac{x_T}{x_B}\right) \to \left(\frac{x_0}{\chi_1}\right), \left(\frac{y_T}{y_B}\right) \to \left(\frac{y_0}{\psi_1}\right)$$

where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row

 $\psi_1 := \psi_1 + a_{11}\chi_1 + a_{21}^T x_2 \ y_2 := y_2 + a_{21}\chi_1$

$$\left(\frac{A_{TL}|A_{TR}}{A_{BL}|A_{BR}}\right) \leftarrow \left(\frac{A_{00}|a_{01}|A_{02}}{a_{10}^{T}|\alpha_{11}|a_{12}^{T}}\right), \left(\frac{x_{T}}{x_{B}}\right) \leftarrow \left(\frac{x_{0}}{\chi_{1}}\right), \left(\frac{y_{T}}{y_{B}}\right) \leftarrow \left(\frac{y_{0}}{\psi_{1}}\right)$$

endwhile

Step	Algorithm: $[y] := \text{SYMV_L_UNB_VAR5}(A, x, y)$
1a	$y=\widehat{y}$
4	
	zzh one
	where
2	
3	while do
2,3	\wedge
5a	
	where
6	
8	
0	
5b	
7	
2	
	endwhile
2,3	$\wedge \neg (\hspace{1cm})$
1b	$[y] = \operatorname{symvl}(A, x, \widehat{y}) = Ax + \widehat{y}$

Step	Algorithm: $[y] := \text{SYMV_L_UNB_VAR5}(A, x, y)$
1a	$y = \widehat{y}$
4	
	where
2	$\left(rac{y_T}{y_B} ight) = \left(rac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B} ight)$
3	while do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \wedge$
5a	
Ja	
	where
6	
8	
5b	
_	
7	
2	$\left(rac{y_T}{y_B} ight) = \left(rac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B} ight)$
	endwhile
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \wedge \neg ($
1b	$[y] = \operatorname{symv} \mathbb{1}(A, x, \widehat{y}) = Ax + \widehat{y}$

Step	Algorithm: $[y] := \text{SYMV_L_UNB_VAR5}(A, x, y)$
1a	$y = \widehat{y}$
4	
2	where $ \left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) $
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \wedge m(A_{BR}) < m(A)$
5a	
	where
6	
8	
5b	
7	
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right)$
	endwhile
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \land \neg (m(A_{BR}) < m(A))$
1b	$[y] = \operatorname{symv} A(A, x, \widehat{y}) = Ax + \widehat{y}$

Step	Algorithm: $[y] := \text{SYMV_L_UNB_VAR5}(A, x, y)$
1a	$y=\widehat{y}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, x \to \begin{pmatrix} x_T \\ x_B \end{pmatrix}, y \to \begin{pmatrix} y_T \\ y_B \end{pmatrix}$ where A_{BR} is 0×0 , x_B has 0 rows, y_B has 0 rows
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right)$
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \wedge m(A_{BR}) < m(A)$
5a	
	where
6	
8	
5b	
7	
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right)$
	endwhile
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \land \neg (m(A_{BR}) < m(A))$
1b	$[y] = \operatorname{symv} A(A, x, \widehat{y}) = Ax + \widehat{y}$

Step	Algorithm: $[y] := \text{SYMV_L_UNB_VAR5}(A, x, y)$
1a	$y = \widehat{y}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, x \to \begin{pmatrix} x_T \\ x_B \end{pmatrix}, y \to \begin{pmatrix} y_T \\ y_B \end{pmatrix}$ where A_{BR} is 0×0 , x_B has 0 rows, y_B has 0 rows
2	$ \left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) $
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \wedge m(A_{BR}) < m(A)$
5a	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ \hline x_B \end{array}\right) \rightarrow \left(\begin{array}{c} x_0 \\ \hline \chi_1 \\ \hline x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ y_B \end{array}\right) \rightarrow \left(\begin{array}{c} y_0 \\ \hline \psi_1 \\ \hline y_2 \end{array}\right) $ where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row
6	
8	
5b	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ \hline x_B \end{array}\right) \leftarrow \left(\begin{array}{c} x_0 \\ \hline \chi_1 \\ \hline x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ \hline y_B \end{array}\right) \leftarrow \left(\begin{array}{c} y_0 \\ \hline \psi_1 \\ \hline y_2 \end{array}\right) $
7	
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right)$
	endwhile
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \land \neg (m(A_{BR}) < m(A))$
1b	$[y] = \operatorname{symv} A(A, x, \widehat{y}) = Ax + \widehat{y}$

Step	Algorithm: $[y] := \text{SYMV_L_UNB_VAR5}(A, x, y)$
1a	$y=\widehat{y}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, x \to \begin{pmatrix} x_T \\ x_B \end{pmatrix}, y \to \begin{pmatrix} y_T \\ y_B \end{pmatrix}$ where A_{BR} is 0×0 , x_B has 0 rows, y_B has 0 rows
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right)$
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \wedge m(A_{BR}) < m(A)$
5a	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ x_B \end{array}\right) \rightarrow \left(\begin{array}{c} x_0 \\ \chi_1 \\ x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ y_B \end{array}\right) \rightarrow \left(\begin{array}{c} y_0 \\ \psi_1 \\ y_2 \end{array}\right) $ where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row
6	$ \left(\frac{y_0}{\psi_1}\right) = \left(\frac{\widehat{y_0}}{\widehat{\psi_1}}\right) = \left(\frac{\widehat{y_0}}{\widehat{y_2} + A_{22}x_2}\right) $
8	
5b	$ \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BR} \end{vmatrix} \leftarrow \left(\frac{A_{00}}{a_{01}} \begin{vmatrix} a_{01} \\ a_{11} \\ A_{20} \end{vmatrix} a_{21} \begin{vmatrix} A_{22} \\ A_{20} \end{vmatrix}, \left(\frac{x_T}{x_B}\right) \leftarrow \left(\frac{x_0}{x_1} \\ \frac{x_1}{x_2}\right), \left(\frac{y_T}{y_B}\right) \leftarrow \left(\frac{y_0}{y_1} \\ \frac{y_0}{y_2}\right) $
7	
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right)$
	endwhile
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \land \neg (m(A_{BR}) < m(A))$
1b	$[y] = \operatorname{symvl}(A, x, \widehat{y}) = Ax + \widehat{y}$

Step	Algorithm: $[y] := \text{SYMV_L_UNB_VAR5}(A, x, y)$
1a	$y=\widehat{y}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, x \to \begin{pmatrix} x_T \\ x_B \end{pmatrix}, y \to \begin{pmatrix} y_T \\ y_B \end{pmatrix}$ where A_{BR} is 0×0 , x_B has 0 rows, y_B has 0 rows
2	$ \left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) $
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \wedge m(A_{BR}) < m(A)$
5a	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ \hline x_B \end{array}\right) \rightarrow \left(\begin{array}{c} x_0 \\ \hline \chi_1 \\ \hline x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ \hline y_B \end{array}\right) \rightarrow \left(\begin{array}{c} y_0 \\ \hline \psi_1 \\ \hline y_2 \end{array}\right) $ where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row
6	$\left(\frac{y_0}{\psi_1}\right) = \left(\frac{\widehat{y_0}}{\widehat{\psi_1}}\right) = \left(\frac{\widehat{y_0}}{\widehat{\psi_1}}\right)$
8	
5b	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ \hline x_B \end{array}\right) \leftarrow \left(\begin{array}{c} x_0 \\ \hline \chi_1 \\ \hline x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ \hline y_B \end{array}\right) \leftarrow \left(\begin{array}{c} y_0 \\ \hline \psi_1 \\ \hline y_2 \end{array}\right) $
7	$\left(\frac{y_0}{\frac{\psi_1}{y_2}}\right) = \left(\frac{\widehat{y_0}}{\widehat{\psi_1} + a_{11}\chi_1 + a_{21}^T x_2} \frac{\widehat{\psi_1} + a_{21}\chi_1 + a_{22}\chi_2}{\widehat{y_2} + a_{21}\chi_1 + A_{22}\chi_2}\right)$
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right)$
	endwhile
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \land \neg (m(A_{BR}) < m(A))$
1b	$[y] = \operatorname{symvl}(A, x, \widehat{y}) = Ax + \widehat{y}$

Step	Algorithm: $[y] := \text{SYMV_L_UNB_VAR5}(A, x, y)$
1a	$y = \widehat{y}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, x \to \begin{pmatrix} x_T \\ x_B \end{pmatrix}, y \to \begin{pmatrix} y_T \\ y_B \end{pmatrix}$ where A_{BR} is 0×0 , x_B has 0 rows, y_B has 0 rows
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right)$
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \wedge m(A_{BR}) < m(A)$
5a	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ \hline x_B \end{array}\right) \rightarrow \left(\begin{array}{c} x_0 \\ \hline \chi_1 \\ \hline x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ \hline y_B \end{array}\right) \rightarrow \left(\begin{array}{c} y_0 \\ \hline \psi_1 \\ \hline y_2 \end{array}\right) $ where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row
6	$\begin{pmatrix} \frac{y_0}{\psi_1} \\ y_2 \end{pmatrix} = \begin{pmatrix} \frac{\widehat{y_0}}{\widehat{\psi_1}} \\ \\ \hline \widehat{y_2} + A_{22}x_2 \end{pmatrix}$
8	$\psi_1 := \psi_1 + a_{11}\chi_1 + a_{21}^T x_2$ $y_2 := y_2 + a_{21}\chi_1$
5b	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ \hline x_B \end{array}\right) \leftarrow \left(\begin{array}{c} x_0 \\ \hline \chi_1 \\ \hline x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ \hline y_B \end{array}\right) \leftarrow \left(\begin{array}{c} y_0 \\ \hline \psi_1 \\ \hline y_2 \end{array}\right) $
7	$ \begin{pmatrix} \frac{y_0}{\psi_1} \\ y_2 \end{pmatrix} = \begin{pmatrix} \frac{\widehat{y_0}}{\widehat{\psi_1} + a_{11}\chi_1 + a_{21}^T x_2} \\ \overline{\widehat{y_2} + a_{21}\chi_1 + A_{22}x_2} \end{pmatrix} $
2	$\left(rac{y_T}{y_B} ight) = \left(rac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B} ight)$
	endwhile
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T}{\widehat{y}_B + A_{BR}x_B}\right) \land \neg (m(A_{BR}) < m(A))$
1b	$[y] = \operatorname{symv} A(A, x, \widehat{y}) = Ax + \widehat{y}$

Step	Algorithm: $[y] := \text{SYMV_L_UNB_VAR5}(A, x, y)$
	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, x \to \begin{pmatrix} x_T \\ x_B \end{pmatrix}, y \to \begin{pmatrix} y_T \\ y_B \end{pmatrix}$ where A_{BR} is 0×0 , x_B has 0 rows, y_B has 0 rows
	while $m(A_{BR}) < m(A)$ do
	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ x_B \end{array}\right) \rightarrow \left(\begin{array}{c} x_0 \\ \hline \chi_1 \\ x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ y_B \end{array}\right) \rightarrow \left(\begin{array}{c} y_0 \\ \hline \psi_1 \\ y_2 \end{array}\right) $ where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row
	$\psi_1 := \psi_1 + a_{11}\chi_1 + a_{21}^T x_2$ $y_2 := y_2 + a_{21}\chi_1$
	$ \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BR} \end{vmatrix} \leftarrow \left(\frac{A_{00}}{a_{01}} \begin{vmatrix} a_{01} \\ a_{11} \\ A_{20} \end{vmatrix} a_{21} \begin{vmatrix} a_{12} \\ A_{22} \end{vmatrix}, \left(\frac{x_T}{x_B}\right) \leftarrow \left(\frac{x_0}{x_1} \\ \frac{x_1}{x_2}\right), \left(\frac{y_T}{y_B}\right) \leftarrow \left(\frac{y_0}{y_1} \\ \frac{y_2}{y_2}\right) $
	endwhile

Algorithm: $[y] := \text{SYMV_L_UNB_VAR5}(A, x, y)$

$$A \to \left(\frac{A_{TL} A_{TR}}{A_{BL} A_{BR}}\right), x \to \left(\frac{x_T}{x_B}\right), y \to \left(\frac{y_T}{y_B}\right)$$

where A_{BR} is 0×0 , x_B has 0 rows, y_B has 0 rows

while $m(A_{BR}) < m(A)$ do

$$\left(\frac{A_{TL} | A_{TR}}{A_{BL} | A_{BR}}\right) \to \left(\frac{A_{00} | a_{01} | A_{02}}{a_{10}^T | a_{11} | a_{12}^T}\right), \left(\frac{x_T}{x_B}\right) \to \left(\frac{x_0}{\chi_1}\right), \left(\frac{y_T}{y_B}\right) \to \left(\frac{y_0}{\psi_1}\right)$$

where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row

 $\psi_1 := \psi_1 + a_{11}\chi_1 + a_{21}^T x_2 \ y_2 := y_2 + a_{21}\chi_1$

$$\left(\frac{A_{TL}|A_{TR}}{A_{BL}|A_{BR}}\right) \leftarrow \left(\frac{A_{00}|a_{01}|A_{02}}{a_{10}^{T}|\alpha_{11}|a_{12}^{T}}\right), \left(\frac{x_{T}}{x_{B}}\right) \leftarrow \left(\frac{x_{0}}{\chi_{1}}\right), \left(\frac{y_{T}}{y_{B}}\right) \leftarrow \left(\frac{y_{0}}{\psi_{1}}\right)$$

endwhile