Step	Algorithm: $C := AB + C$
1a	$\{C = \widehat{C}$ $\}$
4	$A \rightarrow \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right)$, $C \rightarrow \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right)$ where A_B has 0 rows, C_B has 0 rows
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \right\}$
3	while $m(A_B) < m(A)$ do
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \wedge m(A_B) < m(A) \right\}$
5a	**Determine block size** b $\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \rightarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$ where A_1 has b rows, C_1 has b rows
6	$\left\{ \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} \widehat{C}_0 \\ \widehat{C}_1 \\ A_2 B + \widehat{C}_2 \end{pmatrix} \right\}$
8	$C_1 := A_1 B + C_1$
7	$\left\{ \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} \widehat{C}_0 \\ A_1 B + \widehat{C}_1 \\ A_2 B + \widehat{C}_2 \end{pmatrix} \right\}$
5b	$\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \wedge \neg(m(A_B) < m(A)) \right\}$
1b	$\{C := AB + \widehat{C}$ $\}$

Step	Algorithm: $C := AB + C$
1a	{ }
4	where
2	
3	while do
2,3	$\wedge$
5a	**Determine block size** b where
6	
8	
7	
5b	
2	
	endwhile
2,3	$\wedge \neg($ $)$
1b	{ }

Step	Algorithm: $C := AB + C$
1a	$\{C = \widehat{C}$ $\}$
4	where
2	
3	while do
2,3	$\wedge$
5a	**Determine block size** b where
6	
8	
7	
5b	
2	
	endwhile
2,3	$\wedge \neg($ $)$
1b	$\{C := AB + \widehat{C}$ $\}$

Step	Algorithm: $C := AB + C$
1a	$\{C = \widehat{C}$ $\}$
4	where
2	$\left\{ \left(\dfrac{C_T}{C_B} \right) = \left(\dfrac{\widehat{C}_T}{A_B B + \widehat{C}_B} \right) \right.$
3	while do
2,3	$\left\{ \left(\dfrac{C_T}{C_B} \right) = \left(\dfrac{\widehat{C}_T}{A_B B + \widehat{C}_B} \right) \wedge \right.$
5a	**Determine block size** b where
6	$\left\{ \right.$
8	
7	$\left\{ \right.$
5b	
2	$\left\{ \left(\dfrac{C_T}{C_B} \right) = \left(\dfrac{\widehat{C}_T}{A_B B + \widehat{C}_B} \right) \right.$
	endwhile
2,3	$\left\{ \left(\dfrac{C_T}{C_B} \right) = \left(\dfrac{\widehat{C}_T}{A_B B + \widehat{C}_B} \right) \wedge \neg(\quad) \right.$
1b	$\{C := AB + \widehat{C}$ $\}$

Step	Algorithm: $C := AB + C$
1a	$\{C = \widehat{C}$ $\}$
4	where
2	$\left\{ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{A_B B + \widehat{C}_B}\right) \right\}$
3	while $m(A_B) < m(A)$ do
2,3	$\left\{ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{A_B B + \widehat{C}_B}\right) \wedge m(A_B) < m(A) \right\}$
5a	**Determine block size** b where
6	$\left\{ \right\}$
8	
7	$\left\{ \right\}$
5b	
2	$\left\{ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{A_B B + \widehat{C}_B}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{A_B B + \widehat{C}_B}\right) \wedge \neg(m(A_B) < m(A)) \right\}$
1b	$\{C := AB + \widehat{C}$ $\}$

Step	Algorithm: $C := AB + C$
1a	$\{C = \widehat{C}$ $\}$
4	$A \rightarrow \left(\frac{A_T}{A_B}\right)$, $C \rightarrow \left(\frac{C_T}{C_B}\right)$ where A_B has 0 rows, C_B has 0 rows
2	$\left\{ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{A_B B + \widehat{C}_B}\right) \right\}$
3	while $m(A_B) < m(A)$ do
2,3	$\left\{ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{A_B B + \widehat{C}_B}\right) \wedge m(A_B) < m(A) \right\}$
5a	**Determine block size** b where
6	$\left\{ \right\}$
8	
7	$\left\{ \right\}$
5b	
2	$\left\{ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{A_B B + \widehat{C}_B}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{A_B B + \widehat{C}_B}\right) \wedge \neg(m(A_B) < m(A)) \right\}$
1b	$\{C := AB + \widehat{C}$ $\}$

Step	Algorithm: $C := AB + C$
1a	$\{C = \widehat{C}$ $\}$
4	$A \rightarrow \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right)$, $C \rightarrow \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right)$ where A_B has 0 rows, C_B has 0 rows
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \right\}$
3	while $m(A_B) < m(A)$ do
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \wedge m(A_B) < m(A) \right\}$
5a	**Determine block size** b $\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \rightarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$ where A_1 has b rows, C_1 has b rows
6	$\left\{ \right.$ $\left. \right\}$
8	
7	$\left\{ \right.$ $\left. \right\}$
5b	$\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \wedge \neg(m(A_B) < m(A)) \right\}$
1b	$\{C := AB + \widehat{C}$ $\}$

Step	Algorithm: $C := AB + C$
1a	$\{C = \widehat{C}$ $\}$
4	$A \rightarrow \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right)$, $C \rightarrow \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right)$ where A_B has 0 rows, C_B has 0 rows
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \right\}$
3	while $m(A_B) < m(A)$ do
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \wedge m(A_B) < m(A) \right\}$
5a	**Determine block size** b $\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \rightarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$ where A_1 has b rows, C_1 has b rows
6	$\left\{ \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} \widehat{C}_0 \\ \widehat{C}_1 \\ A_2 B + \widehat{C}_2 \end{pmatrix} \right\}$
8	
7	$\left\{ \right\}$
5b	$\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \wedge \neg(m(A_B) < m(A)) \right\}$
1b	$\{C := AB + \widehat{C}$ $\}$

Step	Algorithm: $C := AB + C$
1a	$\{C = \widehat{C}$ $\}$
4	$A \rightarrow \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right)$, $C \rightarrow \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right)$ where A_B has 0 rows, C_B has 0 rows
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \right\}$
3	while $m(A_B) < m(A)$ do
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \wedge m(A_B) < m(A) \right\}$
5a	**Determine block size** b $\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \rightarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$ where A_1 has b rows, C_1 has b rows
6	$\left\{ \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} \widehat{C}_0 \\ \widehat{C}_1 \\ A_2 B + \widehat{C}_2 \end{pmatrix} \right\}$
8	
7	$\left\{ \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} \widehat{C}_0 \\ A_1 B + \widehat{C}_1 \\ A_2 B + \widehat{C}_2 \end{pmatrix} \right\}$
5b	$\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \wedge \neg(m(A_B) < m(A)) \right\}$
1b	$\{C := AB + \widehat{C}$ $\}$

Step	Algorithm: $C := AB + C$
1a	$\{C = \widehat{C}$ $\}$
4	$A \rightarrow \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right)$, $C \rightarrow \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right)$ where A_B has 0 rows, C_B has 0 rows
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \right\}$
3	while $m(A_B) < m(A)$ do
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \wedge m(A_B) < m(A) \right\}$
5a	**Determine block size** b $\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \rightarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$ where A_1 has b rows, C_1 has b rows
6	$\left\{ \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} \widehat{C}_0 \\ \widehat{C}_1 \\ A_2 B + \widehat{C}_2 \end{pmatrix} \right\}$
8	$C_1 := A_1 B + C_1$
7	$\left\{ \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} \widehat{C}_0 \\ A_1 B + \widehat{C}_1 \\ A_2 B + \widehat{C}_2 \end{pmatrix} \right\}$
5b	$\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} \widehat{C}_T \\ \hline A_B B + \widehat{C}_B \end{array}\right) \wedge \neg(m(A_B) < m(A)) \right\}$
1b	$\{C := AB + \widehat{C}$ $\}$

Algorithm: $C := AB + C$

$$A \rightarrow \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right), C \rightarrow \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right)$$

where A_B has 0 rows, C_B has 0 rows

while $m(A_B) < m(A)$ do

Determine block size b

$$\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \rightarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$$

where A_1 has b rows, C_1 has b rows

$C_1 := A_1 B + C_1$

$$\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$$

endwhile

Algorithm: $C := AB + C$

$$A \rightarrow \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right), \quad C \rightarrow \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right)$$

where A_B has 0 rows, C_B has 0 rows

while $m(A_B) < m(A)$ do

Determine block size b

$$\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \rightarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right), \quad \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$$

where A_1 has b rows, C_1 has b rows

$C_1 := A_1 B + C_1$

$$\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \end{array}\right), \quad \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$$

endwhile