

$$\begin{pmatrix} -1 & 2 \\ 0 & 1 \\ -2 & 3 \end{pmatrix} \left( \begin{array}{c|c|c} 1 & -2 & 0 \\ \hline 2 & -1 & 3 \end{array} \right) + \begin{pmatrix} 3 & 0 & -4 \\ -2 & 1 & -3 \\ 1 & -1 & -2 \end{pmatrix}$$

$$\begin{aligned}
&= \left( \begin{array}{|c|} \hline -1 \\ \hline 0 \\ \hline -2 \\ \hline \end{array} \times \begin{array}{|c|} \hline 1 \\ \hline 1 \\ \hline 1 \\ \hline \end{array} + \begin{array}{|c|} \hline 2 \\ \hline 1 \\ \hline 3 \\ \hline \end{array} \times \begin{array}{|c|} \hline 2 \\ \hline 2 \\ \hline 2 \\ \hline \end{array} + 3 \left| \begin{array}{|c|} \hline -1 \\ \hline 0 \\ \hline -2 \\ \hline \end{array} \times \begin{array}{|c|} \hline -2 \\ \hline -2 \\ \hline -2 \\ \hline \end{array} + \begin{array}{|c|} \hline 2 \\ \hline 1 \\ \hline 3 \\ \hline \end{array} \times \begin{array}{|c|} \hline -1 \\ \hline -1 \\ \hline -1 \\ \hline \end{array} + 0 \left| \begin{array}{|c|} \hline -1 \\ \hline 0 \\ \hline -2 \\ \hline \end{array} \times \begin{array}{|c|} \hline 0 \\ \hline 0 \\ \hline 0 \\ \hline \end{array} + \begin{array}{|c|} \hline 2 \\ \hline 1 \\ \hline 3 \\ \hline \end{array} \times \begin{array}{|c|} \hline 3 \\ \hline 3 \\ \hline 3 \\ \hline \end{array} - 4 \right. \right. \right. \\
&= \left( \left( \begin{pmatrix} -1 & 2 \\ 0 & 1 \\ -2 & 3 \end{pmatrix} \begin{pmatrix} 1 \\ \hline 2 \end{pmatrix} + \begin{pmatrix} 3 \\ -2 \\ 1 \end{pmatrix} \right) \left| \left( \begin{pmatrix} -1 & 2 \\ 0 & 1 \\ -2 & 3 \end{pmatrix} \begin{pmatrix} -2 \\ \hline -1 \end{pmatrix} + \begin{pmatrix} 0 \\ 1 \\ -1 \end{pmatrix} \right) \left| \left( \begin{pmatrix} -1 & 2 \\ 0 & 1 \\ -2 & 3 \end{pmatrix} \begin{pmatrix} 0 \\ \hline 3 \end{pmatrix} + \begin{pmatrix} -4 \\ -3 \\ -2 \end{pmatrix} \right) \right. \right. \right)
\end{aligned}$$