

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

$$= \left(\begin{array}{c} \boxed{-1} \times \boxed{1} + \boxed{2} \times \boxed{2} + 3 \boxed{-1} \times \boxed{-2} + \boxed{0} \times \boxed{0} + \boxed{2} \times \boxed{3} - 4 \\ \boxed{0} \times \boxed{1} + \boxed{1} \times \boxed{2} - 2 \boxed{0} \times \boxed{-2} + \boxed{1} \times \boxed{-1} + 1 \boxed{0} \times \boxed{0} + \boxed{1} \times \boxed{3} - 3 \\ \boxed{-2} \times \boxed{1} + \boxed{3} \times \boxed{2} + 1 \boxed{-2} \times \boxed{-2} + \boxed{3} \times \boxed{-1} - 1 \boxed{-2} \times \boxed{0} + \boxed{3} \times \boxed{3} - 2 \end{array} \right)$$

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