

Solution (#558)

$$A(B + C) = \begin{pmatrix} 1 & 3 & 0 \\ 2 & 1 & 1 \end{pmatrix} \begin{pmatrix} 3 & 1 \\ 1 & 2 \\ -1 & 0 \end{pmatrix} = \begin{pmatrix} 6 & 7 \\ 6 & 4 \end{pmatrix},$$

$$AB = \begin{pmatrix} 7 & 3 \\ 3 & 0 \end{pmatrix}, \quad AC = \begin{pmatrix} -1 & 4 \\ 3 & 4 \end{pmatrix}, \quad AB + AC = \begin{pmatrix} 6 & 7 \\ 6 & 4 \end{pmatrix}.$$