

Problem 1. Consider the matrices

$$A = \begin{pmatrix} 1 & 0 & 3 \\ 4 & -1 & 8 \end{pmatrix}, \quad B = \begin{pmatrix} 2 & 3 & 1 \\ 2 & 1 & 2 \end{pmatrix}, \quad C = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}.$$

For each of the following, compute the matrix or indicate that the expression is undefined.

$$A + B$$

$$B - 2A$$

$$C^2$$

$$I_2B - AI_3$$