

THE EXISTENCE AND THE REPRESENTATIONS FOR THE GROUP INVERSE OF BLOCK MATRICES UNDER SOME CONDITIONS

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Abstract. In this paper, we give the existence and the representations for the group inverse of block matrices $M = \begin{pmatrix} M_1 & A \\ B & D \end{pmatrix}$ having a sub-block M_1 which is a combination of sub-block A and B , and give the existence and the representations for the group inverse of block matrices $\begin{pmatrix} A & B \\ C & D \end{pmatrix}$ under some conditions. Finally, some numerical examples are given to illustrate our results.

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