

Let $T : \mathbb{R}^2 \rightarrow \mathbb{R}^2$ be given by

$$T(\vec{x}) = \begin{bmatrix} 3 & 5 \\ 2 & -1 \end{bmatrix} \vec{x}.$$

Find the matrix M of the inverse linear transformation T^{-1} .

$$M = \left[\begin{array}{|c|} \hline \boxed{} \\ \hline \boxed{} \\ \hline \end{array} \quad \begin{array}{|c|} \hline \boxed{} \\ \hline \boxed{} \\ \hline \end{array} \right]$$

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$$M = \begin{bmatrix} \boxed{1/13} & \boxed{5/13} \\ \boxed{2/13} & \boxed{-3/13} \end{bmatrix}$$