

Matrix Inverses Extra Practice

Find the inverse of the following matrices or state that one does not exist. State which matrix is a singular matrix.

$$\begin{pmatrix} 1 & 0 \\ 2 & 1 \end{pmatrix} \quad \begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix} \quad \begin{pmatrix} 2 & 4 \\ 2 & 1 \end{pmatrix} \quad \begin{pmatrix} 3 & 4 \\ -6 & -8 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 0 & 1 \\ 1 & 1 & 1 \\ 2 & -1 & 1 \end{pmatrix} \quad \begin{pmatrix} 2 & -1 & 1 \\ 1 & 2 & 1 \\ 3 & 1 & 2 \end{pmatrix} \quad \begin{pmatrix} 1 & 3 & 1 \\ 1 & 2 & 1 \\ 2 & 2 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 3 & 1 \\ 0 & 1 & 1 \\ 1 & 4 & 2 \end{pmatrix} \quad \begin{pmatrix} 1 & 0 & 1 & 0 \\ 1 & 1 & -2 & 0 \\ 0 & 1 & 1 & 1 \\ 0 & 0 & 0 & 1 \end{pmatrix} \quad \begin{pmatrix} 1 & 1 & 2 & 0 \\ 1 & 1 & 2 & 0 \\ 1 & 2 & 3 & 1 \\ 1 & 0 & 1 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 1 & -1 & 2 \\ 0 & 2 & 2 \\ 1 & 0 & 3 \end{pmatrix} \quad \begin{pmatrix} 1 & 1 & -2 \\ 0 & 1 & 1 \\ 0 & 0 & 0 \end{pmatrix} \quad \begin{pmatrix} -1 & 1 & -1 \\ 0 & -1 & 1 \\ 1 & 1 & 2 \end{pmatrix}$$

$$\begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 1 \\ 0 & 0 & 2 \end{pmatrix} \quad \begin{pmatrix} 0 & 0 & 1 \\ 1 & 0 & 1 \\ 0 & 1 & 1 \end{pmatrix} \quad \begin{pmatrix} 1 & 1 & 0 & 0 \\ 1 & 1 & 0 & 1 \\ 1 & 0 & 1 & 1 \\ 1 & 0 & 1 & 0 \end{pmatrix}$$