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2110201 Quiz2

Basic Skills

1. (0.5,0.5,2 points) Find the determinant of the following matrices

   a. $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ b. $\begin{bmatrix} 1 & 2 & 1 \\ 4 & 3 & 1 \\ -1 & 4 & 5 \end{bmatrix}$ c. $\begin{bmatrix} 0 & 2 & 1 & 0 & 0 \\ 1 & 0 & 1 & 1 & 2 \\ 0 & 0 & 0 & 4 & 1 \\ 1 & 0 & 1 & 0 & 5 \\ 0 & 0 & 3 & 1 & 1 \end{bmatrix}$

2. (1 point) Compute $AB + 3C$ where $A = \begin{bmatrix} 1 & 2 & 3 \\ 1 & 3 & 2 \end{bmatrix}, B = \begin{bmatrix} 4 & 5 \\ 3 & 2 \\ 4 & 1 \end{bmatrix}, C = \begin{bmatrix} 1 & 3 \\ 2 & 4 \end{bmatrix}$

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3. (3 points) Find a linear equation describing the plane containing the points (1,-2,3), (-2,3,1) and (3,1,-2) in $\mathbb{R}^3$.

4. (1,2 points) Find the inverse of the following matrices

   a. $\begin{bmatrix} a & b \\ c & d \end{bmatrix}$ b. $\begin{bmatrix} 2 & 1 & 1 & 1 \\ 1 & 0 & -1 & -1 \\ 1 & -1 & 0 & 1 \\ 1 & -1 & 1 & 2 \end{bmatrix}$