

**Class Problems and Homework**  
Physics 403: Mathematical Methods  
February 27, 2008

Problems: Instructor, group and homework.

1. Compute the inverse of

$$\mathbf{A} = \begin{pmatrix} 3 & -2 & 8 \\ 0 & 1 & 4 \\ 2 & -3 & 3 \end{pmatrix}.$$

2. Compute the inverse of

$$\mathbf{C} = \begin{pmatrix} 0 & -2 & 8 & 1 \\ 3 & -1 & 0 & 4 \\ -2 & -3 & -1 & 0 \\ 7 & 3 & 1 & -1 \end{pmatrix}.$$

3. Solve the following system of equations by computing an inverse matrix

$$\begin{aligned} 2x - y &= -8 \\ -3x + 4y &= -1. \end{aligned}$$

4. Solve the following system of equations by computing an inverse matrix

$$\begin{aligned} 2x + 3y - 4z &= -3 \\ 3x - 2y + 5z &= 24 \\ x + 4y - 3z &= -6. \end{aligned}$$